

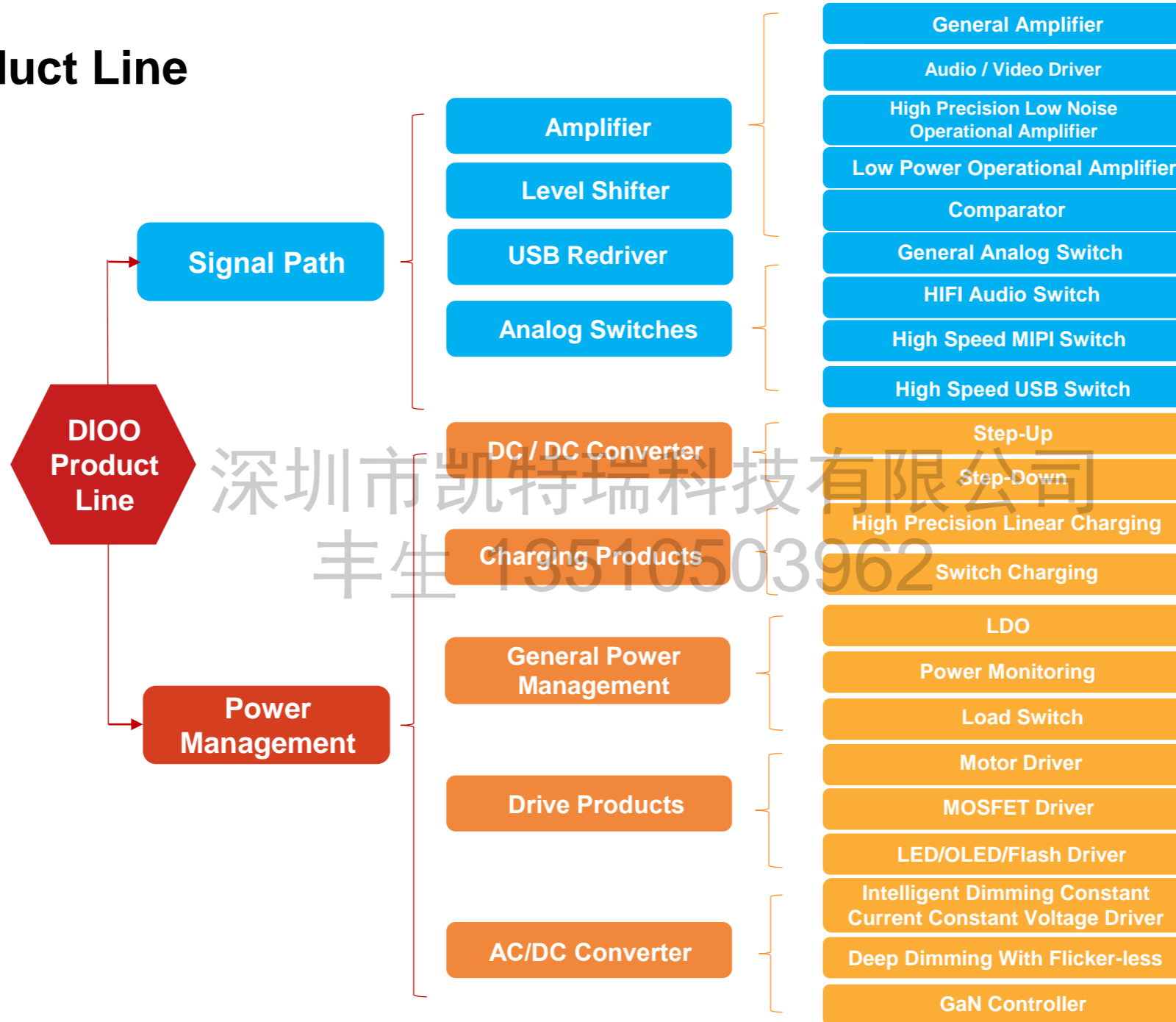


# 江苏帝奥微电子股份有限公司

Dioo Microcircuits Co., Ltd. Jiangsu

工业和消费产品路标

# DIOO Product Line



## 运放

### 通用运放

- 通用运放
- 高精度运放
- 高速运放
- 低功耗运放
- 高压运放
- 电流采样
- 功率监测
- 比较器

## 开关

### 模拟开关

- MIPI开关
- PCIE高速开关
- USB高速开关
- 音频开关
- I2C开关
- SIM开关
- 通用开关

### 信号中继器

- 5GHz 信号中继器
- 10GHz 信号中继器

### 电平转换

- 1-8通道电平转换

## 传感器

### 温度传感器

- 服务器温感
- 笔电温感
- 穿戴温感
- 白电温感

### 霍尔传感器

- 霍尔开关
- 电流传感
- 轮速传感
- 角度传感

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# Amplifier & Comparator

★  
Featured Product

MP  
DV



Bandwidth ↑

General Amplifier

## DIO2022x

- VIN: 2.5-5.5V
- Supply current: 190uA/Ch, 1-4CH
- Vos: ±5mV(Max)
- Bandwidth: 3MHz
- Slew rate: 1.7V/us, 80mA Iout

## DIO203x

- VIN: 2.5-5.5V
- Supply current: 350uA/Ch, 1-6CH
- Vos: ±3.5mV(Max)
- Bandwidth: 6MHz,
- **Disable Function**
- Slew rate: 3.6V/us, 45mA Iout

## DIO2032x

- VIN: 2.5-5.5V
- Supply current: 350uA/Ch, 1-6CH
- Vos: ±3.5mV(Max)
- Bandwidth: 6MHz
- Slew rate: 3.6V/us, 45mA Iout

## DIO2172

- VIN: 3-5.5V
- Supply current: 3mA
- Vos: 5mV(Max)
- Bandwidth: 10MHz
- Slew rate: 7V/us
- TSOT23-8 Package

## DIO2072x DIO20721D

- VIN: 2.5-5.5V
- Supply current: 620uA/ch, 1-4CH
- Vos: 5mV(Max)
- Bandwidth: 10MHz
- Slew rate: 6.5V/us, 80mA Iout
- Pin compatible to TLV236x, OPAx374, MCP620x

## DIO8358

- VIN: 2.1-5.5V
- Supply current: 50uA/Ch, 2CH
- Vos: ±3.5mV(Max) CH1, 0-8mV(Max) CH2
- Bandwidth: 1MHz
- Slew rate: 0.6V/us, 50mA Iout

## DIO32358

- VIN: 2-5.5V
- Supply current: 60uA/ch, 2CH
- Vos: 0-6mV(Max)
- Bandwidth: 1.4MHz
- Slew rate: 0.6V/us, 40mA Iout
- Pin compatible to TLV6002, LMV612, LMV358, OPA2348, OPA2313

## DIO358x

- VIN: 2-5.5V
- Supply current: 60uA/ch, 1-4CH
- Vos: ±3mV(Max)
- Bandwidth: 1.4MHz
- Slew rate: 0.6V/us
- Pin compatible to TLV904x, OPAx347, TLV900x

高通参考设计

## DIO3205x

- VIN: 2.1-5.5V
- Supply current: 24uA/ch, 1-4CH
- Vos: ±3mV(Max)
- Bandwidth: 0.5MHz
- Slew rate: 0.29V/us, 28mA Iout
- Pin compatible to TLV904x, OPAx347, TLV900x

## DIO2051A

- VIN: 1.8-5.5V
- Supply current: 16uA/ch, 1CH
- Vos: ±3.5mV(Max)
- Bandwidth: 550KHz
- Slew rate: 0.32V/us
- Pin compatible to TLV9041, OPA347, TP6001U

## DIO32051ACN4

- VIN: 1.8-5.5V
- **Qualcomm REF Design**
- Supply current: 24uA/ch, 1CH
- Vos: ±3mV(Max)
- Bandwidth: 0.5MHz
- Slew rate: 0.29V/us
- **DFN0.8\*0.8-4**, TLV9041, TLV9001

## DIO2900x

- VIN: **1.65**-5.5V
- Supply current: 40uA/ch, 1-4CH
- Vos: ±1.5mV(Max)
- Bandwidth: 0.4MHz
- Slew rate: 0.17V/us
- P2P TLV904x, OPAx347, TLV900x
- Promote DIO29001 Instead of DIO32051

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# High Precision & Low Power Amplifier

★  
Featured Product

MP  
DV



Low Power

Low Offset

1PA超低偏置  
电流  
380nA超低静  
态功耗



5uV超低  
失调电压

Iq

## DIO2092x

- VIN:1.8-5.5V
- Supply current: 4uA/ch
- Channel: 1/2/4
- Vos:  $\pm 5\text{mV}(\text{Max})$ , BW:150KHz
- Slew rate: 70V/ms
- Pin compatible to TLVx379

## DIO20491

- VIN:1.8-5.5V
- Supply current: 4uA/ch
- Channel: 1
- Vos:  $\pm 0.85\text{mV}(\text{Max})$ , BW: 150KHz
- Slew rate: 70V/ms
- Pin compatible to TLV379

## DIO2088x

- VIN:1.4-5.5V
- Supply current: 600nA/ch
- Channel: 1/2/4
- Vos:  $\pm 3.5\text{mV}(\text{Max})$ ,  $\pm 0.5\text{mV}(\text{Max})$  for DIO20882A
- Bandwidth: 14KHz
- Slew rate: 3.5V/ms

## DIO2038x

- VIN:1.4-5.5V
- Supply current: **380nA/ch**
- Channel: 1/2/4
- Vos:  $\pm 3\text{mV}(\text{Max})$
- Bandwidth: 5KHz
- Slew rate: 1.5V/ms
- Pin compatible to TLV880x

## DIO20182

- VIN:1.4-5.5V
- Supply current: **380nA/ch**
- Channel: 2
- Vos:  $\pm 3\text{mV}(\text{Max})$
- **1pA low input Bias**
- Bandwidth: 5KHz
- Slew rate: 1.5V/ms

## DIO233X/B

- VIN:1.8-5.5V
- Supply current: 1uA/ch
- Channel: 1/2/4
- Vos:  $\pm 15/35\text{uV}(\text{Max})$
- Bandwidth: 30KHz
- Slew rate: 10V/ms
- Pin compatible to MCP603x

## DIO234X/B

- VIN:1.8-5.5V
- Supply current: 1.1uA/ch
- Channel: 1/2/3/4
- Vos:  $\pm 35/70\text{uV}(\text{Max})$
- Bandwidth: 30KHz
- Slew rate: 9V/ms

## DIO235X

- VIN:2.5-5.5V
- Supply current: 0.73mA/ch
- Channel: 1/2/4
- Vos: 30uV(Max)
- Bandwidth: 1.2MHz
- Input bias currents: 20pA
- Slew rate: 1V/us

## DIO238X

- VIN:2.5-5.5V
- Supply current: 38uA/ch
- Channel: 1/2
- Vos: **5/10/20uV(Max)**, BW: 450KHz
- Input bias currents: 10pA
- Slew rate: 0.3V/us
- Pin compatible to OPAx330

## DIO20991

- VIN:1.8-5.5V, 1CH
- Supply current: 7uA
- Vos:  $\pm 60\text{uV}(\text{Max})$
- Bandwidth: 110KHz
- Input bias currents: 50pA
- Slew rate: 80V/ms
- Package: DFN1.2\*1.2-6

## DIO2372MP8

- VIN:2.5-5.5V
- Supply current: 17uA/ch
- Channel: 2
- Vos: 28uV(Max)
- Bandwidth: 300KHz
- Slew rate: 160V/ms
- Package: MSOP-8

## DIO2361/A/AL/L

- VIN:1.8-5.5V
- Supply current: 35uA/17uA/7uA
- Channel: 1
- Vos:  $\pm 10-65\text{uV}(\text{Max})$
- Bandwidth: 300/300/110KHz
- Slew rate: 160/160/80V/ms

## DIO2362/2L/4

- VIN:1.8-5.5V
- Supply current: 17/7/17uA/ch
- Channel: 2/4
- Vos: 65uV(Max)
- Bandwidth: 300/110/300KHz
- Slew rate: 160/80/160V/ms

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# Amplifier & Comparator

105MHz高带宽  
85V/us超高压摆率

Featured Product

MP

DV



High Voltage Amplifier

## DIO270x

- VIN:4.5-32V
- Supply current: 1.4mA/ch
- Vos:  $\pm 3.5\text{mV}(\text{Max})$
- Bandwidth: 6MHz
- Input bias currents: 10pA
- Slew rate: 20V/us

## DIO2601/2/4

- VIN: 4.5-36V
- Supply current: 0.75mA/ch
- Vos:  $\pm 3.5\text{mV}(\text{Max})$ , BW:3.5MHz
- Input bias currents: 10pA
- Slew rate: 2.5V/us
- P2P OPA141/2141/4141, LM290X

## DIO2841

- VIN:2.7-12V
- Vos=0.5mV
- Gain-bandwidth:4.5MHz
- Open-Loop Gain: 133 dB
- Pin compatible to LMV841
- Sensor & Measurement

## DIO264X/B

- VIN: 2.7-13.2V
- Supply current: 7mA/ch
- Vos:  $\pm 11\text{mV}(\text{Max})$
- Bandwidth: 105MHz
- Slew rate: 85V/us
- Pin compatible to LMH664X

## DIO2644B

- VIN: 2.7-13.2V
- Supply current: 7mA/ch
- Vos:  $\pm 11\text{mV}(\text{Max})$
- Bandwidth: 105MHz
- Slew rate: 100V/us
- Pin compatible to LMH664X, [Sample](#)

## DIO2210/1/2

- VIN:2.7-40V, Vcm: 70V(Max)
- OPA + Comparator+0.6V REF
- IQ: 470  $\mu\text{A}$ , Vos=10uV
- Options for gain: 20/50/100 V/V
- Open-drain output
- SOIC-8, MSOP-8, P2P INA200
- [Sample](#)

## DIO2213

- VIN:2.7-40V, Vcm: 70V(Max)
- IQ: 470  $\mu\text{A}$ , Vos=10uV
- Options for gain: 50V/V
- Vos:  $\pm 0.15\text{mV}$ , BW: 230KHz
- Slew rate: 2.3V/us
- Package: SOT23-6, SOIC-8
- [Sample](#)

## DIO2240

- VIN:2.7-5.5V, Vos=25uV, Vcm:-4V to 80V
- Excellent CMRR: 132-dB DC
- Gain Error: 0.20%
- Gain-bandwidth:400KHz
- Ultra-Precise Current Sense
- Pin compatible to INA240
- 2024.Jul Sample

## DIO2352x

- VIN:2.5-5.5V, Vcm:5.6V
- Vos:  $\pm 13\mu\text{V}$ , IQ:730uA (Max)
- $\pm 1\%$  Gain error(Max)
- 0.01 $\mu\text{V}/^\circ\text{C}$  Offset drift
- 10ppm/ $^\circ\text{C}$  Gain drift (Max)
- Gains:50V/V; 100V/V

## DIO2388/99x

- Vcm:26V(Max), Vos: $\pm 130\mu\text{V}(\text{Max})$
- IQ:150 $\mu\text{A}$  (Max), Gains:50/100V/V
- $\pm 1.5\%$  Gain error(Max)
- 0.5 $\mu\text{V}/^\circ\text{C}$  Offset drift
- 10ppm/ $^\circ\text{C}$  Gain drift (Max)
- Pin compatible to INA213, INA199

## DIO2488x

- Vcm:26V(Max), Vos: $\pm 130\mu\text{V}(\text{Max})$
- IQ:130 $\mu\text{A}$  (Max), Gains:50/100V/V
- $\pm 1.5\%$  Gain error(Max)
- 0.5 $\mu\text{V}/^\circ\text{C}$  Offset drift
- 10ppm/ $^\circ\text{C}$  Gain drift (Max)
- P2P INA213, INA199, [24.May Sample](#)

## DIO2216

- Vcm:5.5V(Max), Vos:60uV(Max)
- IQ:13uA, Gain Error:  $\pm 0.4\%$  (MAX)
- Gains:25/50/100/200V/V
- Package: WLCS-4
- Pin compatible to INA216
- 2024.Jul Sample

## DIO2087x

- VIN:1.4-5.5V, 1-4CH
- DIO2087x: Push-pull Output
- DIO2087xB: Open-Drain Output
- Propagation Delay: 1.3 $\mu\text{s}$
- Ultra Low Power : 1.35 $\mu\text{A}$

## DIO2089x

- VIN:1.4-5.5V, 1-2CH
- Push-pull Output,
- Propagation Delay: 8 $\mu\text{s}$
- Ultra Low Power: 0.3 $\mu\text{A}$

## DIO331 DIO393

- VIN:1.8-5.5V, 1-2CH
- Open-drain Output
- Propagation Delay: 84ns
- Ultra Low Power: 37 $\mu\text{A}$
- P2P LMV331/LMV393

## DIO20903

- VIN:3-36V
- Two-Channel Comparator
- Vos=4.5mV
- Delay time=2us
- Pin compatible to LM2903B

70V共模电压0.2mV  
超低失调电压

Current Sense

Comparator

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# USB Switch & MIPI Switch



Featured Product

MP  
DV



11GHz超高带宽

6GHz超高带宽  
超小封装

<b>MIPI Switch</b>	<p><b>DIO1642</b> 1lane clk+2lane data</p> <ul style="list-style-type: none"> <li>VIN: 1.65-5.0V; Iq: 17uA</li> <li>Bandwidth: 4GHz</li> <li>Package: QFN3.4*2.5-24</li> <li>Pin compatible to FSA642</li> </ul>	<p><b>DIO1628</b> ★</p> <p>1lane clk+2lane data</p> <ul style="list-style-type: none"> <li>VIN: 1.65-5.0V; Iq: 17uA</li> <li>Bandwidth: <b>6GHz</b></li> <li>Package: <b>LGA1.7*2.4-24</b></li> <li>P2P PI3WVR628</li> </ul>	<p><b>DIO1646</b></p> <p>1lane clk+4lane data</p> <ul style="list-style-type: none"> <li>VIN: 1.65-5.0V; Iq: 45uA</li> <li>Bandwidth: 2.5GHz</li> <li>WLCSP-36(0.4mm pitch)</li> <li>Pin compatible to FSA646</li> </ul>	<p><b>DIO1647/8</b></p> <p>1lane clk+4lane data</p> <ul style="list-style-type: none"> <li>VIN: 1.65-5.0V; Iq: 25/25uA</li> <li>BW: 3.5GHz, 1.2V for 1648</li> <li>WLCSP-36(0.4mm pitch)</li> <li>Pin compatible to FSA646</li> </ul>	<p><b>DIO1634</b> ★</p> <p>1lane clk+4lane data</p> <ul style="list-style-type: none"> <li>VIN: 1.65-5.0V; Iq: 45uA</li> <li>Bandwidth: <b>6GHz</b></li> <li><b>2.06*2.06mm, smallest</b></li> <li><b>WLCSP-36(0.35mm pitch)</b></li> </ul>
<b>USB3.1/PCIE3.0 Switch</b>	<p><b>DIO3340/B</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 1.5-5.0V; Iq: 21uA</li> <li>Bandwidth: <b>11GHz</b></li> <li>Configuration: 4 Pole, 2 Throw</li> <li>QFN2*2-18/QFN 2*3-18</li> <li>Pin compatible to FUSB340</li> </ul>	<p><b>DIO3350</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 1.5-5.0V; Iq: 21uA</li> <li>Bandwidth: <b>11GHz</b></li> <li>Configuration: 4 Pole, 2 Throw</li> <li>QFN2.6*1.8-16/QFN2*2-18/ QFN2.5*4.5-20,HD3SS3212</li> </ul>	<p><b>DI3PCIE350</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 1.5-5.0V; Iq: 21uA</li> <li>Bandwidth: <b>11GHz</b></li> <li>Package: QFN2*2-18/QFN2.5*4.5-20</li> <li>P2P PI3PCIE3212</li> </ul>	<p><b>DIO3343</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 1.5-5.0V; Iq: 21uA</li> <li>Bandwidth: <b>11GHz</b></li> <li>Configuration: 4 Pole, 2 Throw</li> <li>Package: <b>QFN2.4*1.6-16</b></li> <li>Pin compatible to CBTU02043</li> </ul>	<p><b>DIO3352</b></p> <ul style="list-style-type: none"> <li>USB3.1+USB2.0 Switch</li> <li>VIN: 2.3-5.5V</li> <li>Bandwidth: <b>11/1.8GHz</b></li> <li>QFN3*6-32</li> <li>P2P PI3USB3102, Sample</li> </ul>
<b>Type-C USB2.0/Audio Switch</b>	<p><b>DIO4480</b></p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 4uA</li> <li>BW: 1/0.9GHz(USB/Audio)</li> <li>Audio : THD + N = <b>-110dB</b></li> <li>Package: WLCSP-25</li> <li>Pin compatible to FSA4480</li> </ul>	<p><b>DIO4481/B</b></p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 3uA</li> <li>BW: 0.97/0.83GHz(USB/Audio)</li> <li>Audio : THD + N = <b>-110dB</b></li> <li><b>Comparator humidity detection</b></li> <li>WLCSP-25, P2P FSA4480</li> </ul>	<p><b>DIO4482/B</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 2uA</li> <li>BW: 0.97/0.83GHz(USB/Audio)</li> <li>Audio : THD + N = <b>-110dB</b></li> <li><b>ADC humidity detection</b></li> <li>WLCSP-25,P2P FSA4480</li> </ul>	<p><b>DIO4483/B</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 4uA</li> <li>BW:0.95/0.8/0.8GHz(USB/Audio/UART)</li> <li>Audio : THD + N = <b>-110dB</b></li> <li>WLCSP-25,P2P FSA4486</li> </ul>	<p><b>DIO4485</b></p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 4uA</li> <li>0.95/0.8/0.8GHz(USB/Audio/UART)</li> <li>Audio : THD + N = <b>-110dB</b></li> <li><b>Humidity detection</b></li> <li>WLCSP-25, SAMPLE</li> </ul>
<b>USB2.0/Audio Switch</b>	<p><b>DIO3202A/B</b></p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 95uA</li> <li>Bandwidth: 720MHz</li> <li>Configuration: 2 Pole, 2 Throw</li> <li>Audio : THD + N = 0.05%</li> <li>DQFN10, QFN-10, MSOP-10</li> </ul>	<p><b>DIO3203</b></p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 72uA</li> <li>Bandwidth: 720MHz</li> <li>Configuration: 2 Pole, 3 Throw</li> <li>Audio : THD + N = 0.05</li> <li>QFN3*3-16,DQFN1.8*1.8-12</li> </ul>	<p><b>DIO32020</b> ★</p> <ul style="list-style-type: none"> <li>VIN: 2.7-5.5V; Iq: 18uA</li> <li>BW: 1.1GHz, <b>-1.4V Negative Swing</b></li> <li>Configuration: 2 Pole, 2 Throw</li> <li>Audio : THD + N = <b>-110dB</b></li> <li>DQFN10, QFN-10, MSOP-10</li> </ul>		

USB/Audio/UART  
三通道模拟开关  
-110dB高THD  
轮询湿度检测



# USB Switch

★  
Featured Product

MP  
DV



USB2.0  
DP3T/DP4T  
Switch

**DIO3303**

- VIN: 2.7-4.4V; Iq: 1uA
- Bandwidth: 720MHz
- Configuration: 2 Pole, 3 Throw
- Package: DQFN1.8\*1.8-12

**DIO3476**

- VIN: 2.7-4.4V; Iq: 1uA
- Bandwidth: 480MHz
- Configuration: 2 Pole, 4 Throw
- Package: QFN2\*3-18

2GHz超高带宽  
超小封装DFN1.6\*1.2-8

USB2.0  
DPDT  
Switch

**DIO32220/1**

- VIN: 2.7-5.5V; Iq: 1uA
- Bandwidth: **2GHz**
- Configuration: 2 Pole, 2 Throw
- QFN-10, MSOP-10, DQFN-10
- Pin compatible to FSUSB30

**DIO32320/B/1**

- VIN: 2.7-5.5V; Iq: 1uA
- Bandwidth: **2GHz**
- Configuration: 2 Pole, 2 Throw
- QFN-10, MSOP-10, DQFN-10
- Pin compatible to FSUSB42

**DIO32730**

- VIN: 2.7-5.5V; Iq: 1uA
- Bandwidth: **2GHz**
- Configuration: 2 Pole, 2 Throw
- Package: DFN1.8\*1.4-10
- Pin compatible to DG2730

**DIO32321EN8** ★

- VIN: 2.7-5.5V; Iq: 1uA
- 1uA supply current at EN high
- Bandwidth: **2GHz**
- Configuration: 2 Pole, 2 Throw
- **DFN1.6\*1.2-8, smallest**

**DIO3001** ★

- VIN: 2.3-5.5V; Iq: 1uA
- Bandwidth: >1.8GHz
- Configuration: 2 Pole, 2 Throw
- Package: QFN2\*1.5-10
- P2P TS3USB3000/TS3USB221

**DIO3212**

- VIN: 2.3-5.5V; Iq: 40uA
- Bandwidth: 650MHz
- Configuration: 2 Pole, 2 Throw
- QFN-10, MSOP-10, DQFN-10
- P2P TS3USB221

**DIO3480AD**

- VIN: 2.3-5.5V; Iq: 85uA
- Bandwidth: 1.2GHz
- 20mΩ, 28V Load switch with ADJ OVP detection
- Configuration: 2 Pole, 2 Throw
- Package: WLCSP-24

**DIO3402**

- VIN: 2.3-5.5V; Iq: 35uA
- Bandwidth: 1.5GHz
- **OVP on COM pins up to 20V DC**
- Configuration: 2 Pole, 2 Throw
- Package: WLCSP-12
- Pin compatible to MAX14743

**DIO5000/8** ★

- VIN: 2.3-5.5V; Iq: 35/37uA
- Bandwidth: 1.5GHz
- **OVP on COM pins up to 20V DC**
- Configuration: 2 Pole, 2 Throw
- QFN2\*1.5-10/DQFN1.8\*1.4-10
- Pin compatible to PI3USB4000

**DIO3000** ★

- VIN: 2.3-5.5V; Iq: 25uA
- BW: **5.8/5.5GHz(USB/MHL)**
- Configuration: 2 Pole, 2 Throw
- Package: QFN2\*1.5-10
- P2P TS3USB3000

5.8GHz超高带宽

USB2.0  
DPST  
Switch

**DIO1001**

- VIN: 2.7-5.5V; Iq: 1uA
- Bandwidth: 2GHz
- Configuration: 2 Pole, 1 Throw
- Package: DQFN1.5\*1.5-8

**DIO32210**

- VIN: 2.7-5.5V; Iq: 1uA
- Bandwidth: 2GHz
- Configuration: 2 Pole, 1 Throw
- Package: DQFN1.5\*1.5-8

1.5GHz超高带宽  
20V直流耐压  
并DP/DM有OVP保护



# Analog Switch

★  
Featured Product

MP  
DV



SIM/Data  
Switch

**DIO1567**

- VIN: 1.6-4.5V; Iq: 25uA
- Bandwidth: 200MHz
- QFN1.8\*2.6-16/QFN3\*3-16
- Pin compatible to FSA2567

**DIO1568** ★

SIM卡模拟开关  
支持1.8V电平

- VIN: 1.6-4.5V; Iq: 25uA
- Bandwidth: 200MHz
- Support 1.2V Level**
- QFN1.8\*2.6-16/QFN3\*3-16; FSA2567

Audio/Data  
2-4CH  
Switch

**DIO1553/B** ★

- VCC(ON): 0-0.2V
- VCC(OFF): 1.6-3.0V
- BW: 340MHz, **THD + N = -107dB**
- Configuration: 2 Pole, 1 Throw
- Package: WLCSP-9
- Pin compatible to FSA553

**DIO32276** ★

- VIN: 1.65-5.5V;
- BW: 550MHz, **THD + N = -110dB**
- VCC=0V, High impedance IN/OUT
- Configuration: 2 Pole, 2 Throw
- Package: DQFN1.8\*1.8-12
- Pin compatible to FSA2276

**DIO1500**

- VCC(ON): 0-0.2V
- VCC(OFF): 1.6-3.0V
- BW: 300MHz, THD + N = 0.001%
- Configuration: 4 Pole, 1 Throw
- Package: WLCSP-12
- Pin compatible to FSA550

**DIO1501**

- VCC(ON): 0-0.2V
- VCC(OFF): 1.6-3.0V
- BW: 300MHz, THD + N = 0.001%
- Configuration: 4 Pole, 1 Throw
- Package: WLCSP-12

**DZ106**

- VCCEN: 1.1-5.5V; Switch I/O: **-0.5~16 V**
- Bandwidth: 340MHz
- THD + N = **-105dB**
- Configuration: 2 Pole, 1 Throw
- Package: **WLCSP-6**

**DIO1717**

- VIN: 2.5-5.5V
- Bandwidth: 300MHz
- 2V Negative signal pass
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10/MSOP-10

**DIO17170**

- VIN: 1.8-5.5V
- Bandwidth: 383MHz
- THD + N = 0.17%
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10

**DIO1269**

- VIN: 2.7-5.25V
- Bandwidth: 180MHz
- THD + N = 0.006%
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10
- Pin compatible to FSA2269

**DIO1520** ★

- VIN: 1.65-5.5V;
- Bandwidth: 300MHz
- THD + N = 0.024%
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10

Audio/Data  
1-CH  
Switch

**DIO1510**

- VIN: 1.8-5.5V
- Bandwidth: 140MHz
- THD + N = 0.01%
- Configuration: 1 Pole, 2 Throw
- Package: SC70-6

**DIO1520B**

- VIN: 1.65-5.5V;
- Bandwidth: 300MHz
- THD + N = 0.024%
- Configuration: 1 Pole, 2 Throw
- Package: DQFN-10

**DIO1505**

- VIN: 2.55-5.5V
- Bandwidth: 367MHz, -3 to 5V Isolation Volt
- Configuration: 1 Pole, 1 Throw
- Package: **CSP-4**
- Pin compatible to FSA515

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# Analog Switch

★  
Featured Product

MP  
DV



## I2C Switch

### DIO74544 ★

- VIN: 1.65-5.5V, 4ch, Interrupt
- Active-Low Interrupt Output
- Supports hot insertion
- Allows Voltage-Level Translation
- 0- to 400-kHz Clock frequency
- TSSOP-24/VQFN-24, TCA9544A

### DIO74546 ★

- VIN: 1.65-5.5V, 4ch, Reset
- Active-low reset input
- Supports hot insertion
- Allows Voltage-Level Translation
- 0- to 400-kHz Clock frequency
- TSSOP-24/VQFN-24, TCA9546A

### DIO74548 ★

- VIN: 1.65-5.5V, 8ch, Reset
- Active-low reset input
- Supports hot insertion
- Allows Voltage-Level Translation
- 0- to 400-kHz Clock frequency
- TSSOP-24/VQFN-24, TCA9548A

支持热插拔  
并能有效解决地址冲突的问题

## Data 4/8 CH Switch

### DIO1466

- VIN: 1.65-5.25V
- Bandwidth: 170MHz
- Configuration: 4 Pole, 2 Throw
- DQFN-16/TQFN3\*3-16/QFN2.5\*2.5-16, FSA2466

### DIO1713

- VIN: 1.8-5.5V
- Bandwidth: 200MHz
- Configuration: 4 Pole, 1 Throw
- Package: SOIC-16/TSSOP-16
- Pin compatible to ADG713

### DIO1467 ★

- VIN: 1.65-5.25V
- Bandwidth: 200MHz
- Configuration: 4 Pole, 2 Throw
- DQFN-16/TQFN3\*3-16/QFN2.5\*2.5-16, FSA2466

### DIO3714

- VIN: 1.8-5.5V
- Bandwidth: 200MHz
- Configuration: 4 Pole, 1 Throw
- Package: SOP-14 and TSSOP-14
- Pin compatible to RS2254

### DIO31308

- VIN: 1.62-5.5V
- Bandwidth: 500MHz
- Package: TSSOP-16
- P2P: TMUX1308
- **SAMPLE: 2024.Q2**

## Data 2-CH Switch

### DIO1005

- VIN: 1.8-4.3V
- Bandwidth: 75MHz
- Configuration: 2 Pole, 2 Throw
- Package: DFN3\*3-10/MSOP-10
- Pin compatible to SGM3005

### DIO1268

- VIN: 1.6-4.2V
- Bandwidth: 75MHz
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10/QFN-10
- Pin compatible to FSA2268

### DIO1523

- VIN: 1.8-4.2V
- Bandwidth: 75MHz
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10

### DIO3712/3

- VIN: 1.8-5.5V
- Bandwidth: 300MHz
- Configuration: 2 Pole, 2 Throw
- Package: DQFN-10/MSOP-10

### DIO23157

- VIN: 1.8-5.5V
- Bandwidth: 300MHz
- Configuration: 2 Pole, 2 Throw
- Package: MSOP-10
- Pin compatible to TS5A23157

## Data 1-CH Switch

### DIO3166

- VIN: 1.65-5.5V
- Bandwidth: 100MHz
- Configuration: 1 Pole, 1 Throw
- Package: SC70-5/SOT23-5
- Pin compatible to TS5A3166

### DIO1166

- VIN: 1.65-5.5V
- Bandwidth: 350MHz
- Configuration: 1 Pole, 1 Throw
- Package: SC70-5
- Pin compatible to TS5A3166

### DIO3157x

- VIN: 1.65-5.5V; Iq: 0.5uA
- Bandwidth: 350MHz
- Configuration: 1 Pole, 2 Throw
- Package: SC70-6/SOT23-6

### DIO1159C ★

- VIN: 1.65-5.5V
- Bandwidth: 100MHz
- Configuration: 1 Pole, 1 Throw
- Package: DFN1\*1-6
- **P2P NC7SZ66L6X**

### DIO1159B/E ★

- VIN: 1.65-5.5V
- Bandwidth: 100MHz
- Configuration: 1 Pole, 2 Throw
- **SOT23-6/SC70-6/DFN-6**



# Level Shifter

★  
Featured Product

MP  
DV



SIM  
Level shifter

**DIO74557/S** ★

- VSIM: 1.65-3.3V, VHost: 1.08-1.95V
- Clock speeds up to 10 MHz clock
- Integrated EMI filters and ESD Protection, **Qualcomm REF Design**
- WLCSP-9 (0.3 mm pitch) and QFN1.8\*1.4-10, P2P NVT4557

**DIO74559**

- VSIM: 1.62-3.3V, VHost: 1.08-1.98V
- Clock speeds up to 10 MHz clock
- Integrated EMI filters and ESD Protection
- Package: WLCSP-9 (0.35 mm pitch)
- P2P NVT4559, **Sample**

8-CH  
Level shifter

**DIO7B108**

- VCCA:1.08-3.6V, VCCB:1.65-5.5V
- Data Rates: **110Mbps** (Push Pull)
- No Direction-Control, 8-CH
- TSSOP-20, TXB0108
- **Sample**

**DIO7S108**

- VCCA:1.08-3.6V, VCCB:1.65-5.5V
- Data Rates: **120Mbps** (Push Pull) 2Mbps (Open Drain)
- No Direction-Control, 8-CH
- TSSOP-20, QFN-20, TXS0108
- 2024 Q2 Sample

4-CH  
Level shifter

**DIO7B104**

- VCCA:1.08-3.6 V, VCCB:1.65-5.5V
- Data Rates: **110Mbps** (Push Pull)
- No Direction-Control, 4-CH
- TSSOP-14, UQFN-12, P2P TXB0104
- Sample

**DIO7S104**

- VCCA:1.08-3.6 V, VCCB:1.65-5.5V
- Data Rates: **120Mbps** (Push Pull) 2Mbps (Open Drain)
- No Direction-Control, 4-CH
- TSSOP-14, VQFN3.5\*3.5-14, UQFN2.0\*1.7-12, TXS0104
- **Sample**

1-CH/2-CH  
Level shifter

**DIO74134** ★

- VCCA/B: 1.08-3.6V
- Packaged in SC70-5, DFN1.45\*1-6 and DFN1\*1-6

**DIO7416** ★

- VCCA/B:1.08-3.6V, Low Ioff: 2.5µA
- Frequency of SCL: 1MHz (Fast mode plus)
- DFN1.35\*0.8-8, DFN1.4\*1.0-8, TSOT23-8, TCA9416

**DIO7B102**

- VCCA:1.08-3.6V, VCCB:1.65-5.5V
- Data Rates: **110Mbps** (Push Pull)
- No Direction-Control, 2-CH
- VSSOP-8, TXB0102

**DIO7S102**

- VCCA:1.08-3.6V, VCCB:1.65-5.5V
- Data Rates: **120Mbps** (Push Pull) 2Mbps (Open Drain)
- No Direction-Control, 2-CH
- VSSOP-8, TXS0102 **Sample**

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# USB Redriver & Temp Sensor



Featured Product

MP

DV



## DIO1411

- One local channel
- Typ inaccuracy of  $\pm 0.25^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 2^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Package: MSOP-8
- Pin compatible to TMP75/LM75
- [Sample](#)

## DIO1412

- One external + One local channel
- Typ inaccuracy of  $\pm 0.25^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 2^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Package: DFN2\*2-8 and MSOP-8
- P2P EMC1412/TMP451/TMP431
- [Sample](#)

## DIO1413

- Two external + One local channel
- Typ inaccuracy of  $\pm 0.25^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 2^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Package: DFN3\*3-10 and MSOP-10
- Pin compatible to EMC1413/TMP432
- [Sample](#)

## DIO1414

- Three external + One local channel
- Typ inaccuracy of  $\pm 0.25^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 2^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Package: DFN3\*3-10 and MSOP-10
- Pin compatible to EMC1414
- [Sample](#)

## DIO1475

- One local channel
- Typ inaccuracy of  $\pm 0.25^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
- Max inaccuracy of  $\pm 2^{\circ}\text{C}$  (-40 ~ 125  $^{\circ}\text{C}$ )
- 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Package: MSOP-8
- Pin compatible to TMP75/LM75
- [2024 Q3 Sample](#)

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## DIO36812



- Support USB 3.2 Gen1 at 5.0 Gbps
- Single 1.8 V power supply
- Package: QFN4\*4-24
- P2P PS8719(DIO36812 is 1.8V)

## DIO37814

- Support USB Type-C with USB 3.2 Gen 2 and DisplayPort 1.4 as alternate mode
- Single 1.8 V power supply
- Package: QFN2.3\*3.7-26
- P2P PS5169, SAMPLE in Q3 2024

## DIO37815

- Support USB Type-C with USB 3.2 Gen 2 and DisplayPort 1.4 as alternate mode, AUX Switch
- Single 1.8 V power supply
- Package: QFN3.1\*4.4-34
- P2P PS5170, SAMPLE in Q3 2024

Temp & Humidity Sensor

USB Redriver



# 0.5MHz, 24μA, High Performance CMOS Amplifier– DIO3205x



## Feature

- Rail-to-rail input and output
- Max offset (VOS): DIO32051/32051A/32052/32054 at  $\pm 3$  mV
- Unity gain stable
- Gain bandwidth product: 0.5MHz
- Very low input bias currents: 10pA
- Wide supply range: 2.1V to 5.5V
- Input voltage range: 0V to 5V
- Ultra-low power: 24μA per channel
- Compact package best for portable applications

DIO32051: SOT23-5 and SC70-5

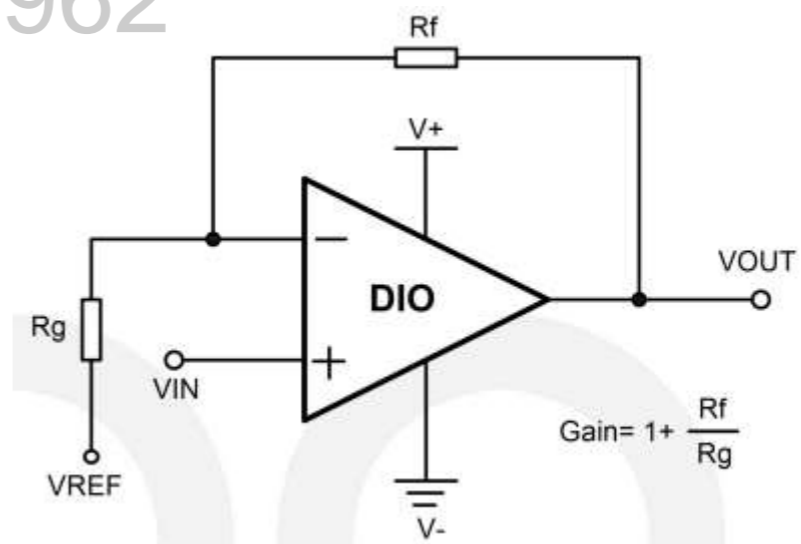
DIO32051A: SOT23-5 and SC70-5

DIO32052: SOIC-8, MSOP-8, and TSOT23-8

DIO32054: SOIC-14 and TSSOP-14

## Application

- ASIC input or output amplifiers
- Sensor interfaces
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs



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# Single, Rail-to-Rail Low Power Amplifier– DIO2051A

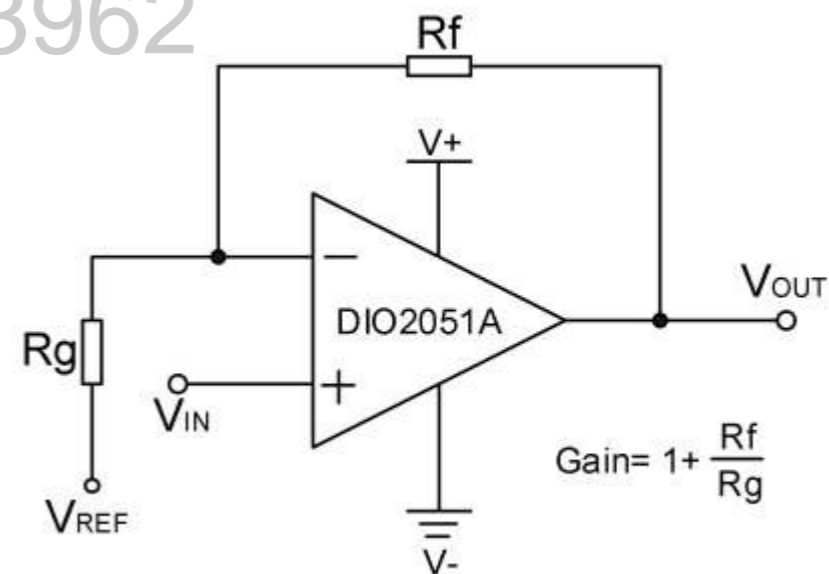


## Feature

- Rail-to-rail input and output
- 0.65mV typical offset (VOS)
- Unity gain stable
- Gain bandwidth product: 550kHz
- Very low input bias currents: 10pA
- Wide supply range: 1.8 V to 5.5 V
- Input voltage range: -0.1 V to +5.6 V with  $V+ = 5.5$  V
- Ultra-low power: 16  $\mu$ A per channel
- Small size packaging best for portable applications: SOT23-5

## Application

- ASIC input or output amplifiers
- Sensor interfaces
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs

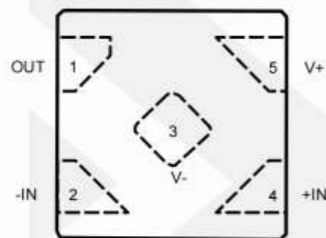


# 0.5MHz, 24 $\mu$ A, High Performance CMOS Amplifier– DIO32051A



## Feature

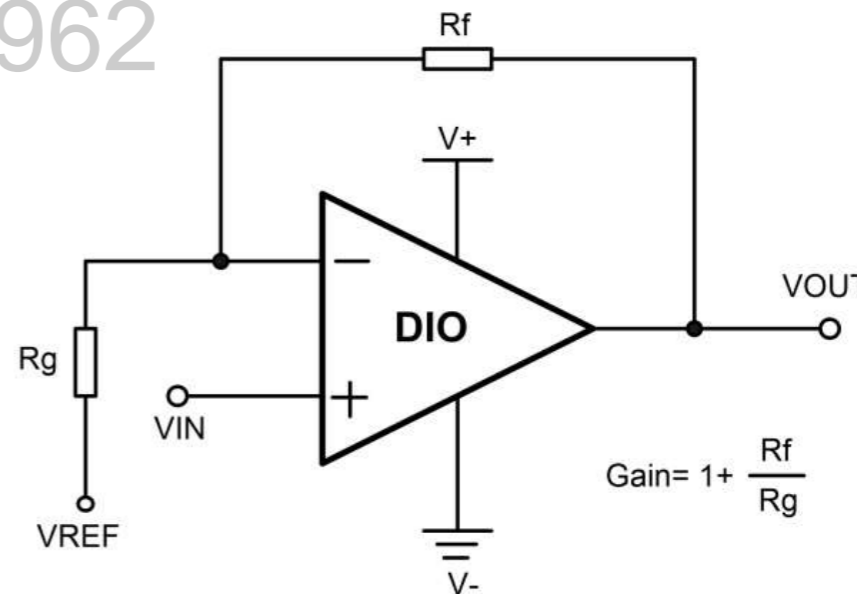
- Max offset (VOS): DIO32051A at  $\pm 3\text{mV}$
- Unity gain stable
- Gain bandwidth product: 0.5MHz
- Wide supply range: 1.8V to 5.5V
- Input voltage range: 0V to 5V
- Ultra low power: 24  $\mu\text{A}$
- Compact package best for portable applications
- Ultra small package: **DFN0.8\*0.8-4**
- **Qualcomm REF Design**



- **DIO32051ACN4在高通参考设计上使用**
- **业界运放最小的封装DFN0.8\*0.8-4**

## Application

- ASIC input or output amplifiers
- Sensor interfaces
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs



# Low-Power, RRIO, 400kHz Operational Amplifier– DIO2900x

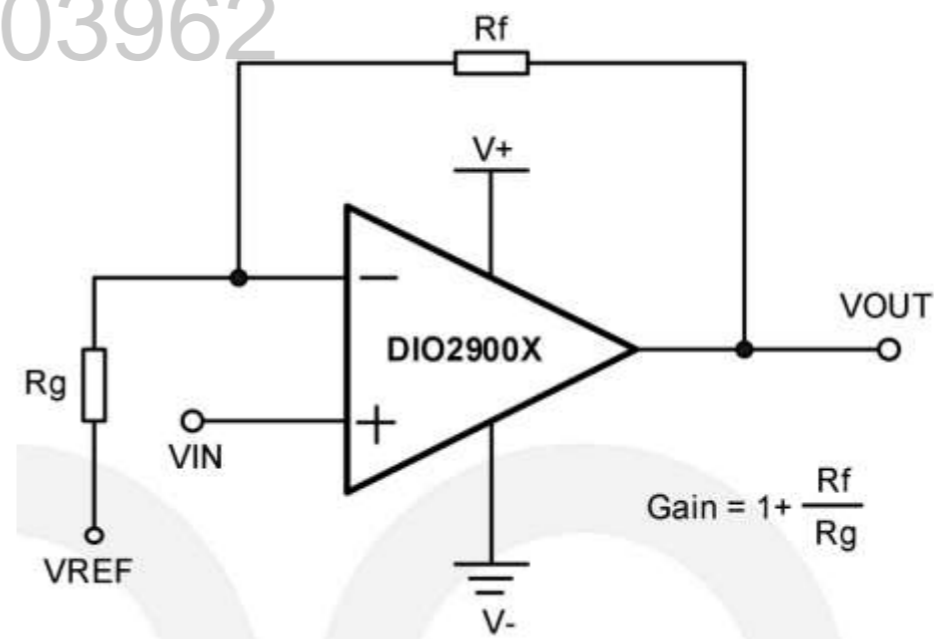


## Feature

- Rail-to-rail input and output
- Max offset (VOS):  $\pm 1.5\text{mV}$
- Unity gain stable
- Gain bandwidth product: 400kHz
- Very low input bias currents: 10pA
- Wide supply range: **1.65V** to 5.5V
- Input voltage range: 0V to 5V
- Ultra-low power: 40 $\mu\text{A}$  per channel
- Compact package best for portable applications:  
DIO29001: DFN0.8\*0.8-4, SOT23-5, and SC70-5  
DIO29002: SOIC-8, MSOP-8, and TSOT23-8  
DIO29004: SOP-14 and TSSOP-14

## Application

- ASIC input or output amplifiers
- Sensor interfaces
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs



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# 1.4MHz, 60μA, Rail-to-Rail I/O CMOS Amplifier– DIO358x



## Feature

- Rail-to-rail input and output
- Max offset (VOS):  $\pm 3\text{mV}$
- Unity gain stable
- Gain bandwidth product: 1.4MHz
- Very low input bias currents: 5pA
- Wide supply range: 2V to 5.5V
- Input voltage range: -0.1V to +5.6V with  $V+ = 5.5\text{V}$
- Ultra low power: 60μA per channel
- Compact package best for portable applications

DIO3581/1A: SOT23-5 and SC70-5

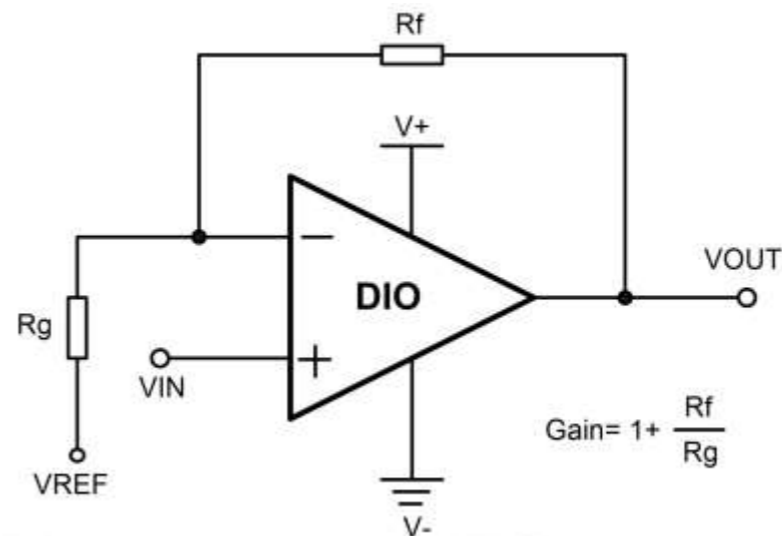
DIO3582: SOIC-8, MSOP-8 and DFN2\*2-8

DIO3584: SOIC-14 and TSSOP-14

DIO3582C: DFN2\*2\*0.55-8

## Application

- ASIC input or output amplifiers
- Sensor interface
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs
- Battery-powered equipment



# 1.4MHz, 60 $\mu$ A, Rail-to-Rail I/O CMOS Amplifier– DIO32358

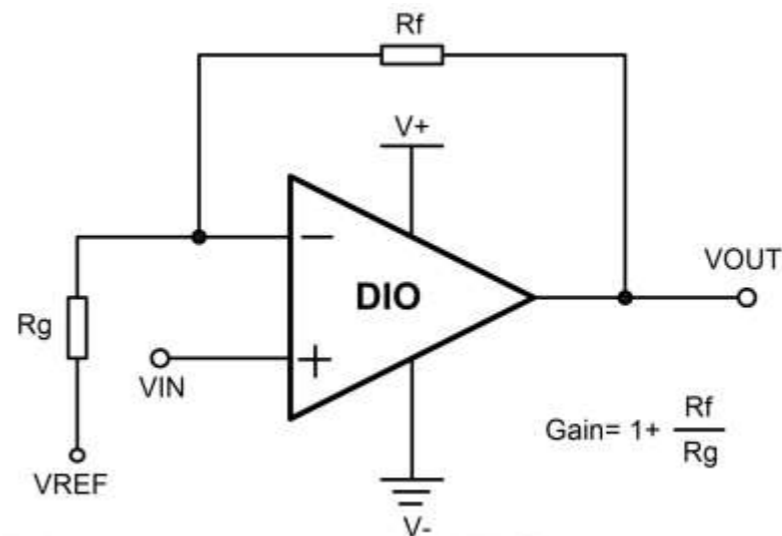


## Feature

- Rail-to-rail input and output
- Max offset (VOS):
- Unity gain stable
- Gain bandwidth product: 1.4MHz
- Very low input bias currents: 5pA
- Wide supply range: 2.0V to 5.5V
- Input Voltage Range: 0V to +5V
- Ultra low power: 60 $\mu$ A per channel
- Small size packaging best for portable applications, available in SOIC-8 and MSOP-8

## Application

- ASIC input or output amplifiers
- Sensor interface
- Piezo electric transducer amplifiers
- Medical instrumentation
- Audio output
- Portable systems
- Smoke detectors
- Notebook PCs
- Battery-powered equipment



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# Dual Channel 1MHz , Rail-to-Rail I/O CMOS Amplifier– DIO8358

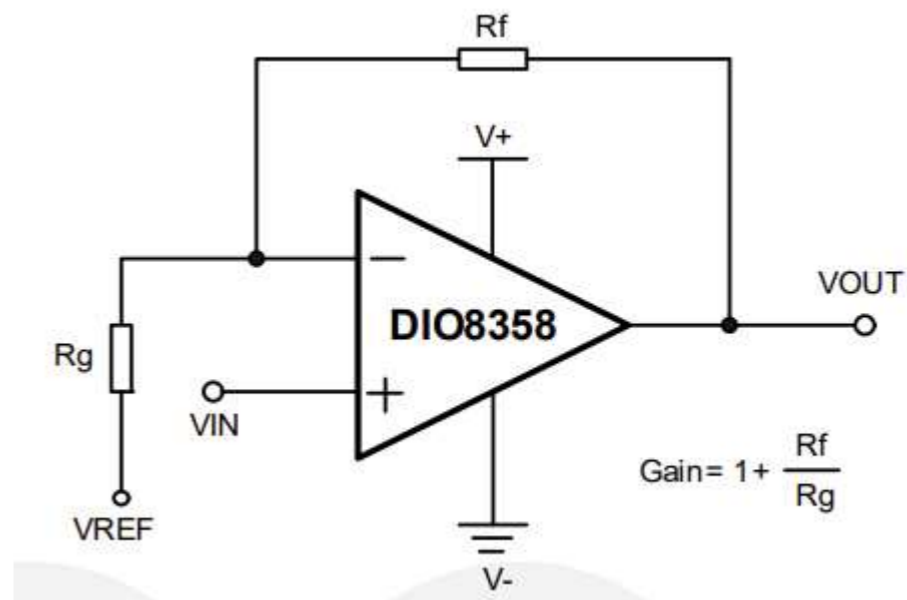


## Feature

- Supply Voltage Range: 2.5V to 5.5V
- Rail-to-Rail Input and Output
- Channel A  $\pm 0.8\text{mV}$  Typical offset, Channel B 4.9mV Typical offset
- Unity Gain Stable
- Gain Bandwidth Product: 1MHz
- Very low input bias currents : 5pA
- Wide supply range: 2.1V to 5.5V
- Input Voltage Range: -0.1V to +5.6V with  $V+ = 5.5\text{V}$
- Ultra low power: 50 $\mu\text{A}$  per channel
- Small size packaging best for portable applications, available in SOIC-8 and MSOP-8

## Application

- ASIC Input or Output Amplifier
- Sensor Interface
- Piezo Electric Transducer Amplifier
- Medical Instrumentation
- Audio Output
- Portable Systems
- Smoke Detectors
- Notebook PC
- Battery-Powered equipment



# 350 $\mu$ A, 6MHz, RRIO CMOS Operational Amplifiers– DIO203x



## Feature

- Supply Voltage Range: 2.5V to 5.5V
- Low Supply Current: 350 $\mu$ A Typically
- Rail-to-Rail Input and Output
- 6MHz High Gain-Bandwidth Product
- High Slew Rate: 3.6V/ $\mu$ s
- Settling Time to 0.1% with 2V Step: 2.1 $\mu$ s
- Overload Recovery Time: 0.9 $\mu$ s
- Packages:

DIO2031 available in: SOT23-5/SOIC-8

DIO2032 available in: SOIC-8/MSOP-8/TSSOP-8

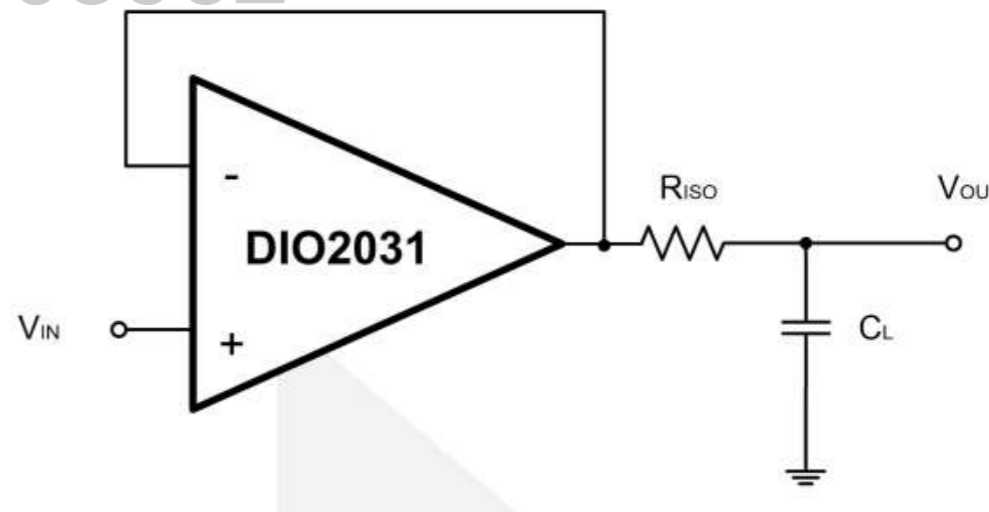
DIO2033 available in: SOT23-6/SOIC-8

DIO2034 available in: TSSOP-14/SOIC-14

DIO2036 available in: QFN4\*4-20

## Application

- Audio Output
- Sensor Interface
- Active Filters
- A/D Converters
- Cellular and Cordless Phones
- Laptops and PDAs
- Photodiode Amplification
- Battery-Powered Instrumentation



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# 350 $\mu$ A, 6MHz, RRIO CMOS Operational Amplifiers– DIO2032x



## Feature

- Supply Voltage Range: 2.5V to 5.5V
- Low Supply Current: 350 $\mu$ A Typically
- Rail-to-Rail Input and Output
- 6MHz High Gain-Bandwidth Product
- High Slew Rate: 3.6V/ $\mu$ s
- Settling Time to 0.1% with 2V Step: 2.1 $\mu$ s
- Overload Recovery Time: 0.9 $\mu$ s
- Packages:

DIO20321 Available in: SOT23-5/SOIC-8

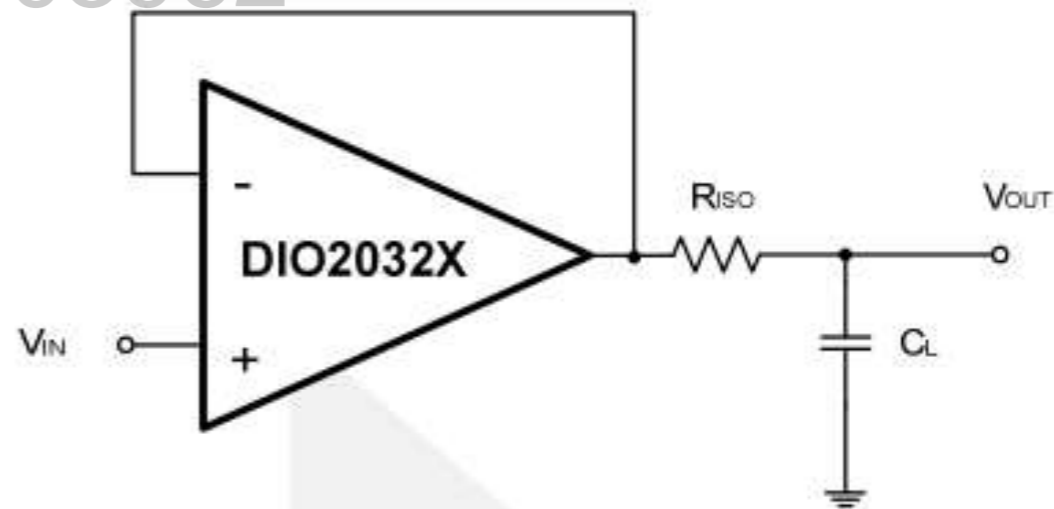
DIO20322 Available in: SOIC-8/MSOP-8/TSSOP-8

DIO20324 Available in: TSSOP-14/SOIC-14

DIO2036 Available in: QFN4\*4-20

## Application

- Audio Output
- Sensor Interface
- Active Filters
- A/D Converters
- Cellular and Cordless Phones
- Laptops and PDAs
- Photodiode Amplification
- Battery-Powered Instrumentation



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# 190 $\mu$ A, 3MHz RRIO CMOS Amplifier– DIO2022x

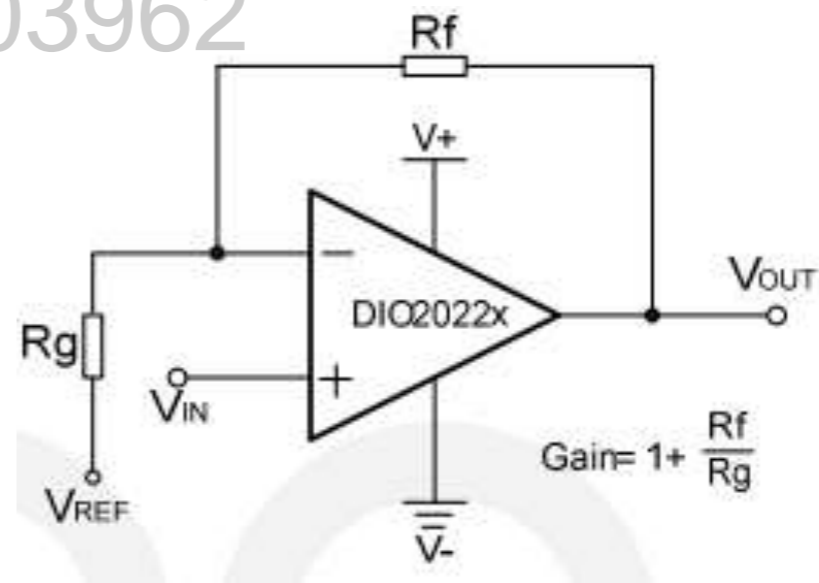


## Feature

- Rail-to-Rail Input and Output
- $\pm 1\text{mV}$  Typical offset (VOS)
- VOSMAX Specificity:  $\pm 5\text{mV}$
- Low Distortion
- Gain Bandwidth Product: 3MHz
- Wide supply range: 2.5V to 5.5V
- 190 $\mu\text{A}$ /Amplifier typical supply current
- Slew rate: 1.7V/ $\mu\text{s}$
- Small size packaging best for portable applications.
- DIO20221: Available in SC70-5, SOT23-5
- DIO20222: Available in MSOP-8, SOIC-8
- DIO20224: Available in SOIC-14 and TSSOP-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing



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# Dual channel, RRIO 10MHz Amplifier– DIO2172



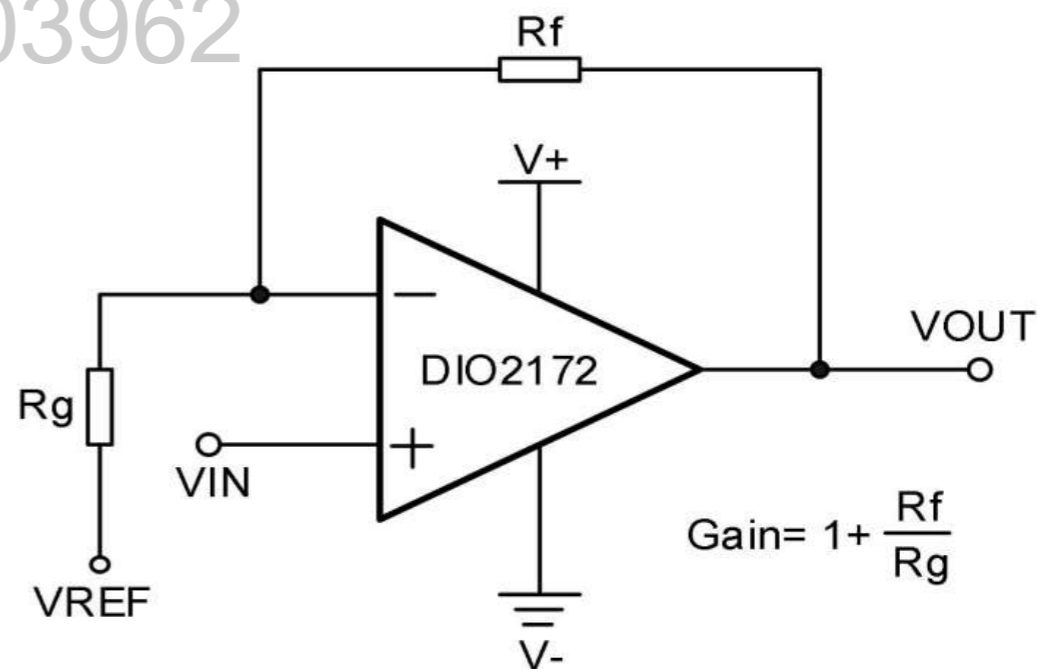
## Feature

- Wide input voltage range: 4.5 to 60V
- Rail-to-Rail Input and Output
- 0.8mV Typical offset (VOS)
- Low Distortion
- Gain Bandwidth Product: 10MHz
- Wide supply range: 3.0V to 5.5V
- 3mA/Amplifier typical supply current
- Slew rate: 7.0V/ $\mu$ s
- DIO2172 available in TSOT23-8

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing

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# Single/Dual/Quad channel, RRIO 10MHz Amplifier– DIO20721/1D/2/4

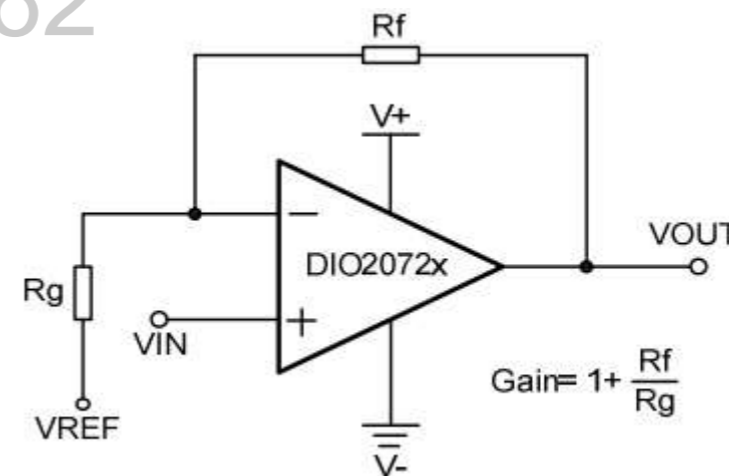


## Feature

- Rail-to-Rail Input and Output
- 0.5mV Typical offset (VOS)
- Low Distortion
- Gain Bandwidth Product: 10MHz
- Wide supply range: 2.5V to 5.5V
- 620μA/Amplifier typical supply current
- Slew rate: 6.5V/μs
- DIO20721 available in SC70-5, SOT23-5
- DIO20721D available in SOT23-6
- DIO20722 available in SOIC-8, MSOP-8, DFN2\*2-8, TSSOP-8 and TSOT23-8
- DIO20724 available in SOIC-14, TSSOP-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing



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# 380nA, RRIO Low Power Amplifier– DIO20182



## Feature

- Wide supply range: 1.4 V to 5.5 V
- Ultra-Low input bias current suitable for ultra-low power signal amplification:
  - 1 pA at 25°C
  - 5 pA (max.) at 50°C
- Low quiescent current: 380nA /per channel
- Unity-gain bandwidth: 5 kHz
- Low offset voltage:
  - $\pm 3.5$  mV (max.) across temperature from -40°C to 125°C
  - Low input offset voltage drift:  $\pm 5$   $\mu$ V/°C
- Output slew rate: 3 V/ms
- Rail-to-rail input and output

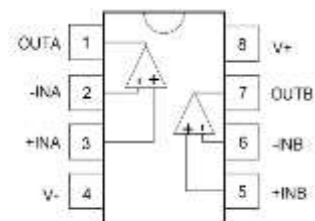


Figure 1. SOIC-8 / MSOP-8 (Top view)

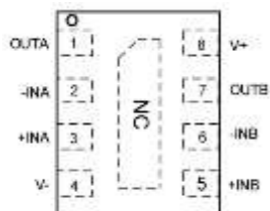


Figure 2. DFN1.6\*1.2-8 (Top view)

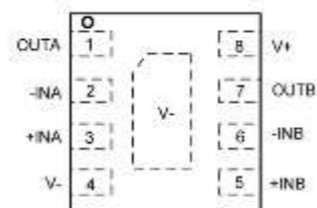
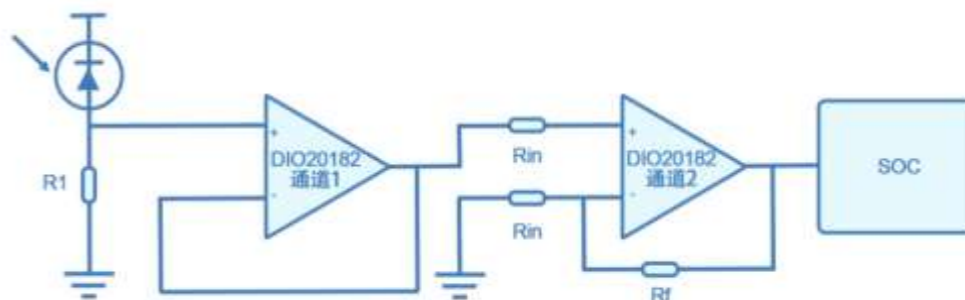


Figure 3. DFN2\*2-8 (Top view)



- 偏置电流仅有1pA
- 每通道的静态电流仅380nA
- 超小封装DFN1.6\*1.2-8

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# 380nA, RRIO Low Power Amplifier– DIO2038x

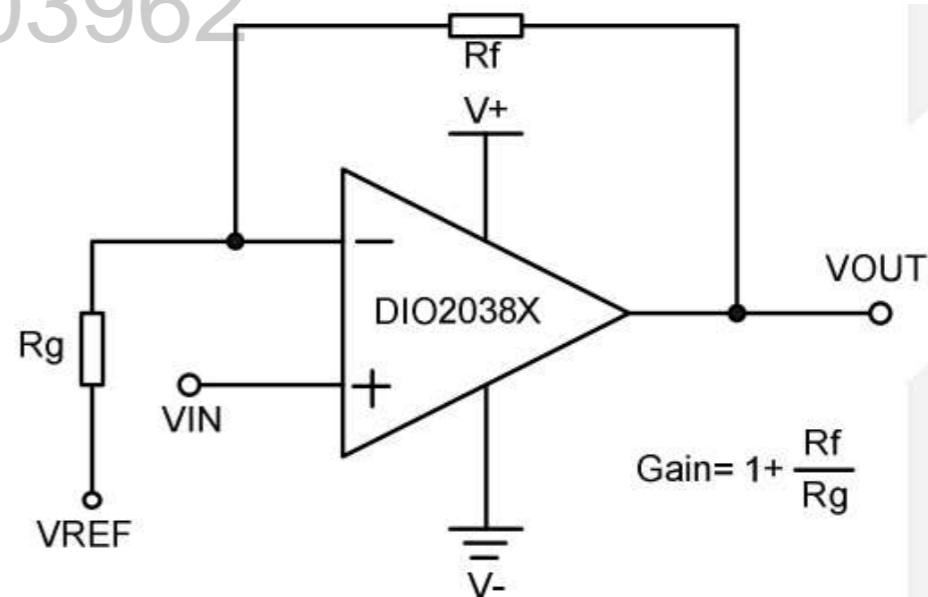


## Feature

- Ultra low power: **380nA per channel**
- Unity Gain Stable
- Gain Bandwidth Product: 5kHz
- Wide supply range: 1.4V to 5.5V
- Available packages:
  - DIO20381: SOT23-5/SOIC-8/MSOP-8
  - DIO20381D: SOT23-6/SOIC-8/MSOP-8
  - DIO20382: SOIC-8/MSOP-8
  - DIO20384: TSSOP-14/SOIC-14
- Temperature Range:
  - Industrial: -40 to 85°C
  - Extended: -40 to 125°C

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing



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# 600nA, RRIO Low Power Amplifier– DIO2088x

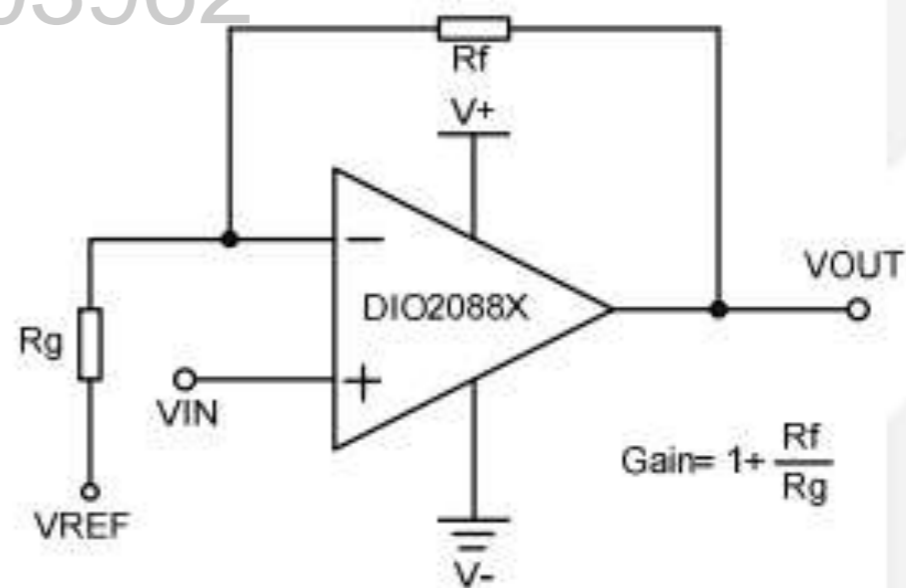


## Feature

- Ultra low power: 600nA per channel
- Unity Gain Stable
- Gain Bandwidth Product: 14kHz
- Wide supply range: 1.4V to 5.5V
- Vos:  $\pm 3.5\text{mV}(\text{Max})$ ,  $\pm 0.5\text{mV}(\text{Max})$  for DIO20882A
- Available packages:
  - DIO20881: SOT23-5/SOIC-8/MSOP-8
  - DIO20881D: SOT23-6/SOIC-8/MSOP-8/DFN1.2\*1.2-6
  - DIO20882: SOIC-8/MSOP-8
  - DIO20882A: SOIC-8/MSOP-8
  - DIO20884: TSSOP-14/SOIC-14
- Temperature Range:
  - Industrial: -40 to 85°C
  - Extended: -40 to 125°C

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing



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# 4μA, RRIO Low Power Amplifier– DIO2092x



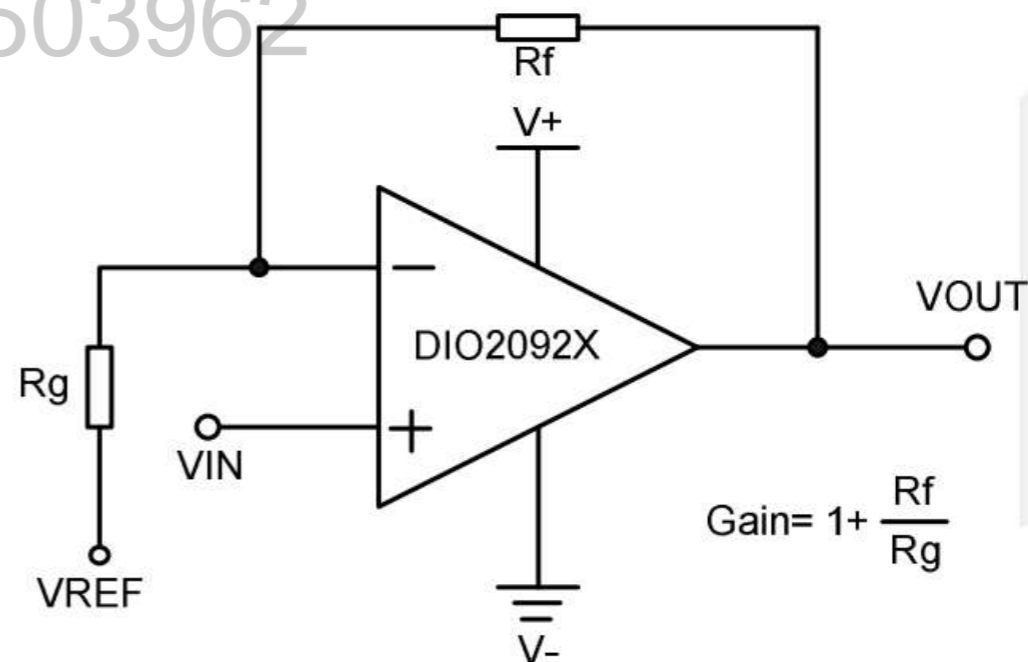
## Feature

- Ultra low power: 4μA per channel
- Unity Gain Stable
- Gain Bandwidth Product: 150kHz
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5, SOT23-6, DFN2\*2-6, SOIC-8, MSOP-8, SOP-14 and TSSOP-14 packages
- Temperature Range:
  - Industrial: -40 to 85°C
  - Extended: -40 to 125°C

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing

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# 4μA, RRIO Low Power Amplifier– DIO20491



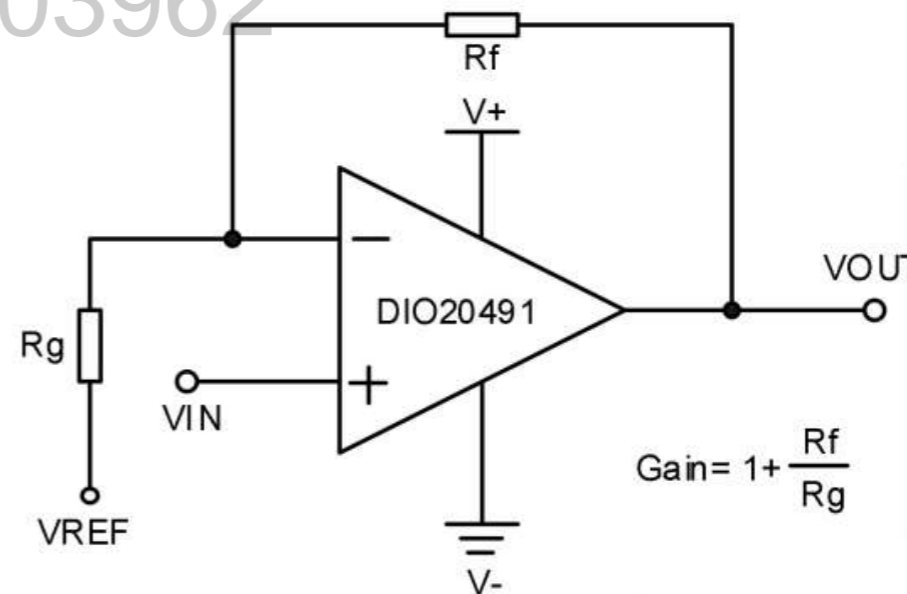
## Feature

- Ultra low power: 4μA
- Unity Gain Stable
- Gain Bandwidth Product: 150kHz
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5, DFN2\*2-6 packages
- Temperature Range:
  - Industrial: -40 to 85°C
  - Extended: -40 to 125°C

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing

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# Ultra Low Vos, Low Power Amplifier– DIO234x

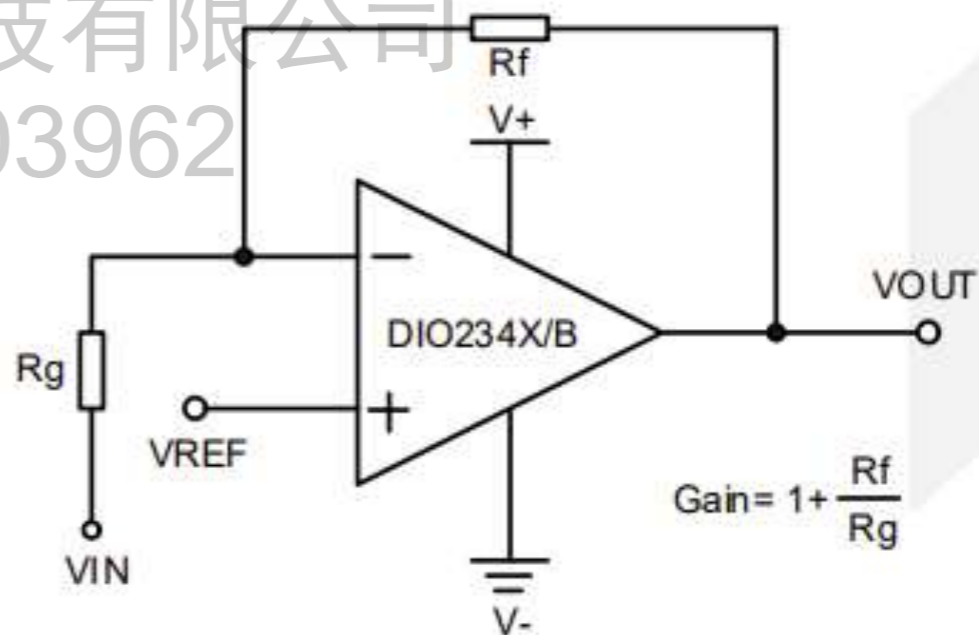


## Feature

- Ultra low VOS:  
DIO233X:35 $\mu$ V(Max)  
DIO233XB:70 $\mu$ V(Max)
- Low Power: 1.1 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 30kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5, SOT23-6, SOIC-8, MSOP-8, SOIC-14 and TSSOP-14 packages
- Temperature Range:-40 to 125 $^{\circ}$ C

## Application

- Toll Booth Tags
- Wearable Products
- Battery Current Monitoring
- Sensor Conditioning
- Battery Powered



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# Ultra Low Vos, Low Power Amplifier– DIO2361/A/AL

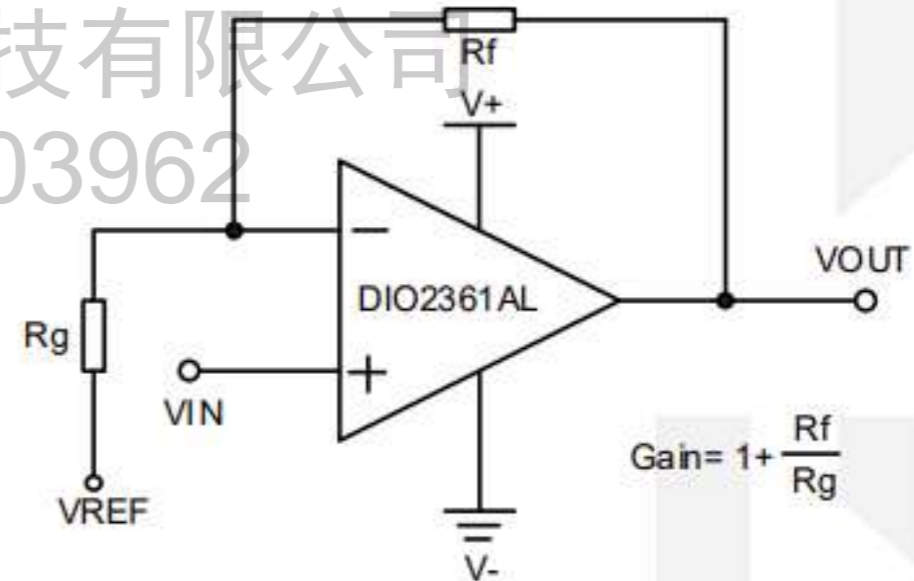


## Feature

- Ultra low VOS:  
DIO2361ALA: 10 $\mu$ V(Max)  
DIO2361ALB: 20 $\mu$ V(Max)  
DIO2361AL: 40 $\mu$ V(Max)  
DIO2361ALM: 65 $\mu$ V(Max)  
DIO2361AA: 10 $\mu$ V(Max)  
DIO2361AB: 20 $\mu$ V(Max)  
DIO2361A0: 40 $\mu$ V(Max)  
DIO2361AM: 65 $\mu$ V(Max)
- DIO2361: 35.0 $\mu$ A(typ.) Iq, DIO2361A: 17.0 $\mu$ A(typ.) Iq , DIO2361AL: 7.0 $\mu$ A(typ.) Iq
- Unity Gain Stable
- Gain Bandwidth Product: 300/300/110kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5 and SC70-5 packages
- Temperature Range:  
-Industrial: -40 to 85 $^{\circ}$ C  
-Extended: -40 to 125 $^{\circ}$ C

## Application

- Toll Booth Tags
- Wearable Products
- Battery Current Monitoring
- Sensor Conditioning
- Battery Powered



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# Ultra Low Vos, Low Power Amplifier– DIO236XL

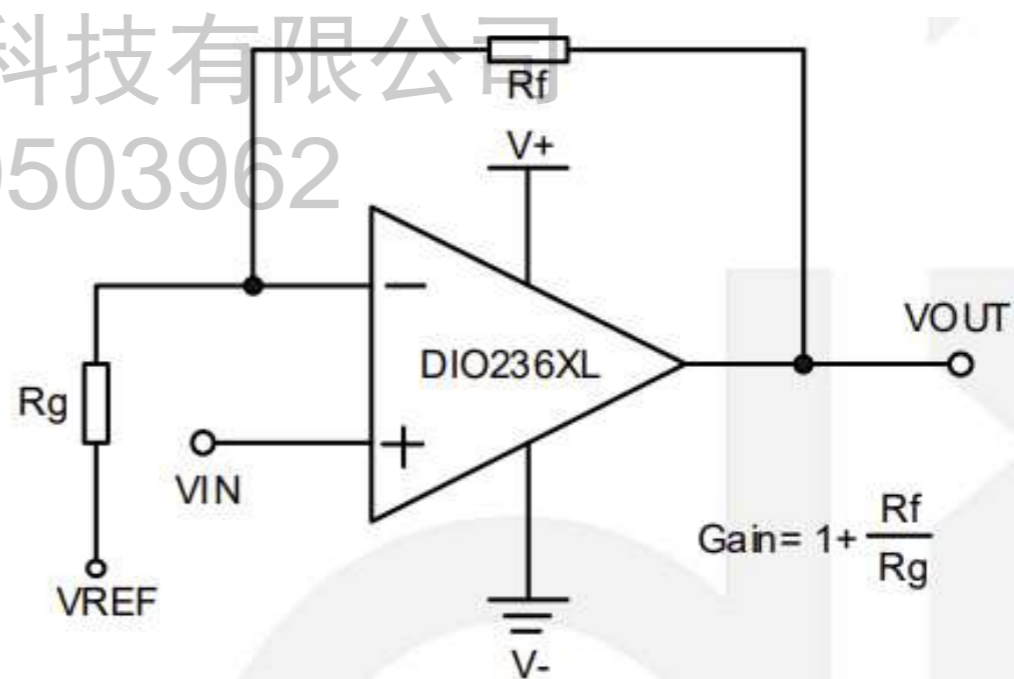


## Feature

- Ultra low VOS:  
DIO2361LA/2LA: 10 $\mu$ V(Max)  
DIO2361LB/2LB: 20 $\mu$ V(Max)  
DIO2361L/2L: 40 $\mu$ V(Max)  
DIO2361LM/2LM: 65 $\mu$ V(Max)
- Low Power: 7.0 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 110kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5, SC70-5, SOIC-8, MSOP-8, DFN2\*2-8 and DFN3\*3-8 packages
- Temperature Range:  
-Industrial: -40 to 85 $^{\circ}$ C  
-Extended: -40 to 125 $^{\circ}$ C

## Application

- Toll Booth Tags
- Wearable Products
- Battery Current Monitoring
- Sensor Conditioning
- Battery Powered



# Ultra Low Vos, Low Power Amplifier– DIO2362/4

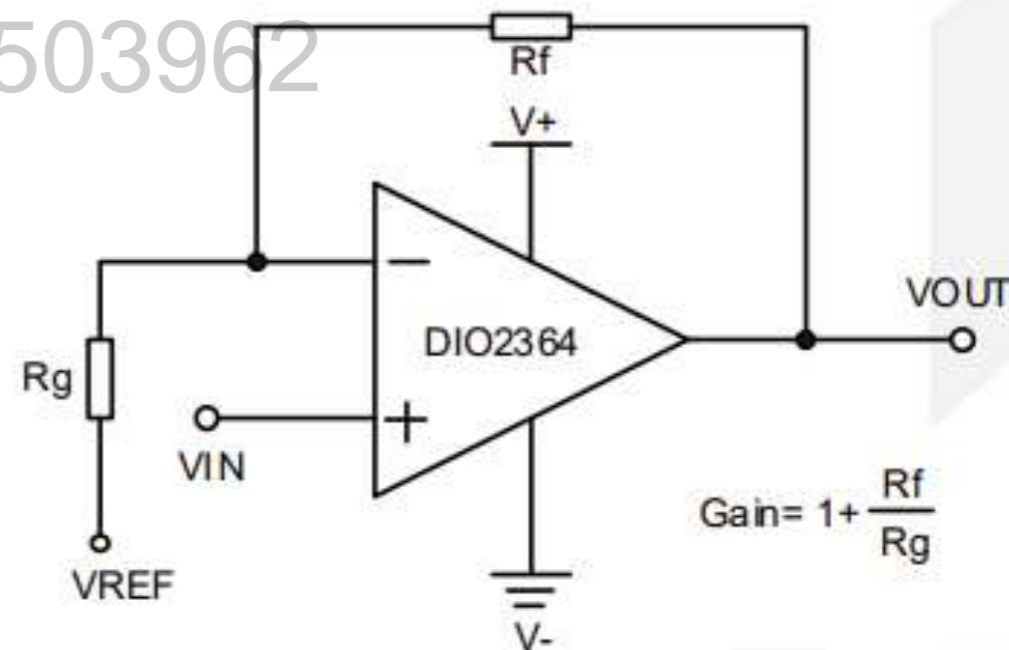


## Feature

- Ultra low VOS: DIO2364: 65 $\mu$ V(Max)
- Low Power: 17.0 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 300kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- DIO2364: Available in DFN3\*2-14, SOP-14 and TSSOP-14 packages
- DIO2362H: Available in DFN2\*2-8 package
- Temperature Range:
  - Industrial: -40 to 85 $^{\circ}$ C
  - Extended: -40 to 125 $^{\circ}$ C

## Application

- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing



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# Ultra Low Vos, Low Power Amplifier– DIO233x

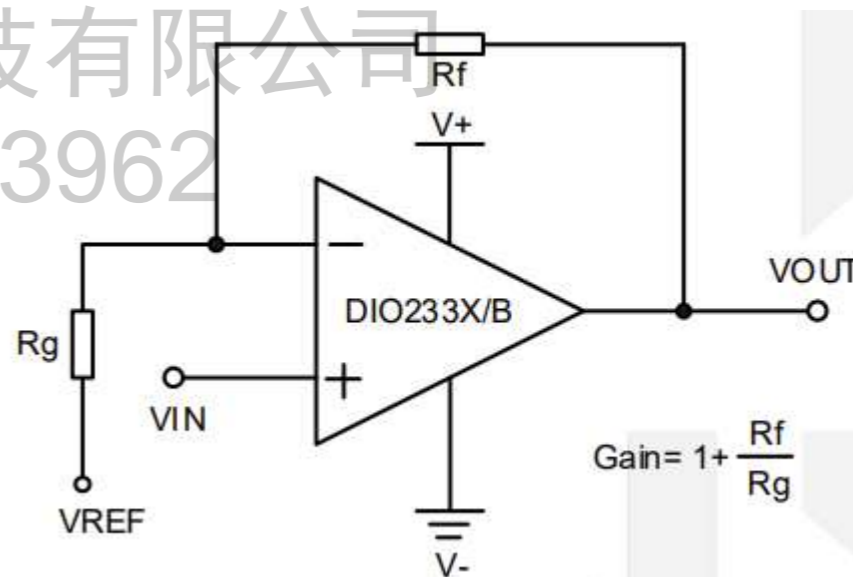


## Feature

- Ultra low VOS:  
DIO233X:15 $\mu$ V(Max)  
DIO233XB:35 $\mu$ V(Max)
- Low Power: 1.0 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 30kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- Available in SOT23-5, SOT23-6, SOIC-8, MSOP-8, SOIC-14 and TSSOP-14 packages
- **DIO2331LN6: DFN1.5\*1.5-6**
- Temperature Range:-40 to 125 $^{\circ}$ C

## Application

- Toll Booth Tags
- Wearable Products
- Battery Current Monitoring
- Sensor Conditioning
- Battery Powered



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# Ultra Low Vos, Low Power Amplifier– DIO2362H



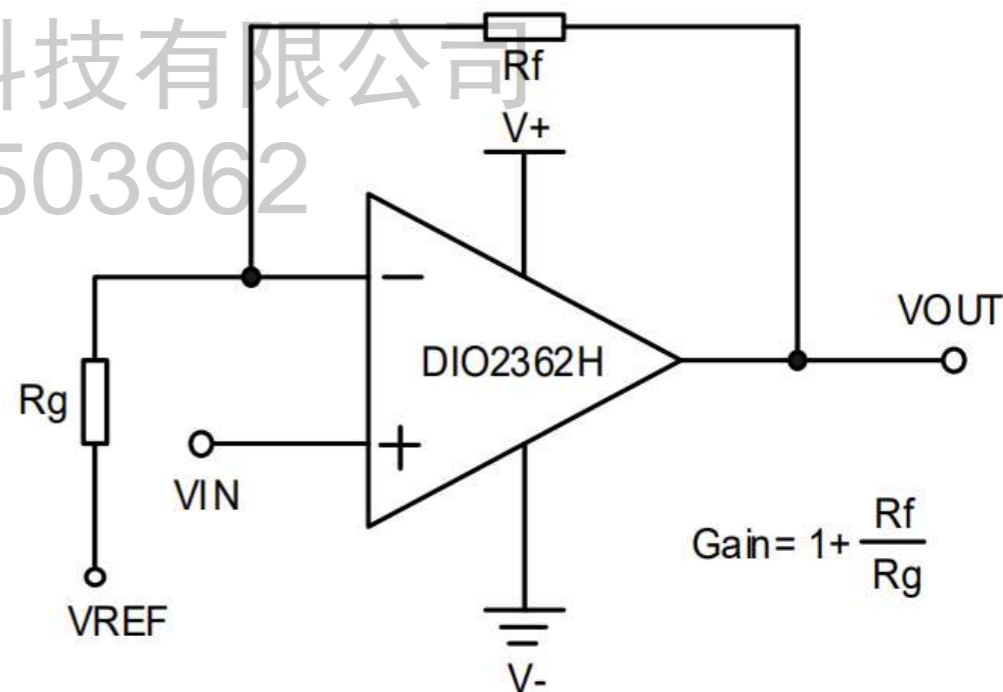
## Feature

- Ultra low VOS: 35 $\mu$ V(Max)
- Low Power: 17.0 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 300kHz(typ.)
- Wide supply range: 1.8V to 5.5V
- Available in DFN2\*2-8 package
- Temperature Range:
  - Industrial: -40 to 85 $^{\circ}$ C
  - Extended: -40 to 125 $^{\circ}$ C

## Application

- Toll Booth Tags
- Wearable Products
- Battery Current Monitoring
- Sensor Conditioning
- Battery Powered

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# Ultra Low Vos, Low Power Amplifier– DIO2372MP8



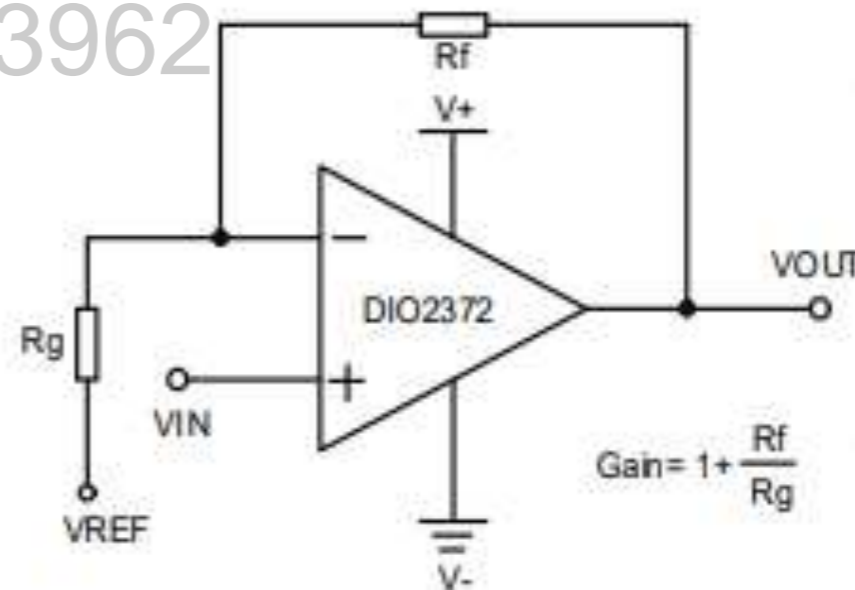
## Feature

- Ultra low VOS: 28 $\mu$ V(Max)
- Low Power: 17.0 $\mu$ A(typ.)
- Unity Gain Stable
- Gain Bandwidth Product: 300kHz(typ.)
- Wide supply range: 2.5V to 5.5V
- Available in MSOP-8 package
- Temperature Range:
  - Industrial: -40 to 85 $^{\circ}$ C
  - Extended: -40 to 85 $^{\circ}$ C

## Application

- Active Filters
- Data Acquisition
- Portable Equipment
- Test Equipment
- Broadband Communication
- Process Control
- Audio and Video Processing

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# 12 $\mu$ V Vos, 1.2MHz, RRIO CMOS High-Precision Amplifier– DIO235x



## Feature

- Rail-to-Rail Input and Output
- Low offset (VOS): 12 $\mu$ V typ.
- Input offset drift: 0.01 $\mu$ V/ $^{\circ}$ C
- Unity Gain Stable
- Gain Bandwidth Product: 1.2MHz
- Very low input bias currents: 20pA
- Wide supply range: 2.5V to 5.5V
- Single Supply Operation
- Low power: 0.73mA per channel
- Small size packaging best for portable applications:

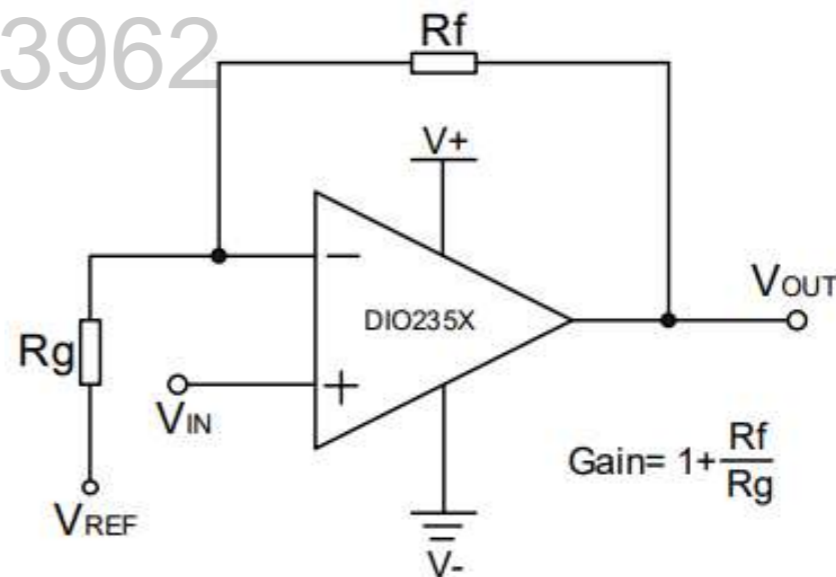
DIO2351: SOT23-5, SOIC-8

DIO2352: SOIC-8, MSOP-8 and TSSOP-8

DIO2354: TSSOP-14

## Application

- Temperature measurement
- Pressure sensor
- Precision current sensing
- Strain Gage Amplifier
- Medical instrument
- Thermocouple amplifier
- Handheld Test Equipment



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# 5 $\mu$ V Vos, Ultra-Low Offset Voltage, Low Power Amplifier– DIO238x



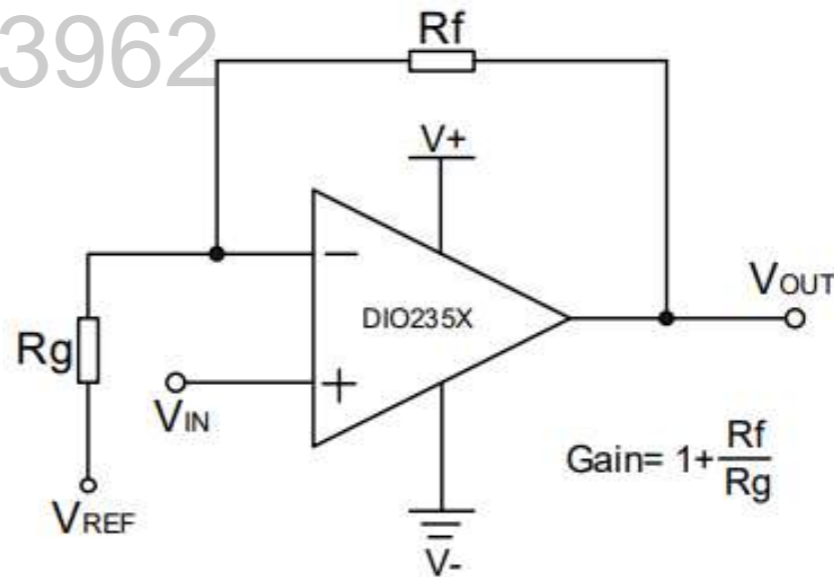
## Feature

- Ultra-low VOS:  
DIO2381A/ 2A/ 4A: Vos=  $\pm 5 \mu\text{V}$   
DIO2381B/ 2B/ 4B: Vos=  $\pm 10 \mu\text{V}$   
DIO2381C/ 2C/ 4C: Vos=  $\pm 20 \mu\text{V}$
- Low power: 40 $\mu$ A
- Unity gain stable
- Gain bandwidth product: 450kHz (typ.)
- Wide supply range: 2.5V to 5.5V
- Available in SOT23-5, SC70-5, SOP-8, SOP-14, MSOP-8, DFN2\*2-8, DFN3\*3-8 and TSSOP-14 packages
- Temperature Range:
  - Industrial: -40 to 85 $^{\circ}$ C
  - Extended: -40 to 85 $^{\circ}$ C

• 失调电压最小可到5uV

## Application

- Temperature measurement
- Pressure sensor
- Precision current sensing
- Strain Gage Amplifier
- Medical instrument
- Thermocouple amplifier
- Handheld Test Equipment



# High Voltage Rail-to-Rail Output Operational Amplifier– DIO260x

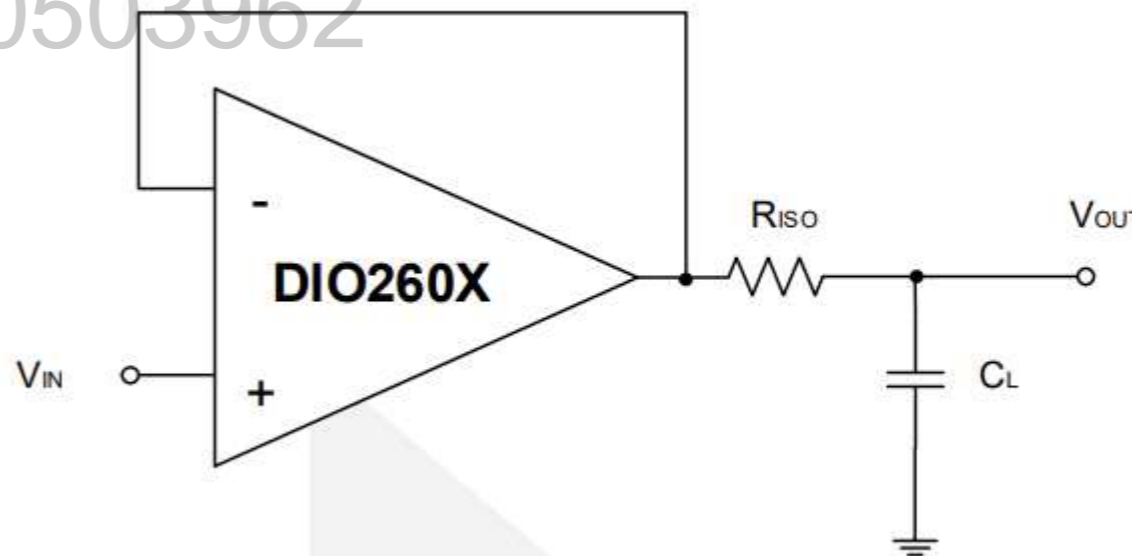


## Feature

- Supply Voltage Range: 4.5V to 36V
- Low Supply Current:  
0.95mA/Channel @ $V_S=36V$   
0.75mA/Channel @ $V_S=4.5V$
- Input Voltage Range:  $-V_S \sim (+V_S)-1.5V$
- Low Offset Voltage: 3.5mV(max)
- Rail-to-Rail Output:  $-V_S \sim +V_S$
- 3.5MHz High Gain-Bandwidth Product
- High Slew Rate: 2.5V/ $\mu s$
- Settling Time to 0.1% with 2V Step: 0.9 $\mu s$
- Packages:  
DIO2601 Available in: SOT23-5/SOIC-8  
DIO2602 Available in: SOIC-8/MSOP-8/TSSOP-8/DFN2\*2-8  
DIO2604 Available in: TSSOP-14/SOIC-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Test Equipment
- Broadband Communication
- Industrial Control
- Audio and Video Processing



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# High Voltage Rail-to-Rail Output Operational Amplifier– DIO270x

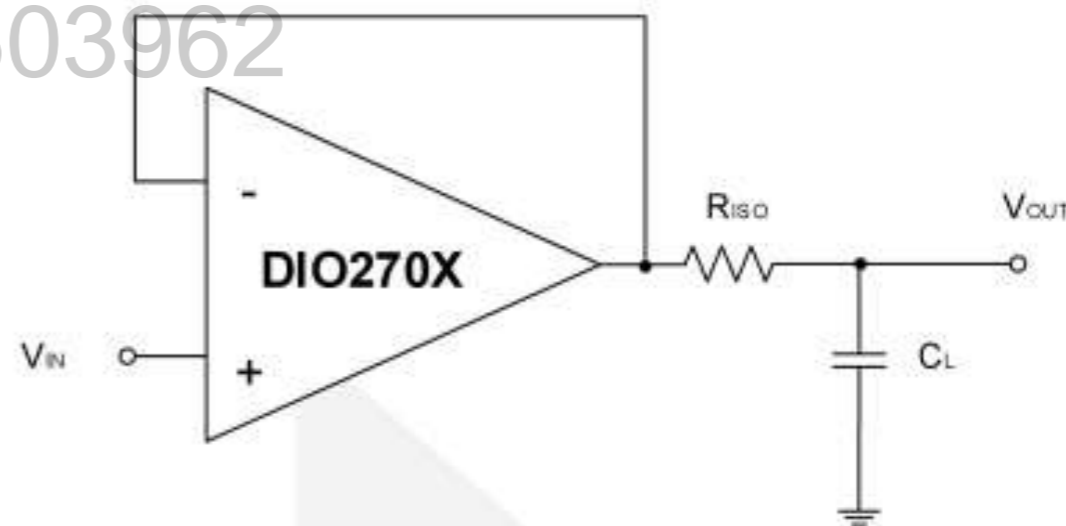


## Feature

- Supply voltage range: 4.5V to 32V
- Low supply current:
  - 1.7mA/channel at  $V_S = 32V$
  - 1.4mA/channel at  $V_S = 4.5V$
- Input voltage range:  $-V_S \sim (+V_S)-1.5V$
- Low offset voltage: 3.5mV (max)
- Rail-to-rail output:  $-V_S \sim +V_S$
- 6MHz high gain-bandwidth product
- High slew rate: 20V/ $\mu$ s
- Settling time to 0.1% with 10V step: 0.6 $\mu$ s
- Overload recovery time: 0.2 $\mu$ s
- Packages:
  - DIO2701 available in: SOT23-5/SOIC-8
  - DIO2702 available in: SOIC-8/MSOP-8/TSSOP-8
  - DIO2704 available in: TSSOP-14/SOIC-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Test Equipment
- Broadband Communication
- Industrial Control
- Audio and Video Processing



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# High Voltage Rail-to-Rail Output Operational Amplifier– DIO2841

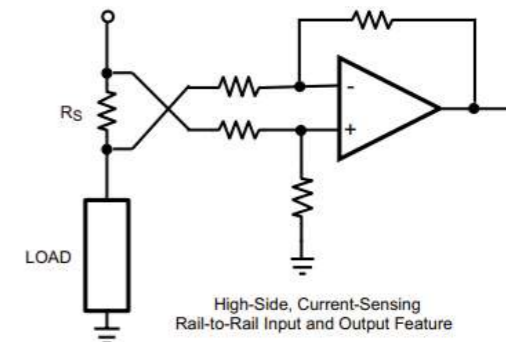
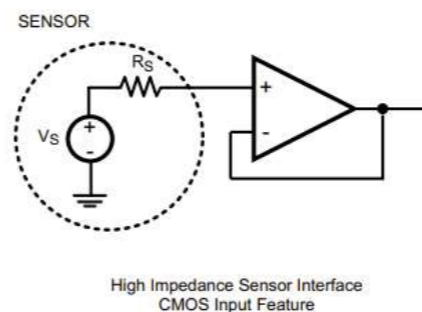
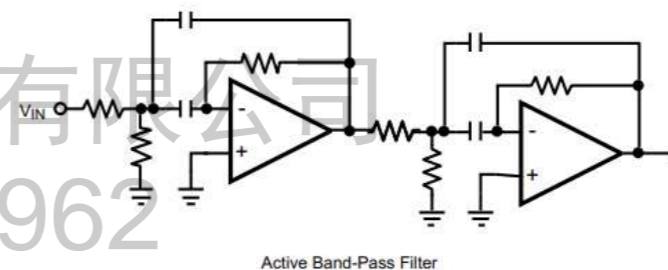


## Feature

- Unless Otherwise Noted, Typical Values at  $T_A = 25^\circ\text{C}$ ,  $V_+ = 5\text{V}$ .
- Small 5-Pin SC70 Package (2.00 mm \* 1.25 mm \* 0.95 mm)
- Wide Supply Voltage Range: 2.7 V to 12 V
- Specified Performance at 3.3 V, 5 V and  $\pm 5\text{V}$
- Low Supply Current: 1 mA Per Channel
- Unity Gain Bandwidth: 4.5 MHz
- Open-Loop Gain: 133 dB
- Input Offset Voltage: 500  $\mu\text{V}$  Maximum
- Input Bias Current: 0.3pA
- CMRR at 112 dB and PSSR at 108 dB
- Input Voltage Noise: 20nV/ $\sqrt{\text{Hz}}$
- Temperature Range:  $-40$  to  $125^\circ\text{C}$
- Rail-to-Rail Input and Output (RRIO)

## Application

- High Impedance Sensor Interface
- Battery-Powered Instrumentation
- High Gain and Instrumentation Amplifiers
- DAC Buffers and Active Filters



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# High Speed, RRIO CMOS Amplifiers– DIO264x

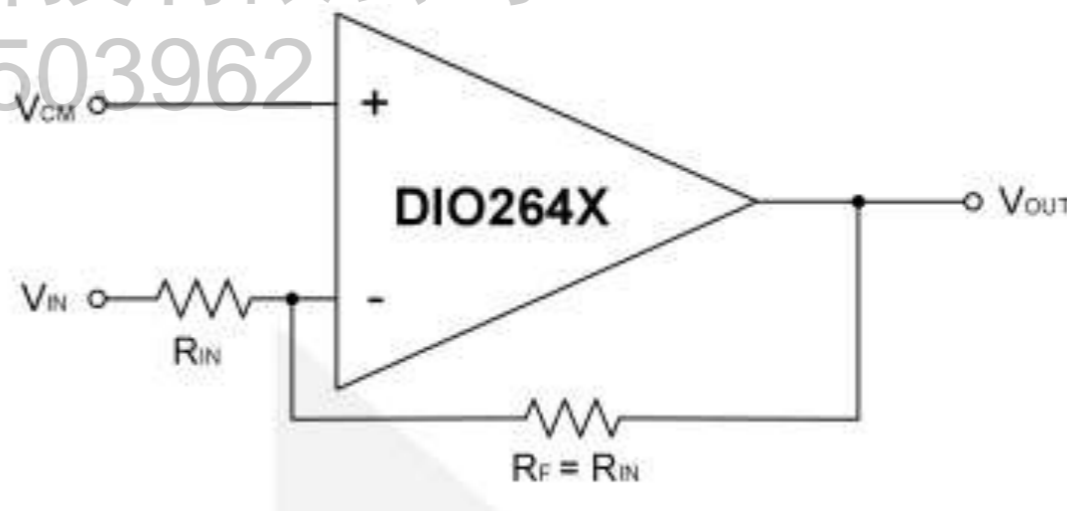


## Feature

- Rail-to-rail input and output
- Supply voltage range: 2.7V to 13.2V
- Supply current (no load): 7mA/channel
- Low offset voltage: 11mV (max)
- Output voltage swing 20mV from Rails
- High gain-bandwidth product: 105 MHz when  $V^+ = 5\text{ V}$
- Slew rate ( $A_V = -1$ ): 85 V/ $\mu\text{s}$
- Settling time: 80ns
- Input voltage noise (100 kHz) 30 nV/ $\sqrt{\text{Hz}}$
- Output short protection
- Available packages:  
DIO2641: SOT23-5/SOIC-8  
DIO2642: SOIC-8/MSOP-8  
DIO2644: TSSOP-14/SOIC-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Test Equipment
- Broadband Communication
- Industrial Control
- Audio and Video Processing



- **105MHz**超高带宽
- **85V/us**超高压摆率



# High Speed, RRIO CMOS Amplifiers– DIO2644B



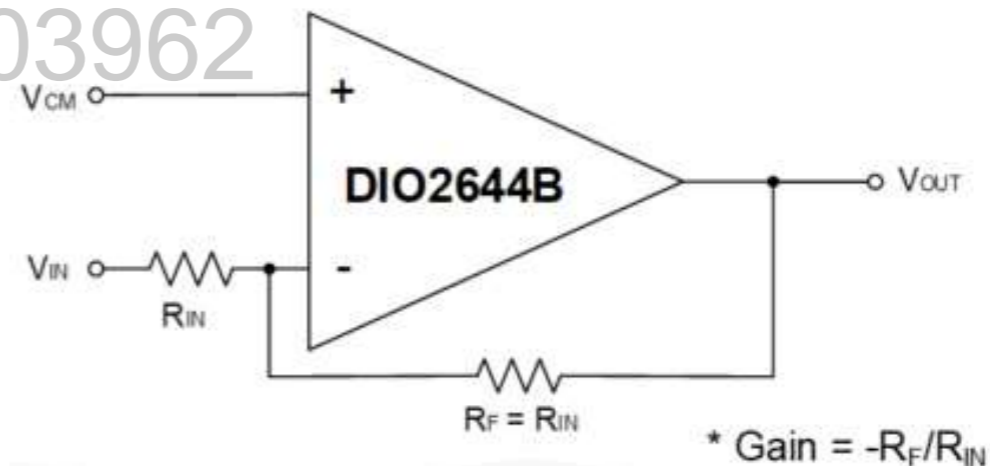
## Feature

- Rail-to-rail input and output
- Supply voltage range: 2.7V to 13.2V
- Supply current (no load): 7mA/channel
- Low offset voltage: 11mV (max)
- Output voltage swing 20mV from Rails
- High gain-bandwidth product: 105 MHz when  $V+ = 5\text{ V}$
- Slew rate ( $A_V = -1$ ): 85 V/ $\mu\text{s}$
- Settling time: 80ns
- Input voltage noise (100 kHz) 30 nV/ $\sqrt{\text{Hz}}$
- Output short protection
- Available packages: TSSOP-14/SOIC-14

## Application

- Portable Equipment
- Active Filters
- Data Acquisition
- Test Equipment
- Broadband Communication
- Industrial Control
- Audio and Video Processing

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- 105MHz超高带宽
- 85V/us超高压摆率



# Bi-Directional Zero-Drift Series Current Shunt Monitor– DIO2399x



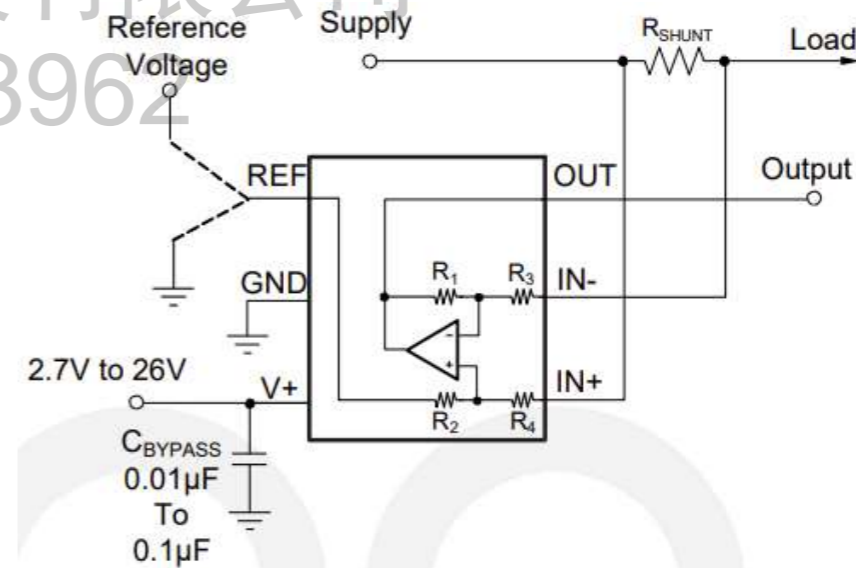
## Feature

- Wide common-mode range: -0.3V to 26V
- Offset voltage: 150 $\mu$ V (Max) (Enable shunt drops of 10mV full-scale)
- Accuracy
  - $\pm 1.5\%$  Gain error (Max over temperature)
  - 0.5 $\mu$ V/ $^{\circ}$ C Offset drift (Typ)
  - 10ppm/ $^{\circ}$ C Gain drift (Max)
- Choice of Gains:
  - DIO2399A: 50V/V
  - DIO2399B: 100V/V
- Quiescent current: 100 $\mu$ A (Max)
- Packages: SC70-6, thin DQFN-10

## Application

- Notebook Computers
- Cell Phones
- Telecom Equipment
- Power Management
- Battery Chargers
- Welding Equipment

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# Bi-Directional Zero-Drift Series Current Shunt Monitor– DIO2488x



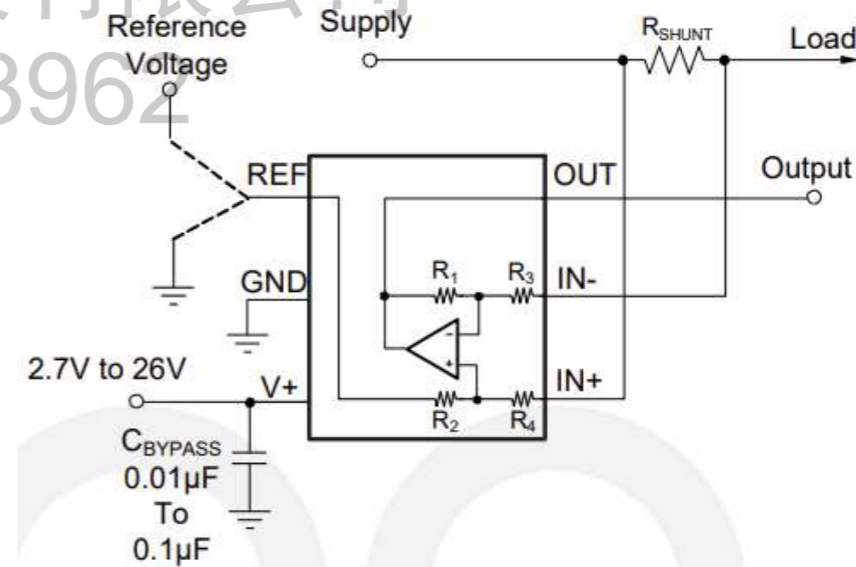
## Feature

- Wide common-mode range: -0.3V to 26V
- Offset voltage: 130 $\mu$ V (Max) (Enable shunt drops of 10mV full-scale)
- Accuracy
  - $\pm 1.5\%$  Gain error (Max over temperature)
  - 0.5 $\mu$ V/ $^{\circ}$ C Offset drift (Typ)
  - 10ppm/ $^{\circ}$ C Gain drift (Max)
- Choice of Gains:
  - DIO2388A: 50V/V
  - DIO2388B: 100V/V
- Quiescent current: 100 $\mu$ A (Max)
- Packages: SC70-6, thin DQFN-10

## Application

- Notebook Computers
- Cell Phones
- Telecom Equipment
- Power Management
- Battery Chargers
- Welding Equipment

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# Ultra Low Vos, 2.5kHz, RRIO High-Precision Amplifier– DIO2352x



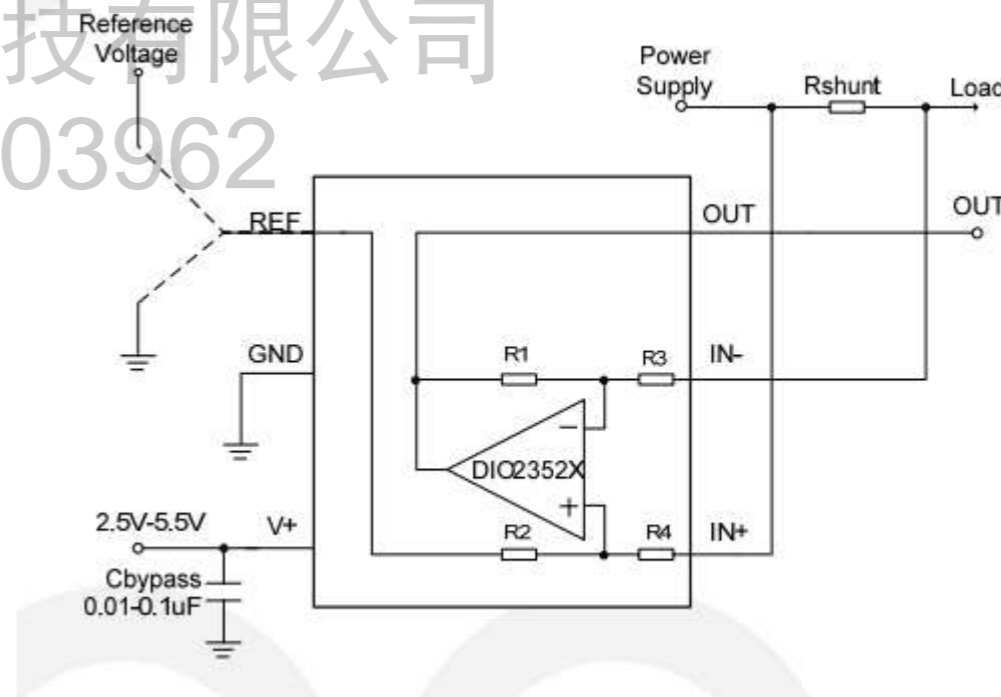
## Feature

- Rail-to-Rail Input and Output
- Low offset (VOS):  $\pm 13\mu\text{V}$
- Gain Error:  $\pm 1\%$
- Input offset drift:  $0.01\mu\text{V}/^\circ\text{C}$  (Max)
- Gain drift:  $10\text{ppm}/^\circ\text{C}$  (Max)
- Gain Selection:  
DIO2352A:  $50\text{V}/\text{V}$   
DIO2352B:  $100\text{V}/\text{V}$
- Wide supply range:  $2.5\text{V}$  to  $5.5\text{V}$
- Single Supply Operation
- Quiescent Current:  $730\mu\text{A}$  (Typ)
- Available Packages: SOIC-8, TSSOP-8, DFN-8

## Application

- Notebook Computer
- Mobile Phone
- Power Management IC
- Battery Charger
- Welding Equipment

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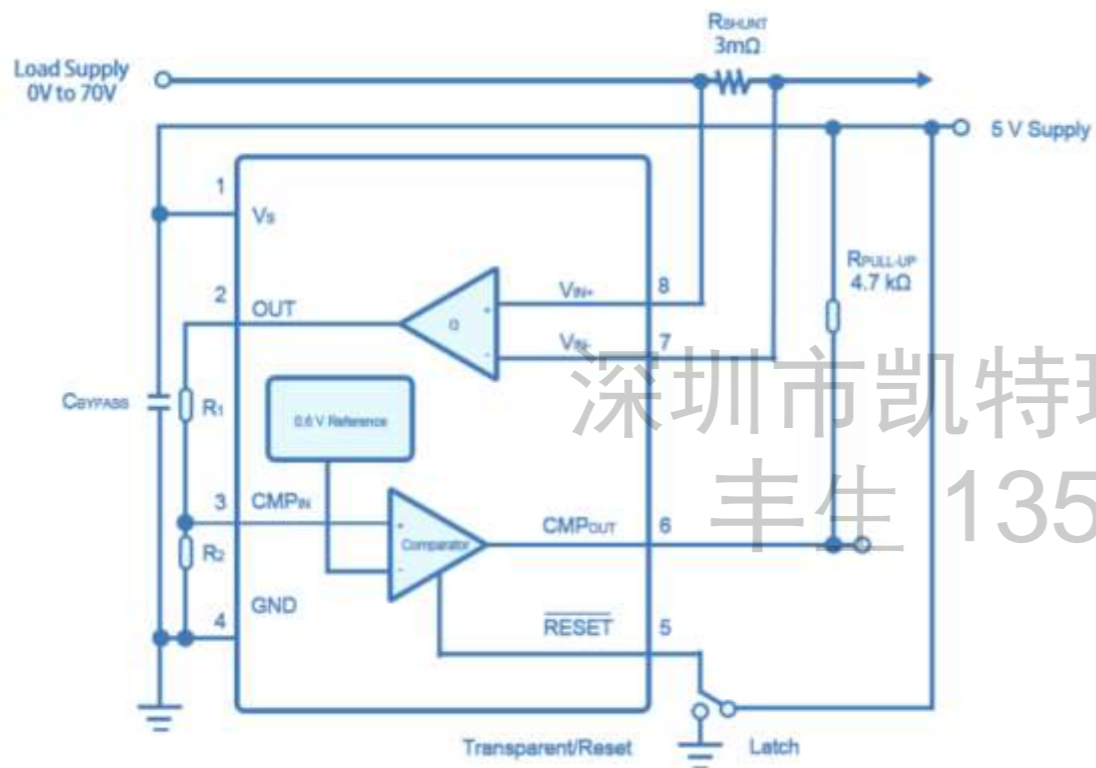




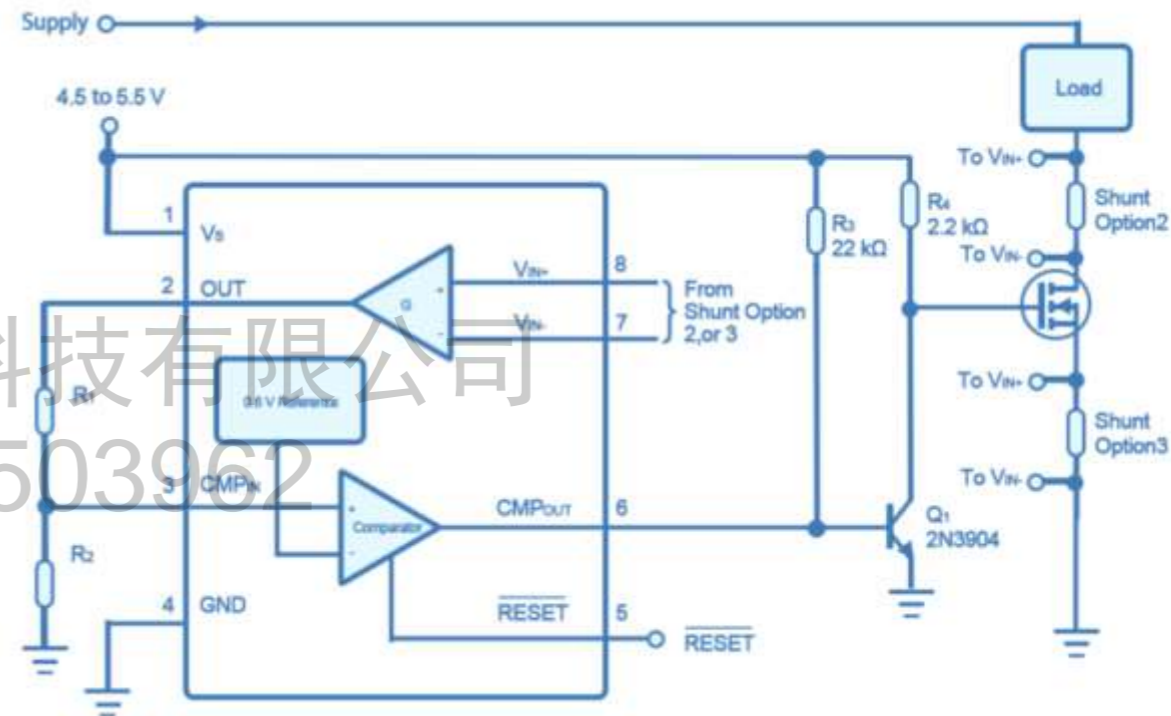
# OPA and Comparator - DIO2210



## Low-Side Switch Overcurrent Shutdown



## High-Side Switch Overcurrent Shutdown



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# Voltage Output, High or Low Side Measurement, Bi-Directional Zero-Drift Series Current Shunt Monitor-DIO2213



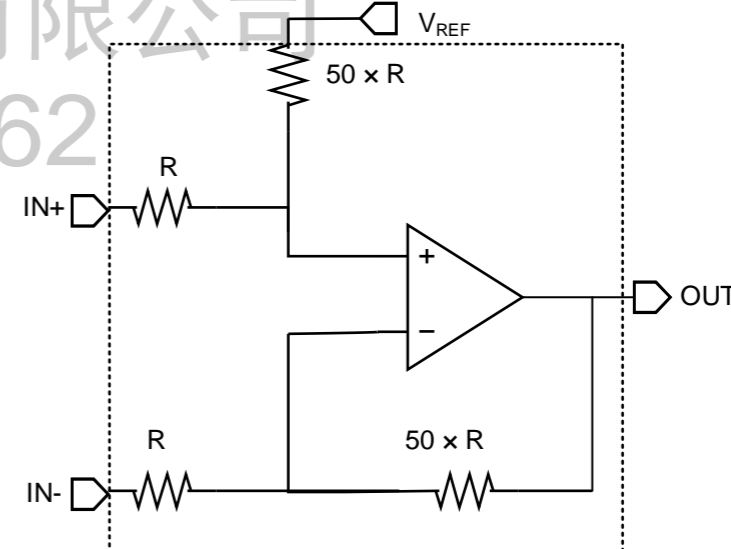
## Feature

- Common-mode voltage: **-0.1 V to +70 V**
- Supply voltage: 3 V to 40 V
- Current-Sense Amplifier:
  - Offset voltage:  $\pm 0.15\text{mV}$  (Max)
  - 0.5% Max Total output Error Over Temperature
- Gain/bandwidth: 50 V/V, 230 kHz
- Slew rate: 2.3 V/ $\mu\text{s}$
- Quiescent Current: 470 $\mu\text{A}$
- Ambient Temperature Range:  $-40^\circ\text{C}$  to  $125^\circ\text{C}$
- Package: SOT23-6 and SOIC-8

## Application

- Electric power steering systems
- Electronic stability control systems
- Laptops
- Battery chargers

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# -4V to 80V, Bidirectional, Ultra-Precise Current Sense Amplifier With Enhanced PWM Rejection– DIO2240



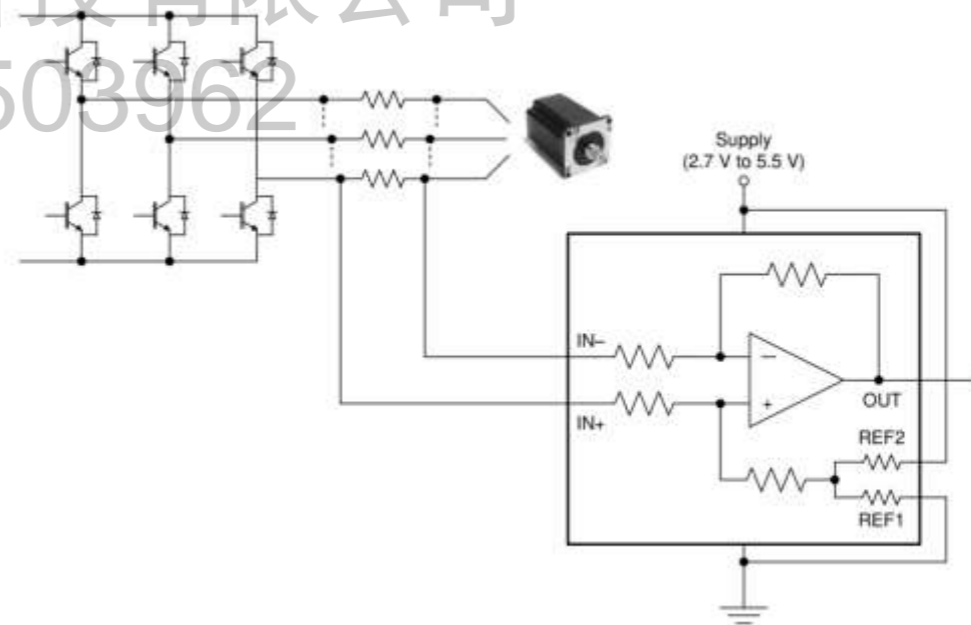
## Feature

- Enhanced PWM Rejection
- Excellent CMRR:
  - 132dB DC CMRR
  - 93dB AC CMRR at 50 kHz
- Wide Common-Mode Range: -4 V to 80 V
- Accuracy:
  - Gain:  
Gain Error: 0.20% (Maximum)
  - Gain Drift: 2.5 ppm/° C (Maximum)
- Offset:
  - Offset Voltage:  $\pm 25 \mu\text{V}$  (Maximum)
  - Offset Drift: 250 nV/° C (Maximum)
- Available Gains:
  - DIO2240A1: 20 V/V
  - DIO2240A2: 50 V/V
  - DIO2240A3: 100 V/V
  - DIO2240A4: 200 V/V
- Quiescent Current: 2.4 mA (Maximum)

## Application

- Motor Controls
- Solenoid and Valve Controls
- Power Management
- Actuator Controls
- Pressure Regulators
- Telecom Equipment

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# Power Monitor– DIO2226



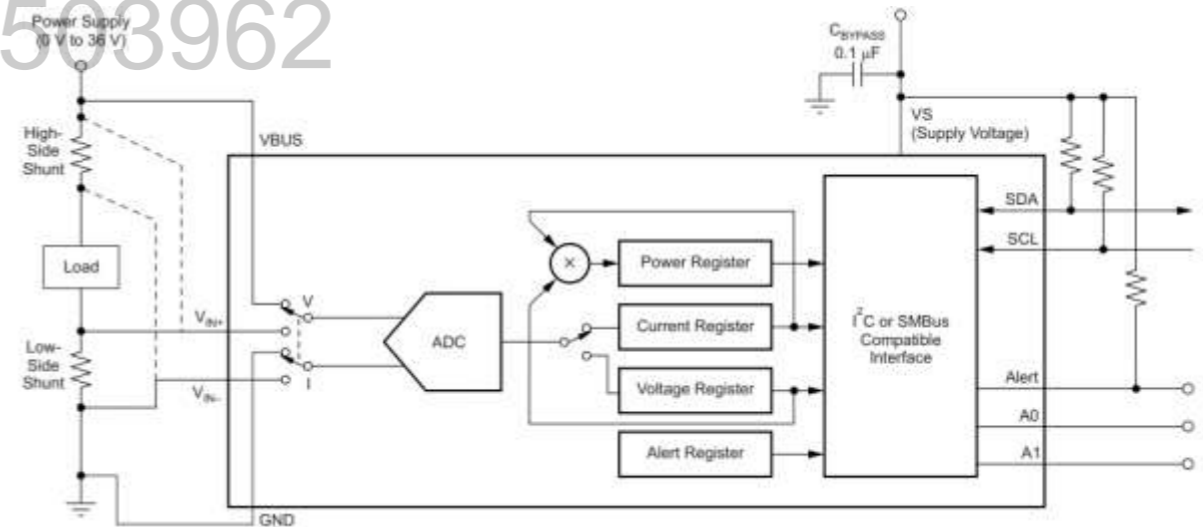
## Feature

- 2 channel, bidirectional buffer isolates capacitance and allows 540pF on either side
- Senses Bus Voltages From 0V to 36V
- High-Side or Low-Side Sensing
- Reports Current, Voltage, and Power
- High Accuracy:
  - 0.1% Gain Error (Max)
  - 10  $\mu$ V Offset (Max)
- Configurable Averaging Options
- 16 Programmable Addresses
- Operates from 2.7-V to 5.5-V Power Supply
- 10-Pin, DGS (VSSOP) Package

## Application

- Servers
- Telecom Equipment
- Computing
- Power Management
- Battery Chargers
- Power Supplies
- Test Equipment

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# Tiny Packages, Nano-Power, Precision Current-Sense Amplifier– DIO2216



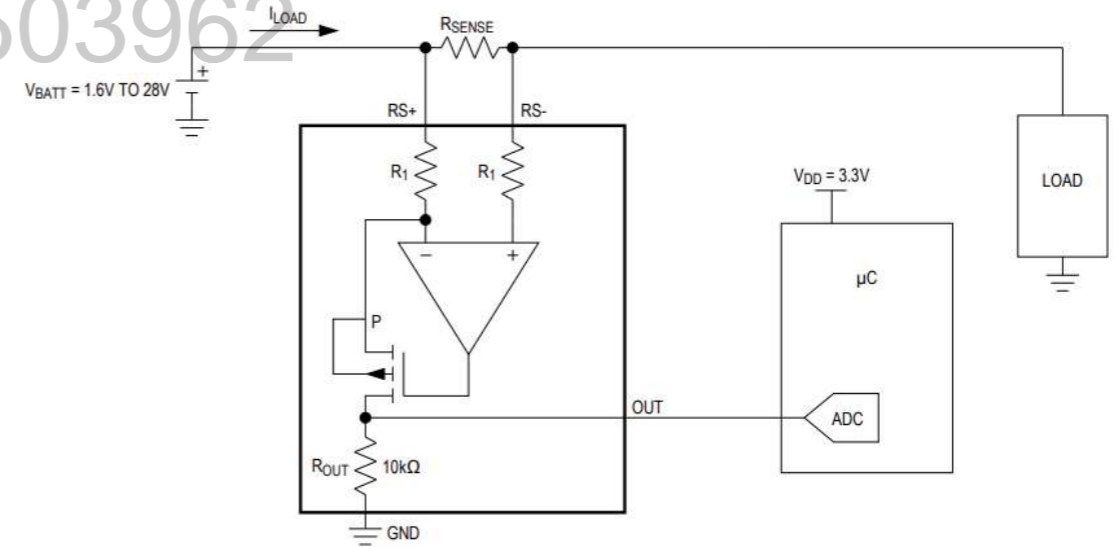
## Feature

- Ultra-Low Quiescent Current: 1.2 $\mu$ A (MAX)
- Input Common Mode Range: 1.6V to 28V
- Low Input Offset Voltage: 60 $\mu$ V (MAX)
- Choice of Gains:
  - DIO2216A0 Gain: 25V/V
  - DIO2216A1 Gain: 50V/V
  - DIO2216A2 Gain: 100V/V
  - DIO2216A3 Gain: 200V/V
- Low Gain Error:  $\pm 0.4\%$  (MAX)
- Voltage Output
- $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  Operating Temperature Range
- Available in Green SOT-23-5 and WLCSP0.76\*0.76-4 Packages

## Application

- Servers
- Telecom Equipment
- Computing
- Power Management
- Battery Chargers
- Power Supplies
- Test Equipment

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# RRIO 1.4V Push-Pull/Open-Drain Output Comparator– DIO2087x



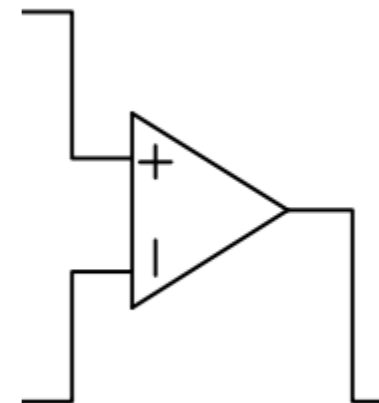
## Feature

- Ultra Low Power Consumption: 1.35 $\mu$ A (TYP) at V+ = 1.4V
- Wide Supply Voltage Range: 1.4V to 5.5V
- Propagation Delay: 1.3 $\mu$ s (TYP) at V+ = 1.4V
- DIO2087x: Push-Pull Output Current Drive: 25mA (TYP) at V+ = 5V
- DIO2087xB: Open-Drain Output Current Drive: 25mA (TYP) at V+ = 5V
- Rail-to-Rail Input and Output
- -40 to 85 $^{\circ}$ C Operating Temperature Range
- Available packages:
  - DIO20871: SOT23-5/SC70-5
  - DIO20871A: SOT23-5/SC70-5
  - DIO20882: SOIC-8/MSOP-8
  - DIO20884: TSSOP-14/SOIC-14
  - DIO20885: SOIC-8/MSOP-8
  - DIO20871B: SOT23-5
  - DIO20872B: DFN1.6\*1.2-8
  - DIO20884B: QFN3\*3-16

## Application

- RC timers
- Window detectors
- IR receiver
- Multi-vibrators
- Alarm and monitoring circuits

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# RRIO 1.4V Push-Pull Output Comparator– DIO2089x



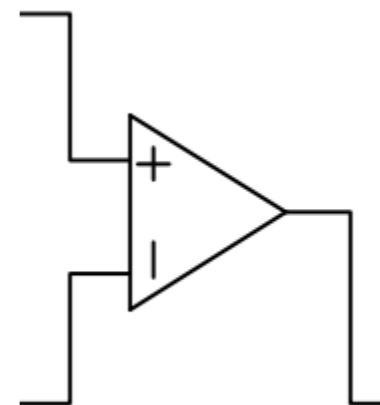
## Feature

- Ultra Low Power Consumption: 0.3 $\mu$ A (TYP) at V+ = 1.4V
- Wide Supply Voltage Range: 1.4V to 5.5V
- Propagation Delay: 8 $\mu$ s (TYP) at V+ = 1.4V
- Push-Pull Output Current Drive: 23mA (TYP) at V+ = 5V
- Rail-to-Rail Input
- -40 to 85°C Operating Temperature Range
- Available in the Green SC70-5, DFN1\*1-6, DFN0.8\*0.8-4 and DFN1.6\*1.2-8 Packages

## Application

- RC timers
- Window detectors
- IR receiver
- Multi-vibrators
- Alarm and monitoring circuits

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# RRIO 1.8V Open-Drain Output Comparator– DIO331/393



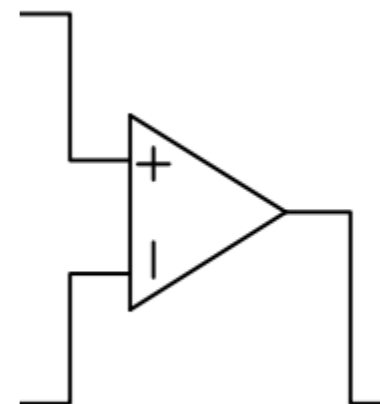
## Feature

- Low power consumption: 37  $\mu\text{A}$  (TYP) at  $V_+ = 1.8\text{ V}$
- Wide supply voltage range: 1.8 V to 5.5 V
- **Propagation delay: 84 ns (TYP) at  $V_+ = 1.8\text{ V}$**
- Open drain output sink current drive: 33.5 mA (TYP) at  $V_+ = 5\text{ V}$
- Rail-to-rail input and output
- -40 to 125°C operating temperature range
- Available in the Green SOT23-5, SC70-5, SOIC-8 and MSOP-8 packages

## Application

- RC timers
- Window detectors
- IR receiver
- Multi-vibrators
- Alarm and monitoring circuits

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# 36V Open-Drain Output Comparator– DIO20903

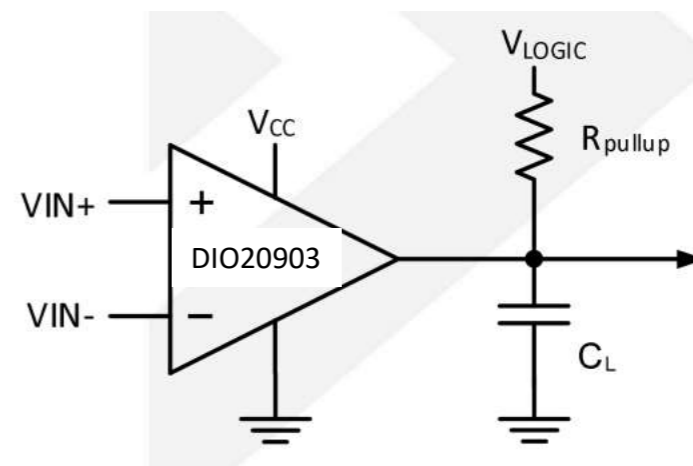


## Feature

- Wide supply voltage range: 2.7 V to 36 V
- Open drain output
- Input offset voltage:  $\pm 4.5$  mV (max.)
- Common mode input voltage range :  $V_-$  to  $(V_+) - 1.5$  V
- Low supply current: 125  $\mu$ A (typ.) per channel
- Low input bias current: 10 pA (typ.) at  $V_{CC} = 5$  V and  $V_{CC} = 12$  V
- Propagation delay time at  $V_{CC} = 5$  V, overdrive= 5 mV:
  - 2  $\mu$ s (high-to-low)
  - 2.3  $\mu$ s (low-to-high)

## Application

- Vacuum robot
- Single phase UPS
- Server PSU
- Cordless power tool
- Wireless infrastructure
- Building automation
- Factory automation & control
- Motor drives
- Infotainment & cluster



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# Three Port, 4 GHz, High-Speed MIPI Switch– DIO1642



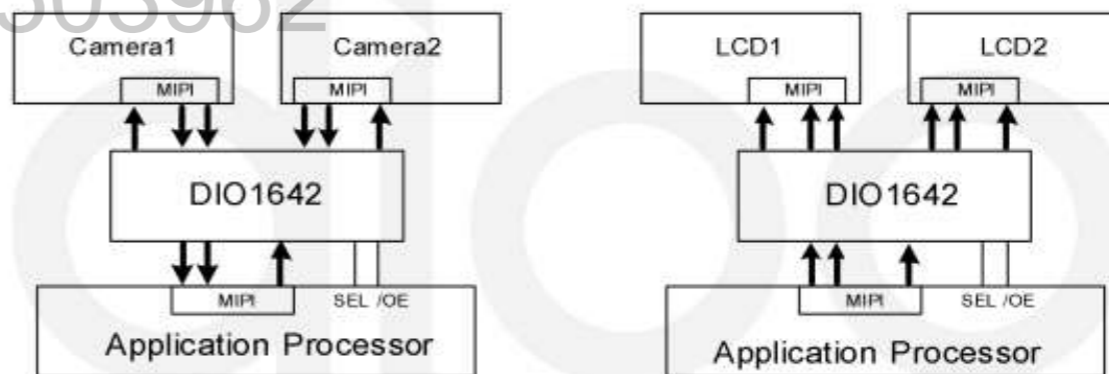
## Feature

- Supply voltage: 1.65 V to 5.5 V
- Quiescent current: 17  $\mu$ A
- Low on resistance: 10  $\Omega$
- -3 dB bandwidth: 4 GHz
- Package: QFN3.4\*2.5-24

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays

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# Three Port, 4 GHz, High-Speed MIPI Switch– DIO1628



## Feature

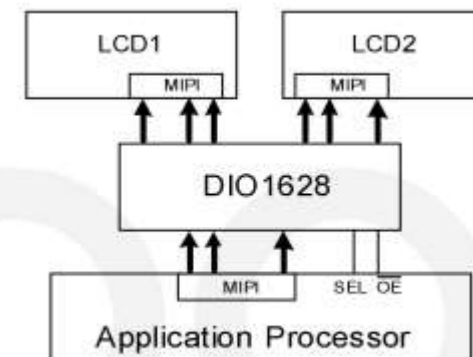
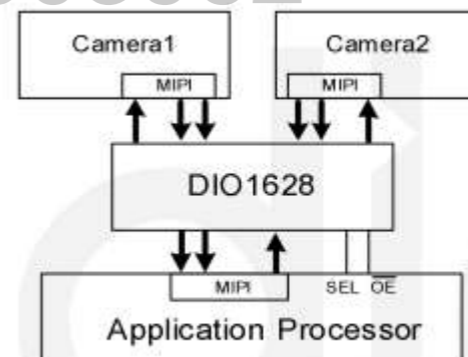
- Supply voltage: 1.65 V to 5.5 V
- Quiescent current: 17 uA
- Low on resistance: 10  $\Omega$
- -3 dB differential bandwidth: 6 GHz (typ.)
- Package: LGA1.7\*2.4-24

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays

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- **6GHz超高带宽**
- **LGA1.7\*2.4-24的超小封装**



# 10 Channels 2.5Gbps Differential MIPI Switch– DIO1646

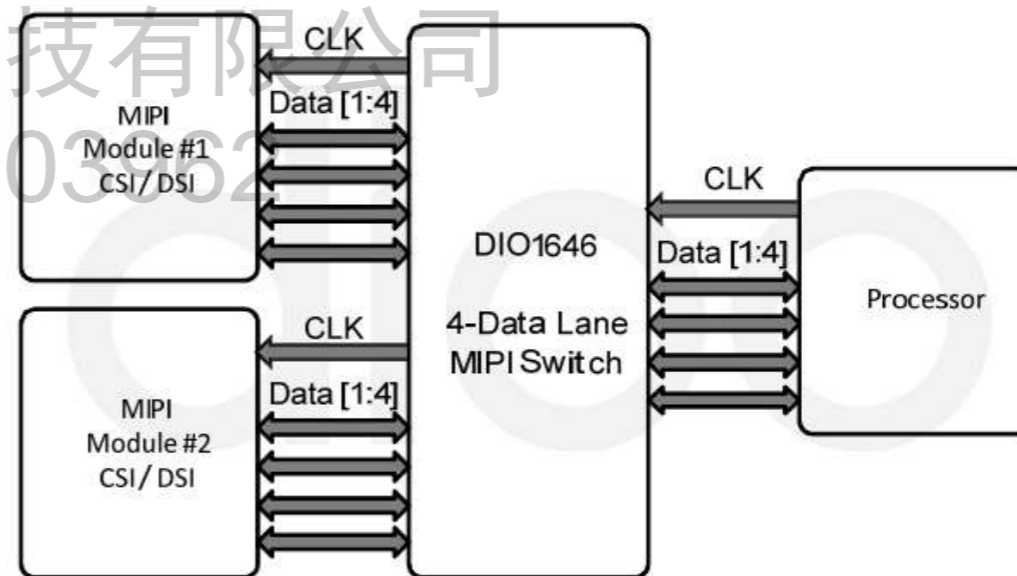


## Feature

- Input Voltage Range: 1.65V to 5V
- Input Signals: 0 to 1.3V
- Bandwidth: 2.5GHz Min
- Switch Type: SPDT (10 channels)
- Signal Types: MIPI, D-PHY
- RON: 5.5Ω Typical HS MIPI 5.5Ω Typical LP MIPI
- ICCZ: 1μA Max
- ICC: 45μA Typ
- OIRR: -25dB Typical
- Xtalk: -30dB Typical
- CON: 1.6pF Typical
- Operating Temperature: -40 to 85°C
- Package: 36-Ball WLCSP(0.4mm pitch)

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays



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# 10 Channels 3.5Gbps Differential MIPI Switch– DIO1647

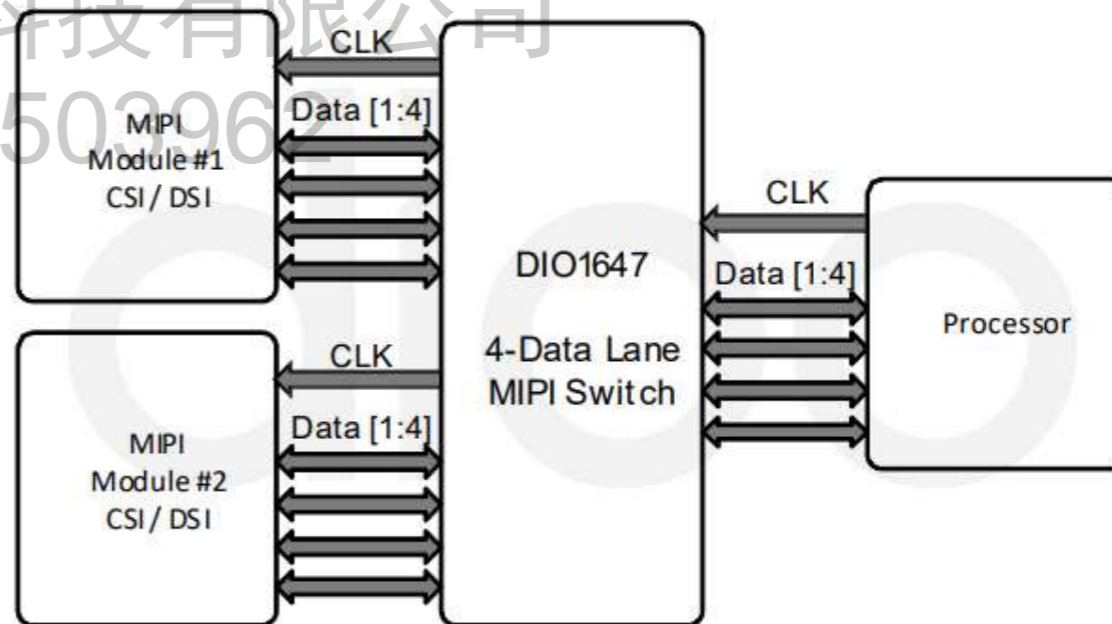


## Feature

- Input Voltage Range: 1.65V to 5V
- Input Signals: 0 to 1.3V
- Bandwidth: 3.5GHz
- Switch Type: SPDT (10 channels)
- Signal Types: MIPI, D-PHY
- RON: 7.5Ω Typical HS MIPI 8.4Ω Typical LP MIPI
- ICCZ: 1μA Max
- ICC: 25μA Typ
- OIRR: -25dB Typical
- Xtalk: -30dB Typical
- CON: 1.5pF Typical
- Operating Temperature: -40 to 85°C
- Package: 36-Ball WLCSP(0.4mm pitch)

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays



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# 10 Channels 3.5Gbps Differential MIPI Switch– DIO1648



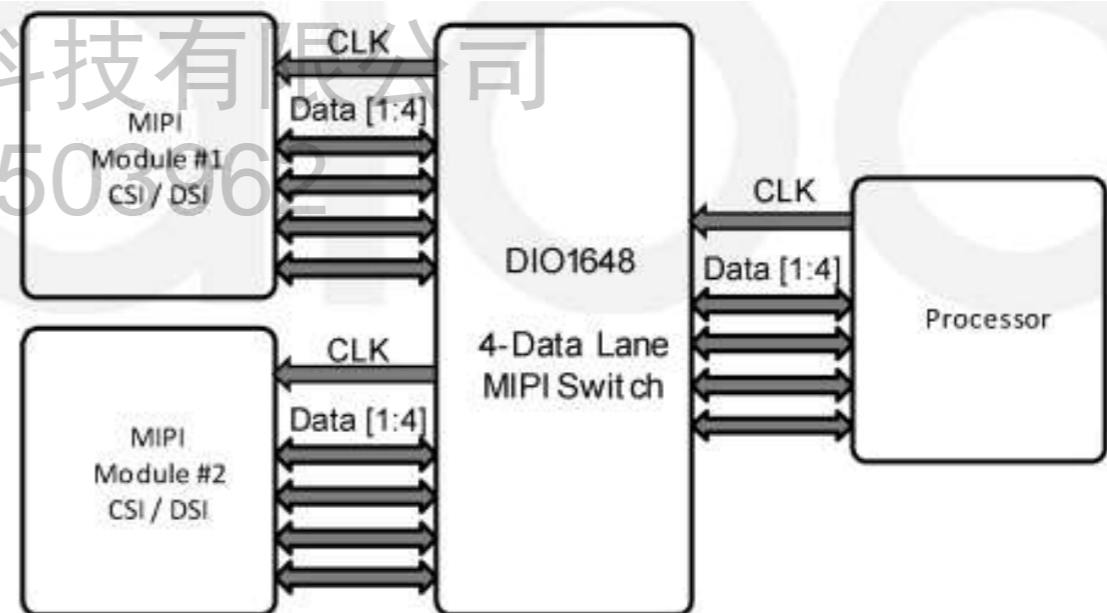
## Feature

- Input Voltage Range: 1.65V to 5V
- Input Signals: 0 to 1.3V
- Bandwidth: 3.5GHz
- Switch Type: SPDT (10 channels)
- Signal Types: MIPI, D-PHY
- RON: 7.5Ω Typical HS MIPI 8.4Ω Typical LP MIPI
- ICCZ: 1μA Max
- ICC: 25μA Typ
- OIRR: -25dB Typical
- Xtalk: -30dB Typical
- CON: 1.5pF Typical
- Operating Temperature: -40 to 85°C
- Package: 36-Ball WLCSP(0.4mm pitch)

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays

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# 10 Channels 6Gbps Differential MIPI Switch– DIO1634

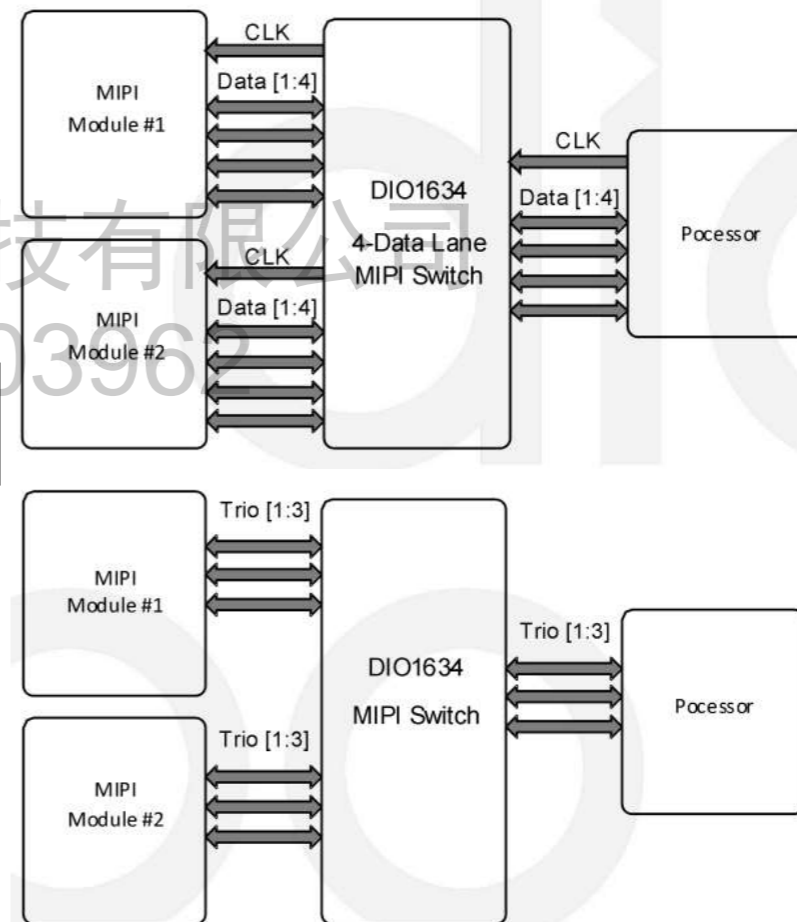
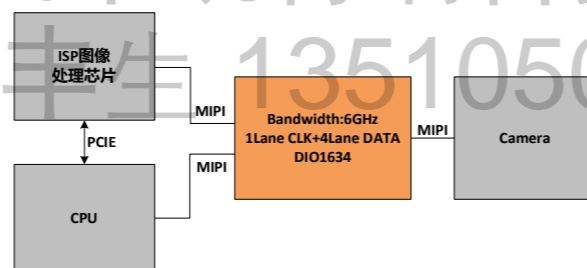


## Feature

- Input voltage range: 1.65 V to 5 V
- Input signals: 0 V to 1.3 V
- Data rate support: up to 3.5 Gbps C-PHY, up to 4.5 Gb/s D-PHY.
- DIFF BW: 6 GHz
- Switch type: SPDT (10 channels)
- Signal types: MIPI, C-PHY / D-PHY
- RON: 7.5  $\Omega$  typical HS MIPI 8.4  $\Omega$  typical LP MIPI
- ICCZ: 1  $\mu$ A (max)
- ICC: 25  $\mu$ A (typ)
- OIRR: -25 dB (typ)
- Xtalk: -30 dB (typ)
- CON: 1.5 pF (typ)
- Operating temperature: -40 to 85 $^{\circ}$ C
- Package: WLCSP-36(0.35mm pitch)

## Application

- Dual camera for cell phones
- Dual LCD monitor, digital camera displays



- **6GHz超高带宽**
- **WLCSP-36(2.06mm\*2.06mm)的超小封装**



# USB 3.1/3.0 Super-Speed 11 Gbps Switch– DIO3340

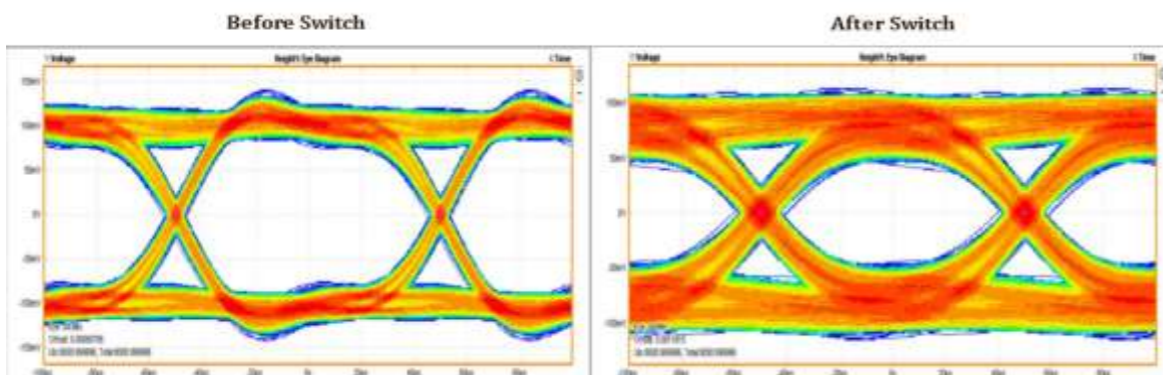


## Feature

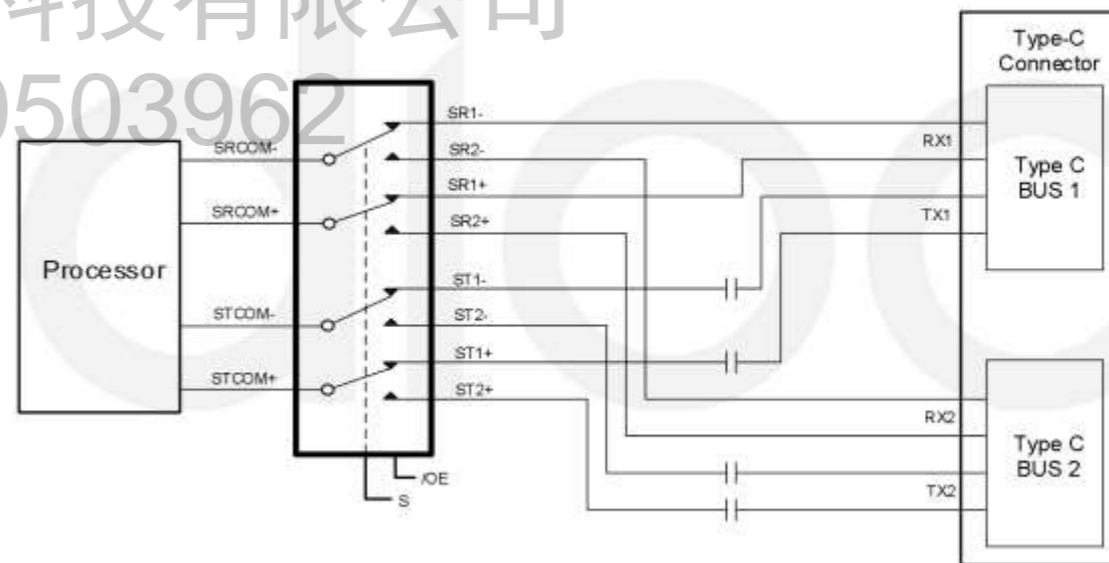
- Wide VDD input voltage range: 1.5 V to 5.0 V
- Up to 11 Gbps for applications under USB3.0, USB3.1, 10GE, Thunderbolt, and SAS3.0 protocols
- Bidirectional operation
- Bandwidth: 11 GHz (typical)
- -0.9 dB typical insertion loss at 2.5 GHz
- Low active power of 15  $\mu$ A typ. at 3.6 V VIN
- Low shutdown power of < 0.5  $\mu$ A Max.
- Low crosstalk: -55 dB at 2.5 GHz
- Low off isolation: -27 dB at 2.5 GHz
- Operation temperature range: -40 to 85  $^{\circ}$ C
- 2.5 kV HBM ESD Protection
- Packaged in QFN2\*3-18 and QFN2\*2-18

## Application

- Smartphones
- Tablets
- Notebooks



用PRBS15模式以10Gb/s的速度张开眼图



# USB 3.1/3.0 Super-Speed 11 Gbps Switch– DIO3340B

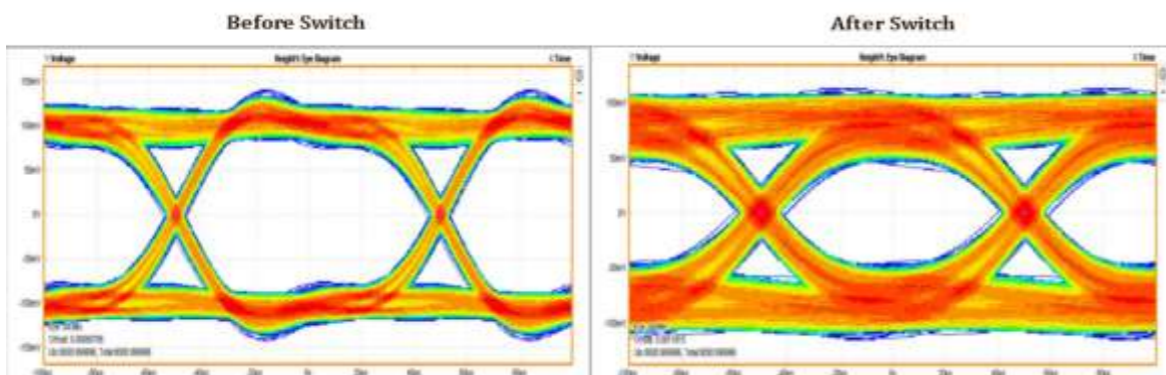


## Feature

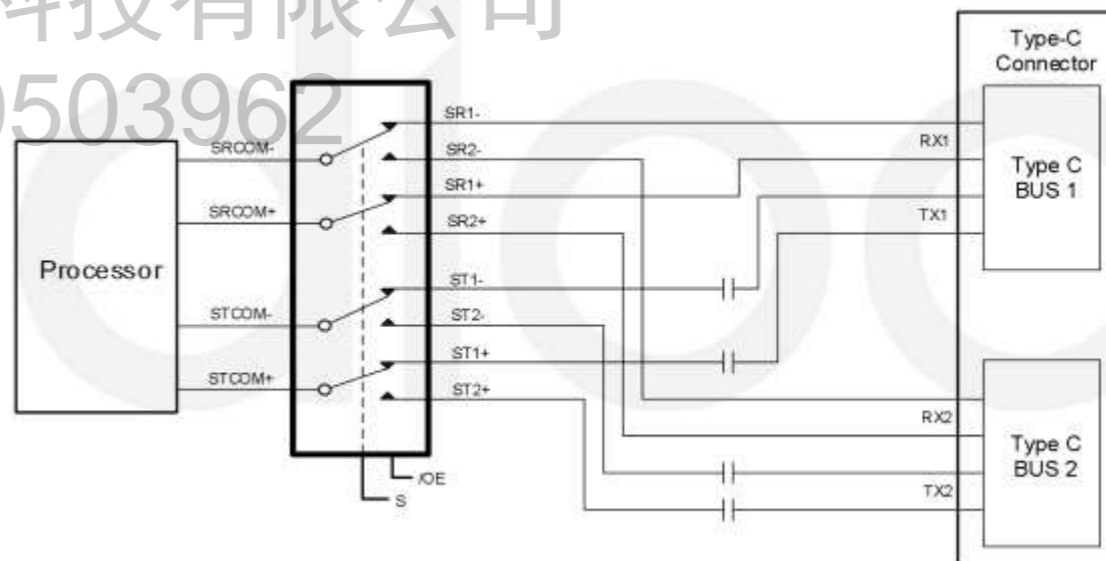
- Wide VDD Input Voltage Range: 1.5V to 5.0V
- Up to 11 Gbps for applications including USB3.0, USB3.1, 10GE, Thunderbolt, and SAS3.0
- Bi-directional operation
- Bandwidth: 11GHz(Typical)
- -0.9dB Typical Insertion Loss at 2.5GHz
- Low Active Power of 15 $\mu$ A Typ. @ 3.6V VDD
- Low Shutdown Power of < 0.5 $\mu$ A Max.
- Low Crosstalk: -54dB @ 2.5GHz
- Low Off Isolation: -21dB @ 2.5GHz
- Operation Temperature Range: -40 to 85 °C
- 4KV HBM ESD Protection
- Packaged in QFN2\*3-18

## Application

- Smartphones
- Tablets
- Notebooks



用PRBS15模式以10Gb/s的速度张开眼图



# USB 3.1/3.0 Super-Speed 11 Gbps Switch– DIO3350

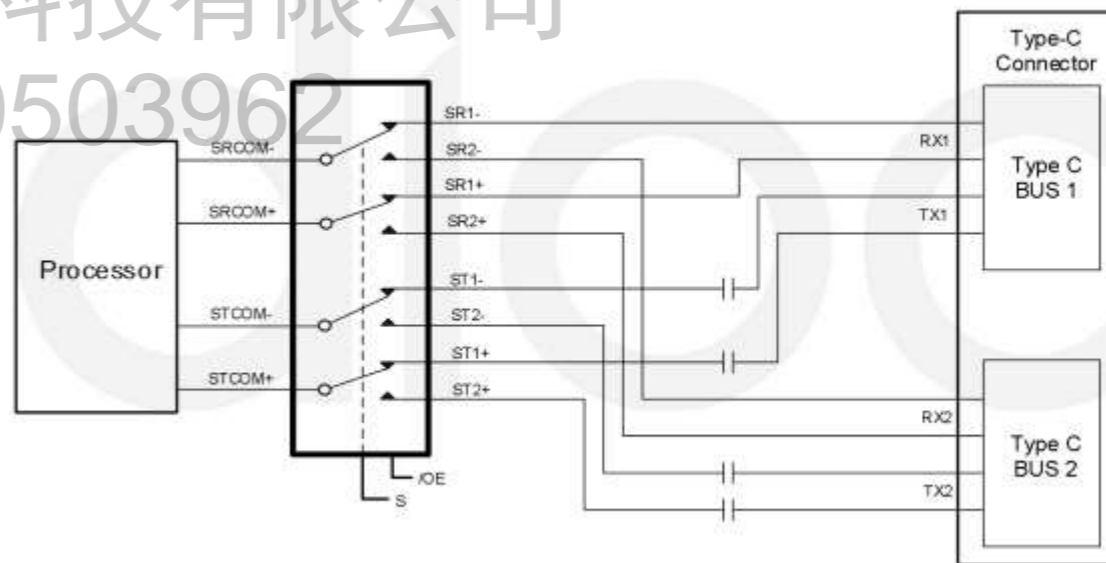


## Feature

- Wide VDD Input Voltage Range: 1.5V to 5.0V
- Up to 11 Gbps for applications including USB3.0, USB3.1, 10GE, Thunderbolt, and SAS3.0
- Bi-directional operation
- Bandwidth: 11GHz(Typical)
- -0.9dB Typical Insertion Loss at 2.5GHz
- Low Active Power of 15 $\mu$ A Typ. @ 3.6V VIN
- Low Shutdown Power of < 0.5 $\mu$ A Max.
- Low Crosstalk: -55dB @2.5GHz
- Low Off Isolation: -27dB @ 2.5GHz
- Operation Temperature Range: -40 to 85 °C
- $\pm$  4 kV HBM ESD protection
- Packaged in QFN2.6\*1.8-16, QFN2.5\*4.5-20 and QFN2\*2-18

## Application

- Smartphones
- Tablets
- Notebooks



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# DIO3350 VS HD3SS3202/HD3SS3212/TC7PC13212



Part Number	DIO3350	HD3SS3202	HD3SS3212	TC7PC13212
Input voltage	1.5-5.0V	3-3.6V	2.7-3.6V	3-3.6V
Quiescent Current	21uA	100uA	100uA	200uA
-3dB Bandwidth	11GHz	8GHz	8GHz	11.5GHz
Package	QFN2.6*1.8-16 QFN2*2-18 QFN2.5*4.5-20	QFN2.6*1.8-16	QFN2.5*4.5-20	QFN2.5*4.5-20

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# USB 3.1/3.0 Super-Speed 11 Gbps Switch– DIO3343

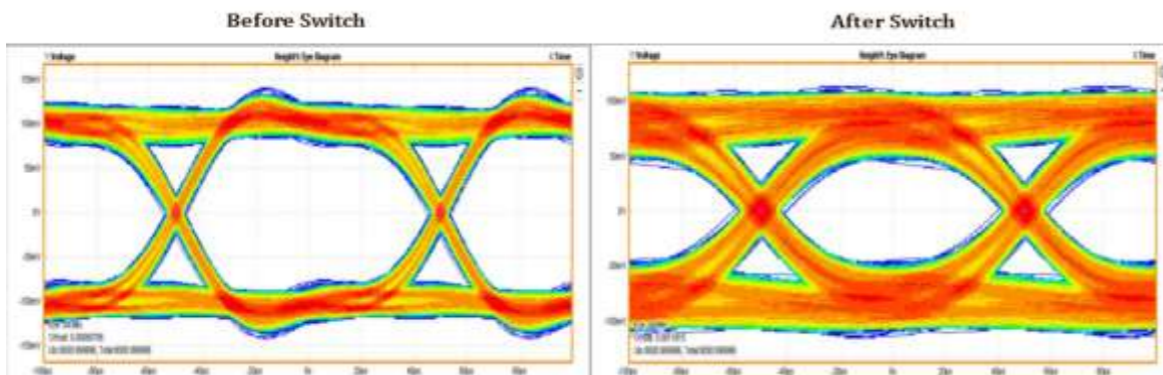
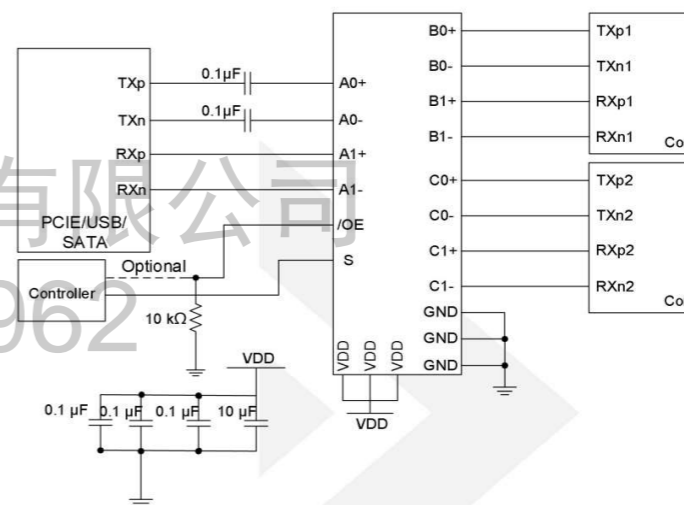


## Feature

- Wide VDD Input Voltage Range: 1.5V to 5.0V
- Up to 11 Gbps for applications including PCIE 3.0, USB 3.0, USB 3.1, 10GE, Thunderbolt, and SAS 3.0
- Bi-directional operation
- **Bandwidth: 11GHz(Typ.)**
- -0.97dB Typical Insertion Loss at 2.5GHz
- Low Active Power of 14.5 $\mu$ A Typ. @ 3.6V VDD
- Low Shutdown Power of < 0.5 $\mu$ A Max.
- Low Crosstalk: -58dB @ 2.5GHz
- Low Off Isolation: -27.5dB @ 2.5GHz
- Operation Temperature Range: -40 to 85 °C
- $\pm$ 2.5 kV HBM ESD protection
- Packages: QFN2.4\*1.6-16

## Application

- Servers
- Tablets
- Notebook



用PRBS15模式以10Gb/s的速度张开眼图

- **11Gbps 超高带宽，兼容多类通讯接口**
  - **USB3.0, USB3.1, 10GE, SAS等**
- **15uA超低静态电流**



# PCIE3.0 11Gbps, 2:1 Mux/DeMux Switch– DI3PCIE350

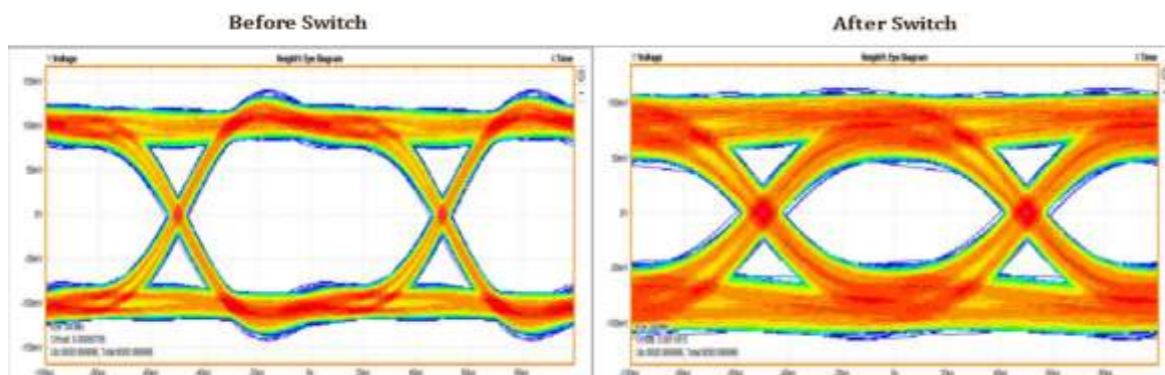


## Feature

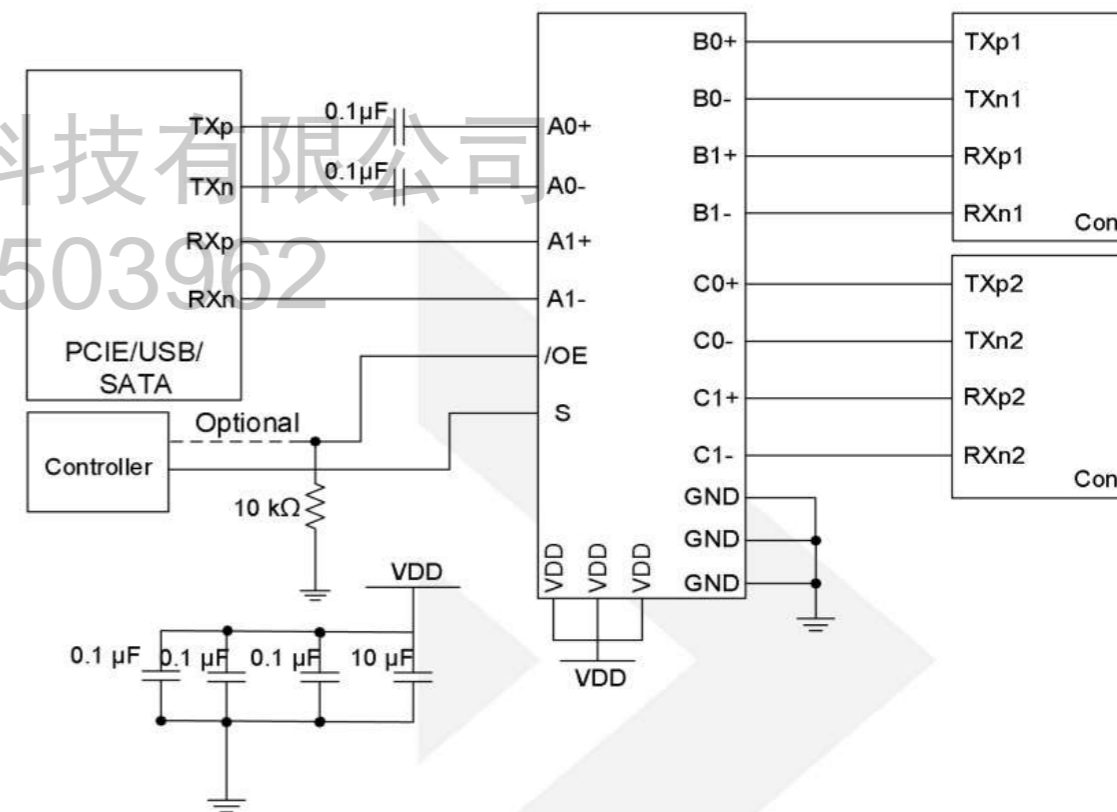
- Wide VDD Input Voltage Range: 1.5V to 5.0V
- Up to 11 Gbps for applications including PCIE 3.0, USB 3.0, USB 3.1, 10GE, Thunderbolt, and SAS 3.0
- Bi-directional operation
- **Bandwidth: 11GHz(Typical)**
- -0.9dB Typical Insertion Loss at 2.5GHz
- Low Active Power of 15 $\mu$ A Typ. @ 3.6V VDD
- Low Shutdown Power of < 0.5 $\mu$ A Max.
- Low Crosstalk: -55dB @ 2.5GHz
- Low Off Isolation: -27dB @ 2.5GHz
- Operation Temperature Range: -40 to 85 °C
- $\pm$ 4 kV HBM ESD protection
- Packages: QFN2.5\*4.5-20 and QFN2\*2-18

## Application

- Servers
- Tablets
- Notebook



用PRBS15模式以10Gb/s的速度张开眼图



# USB3.1 and USB2.0 Combo Switch– DIO3352

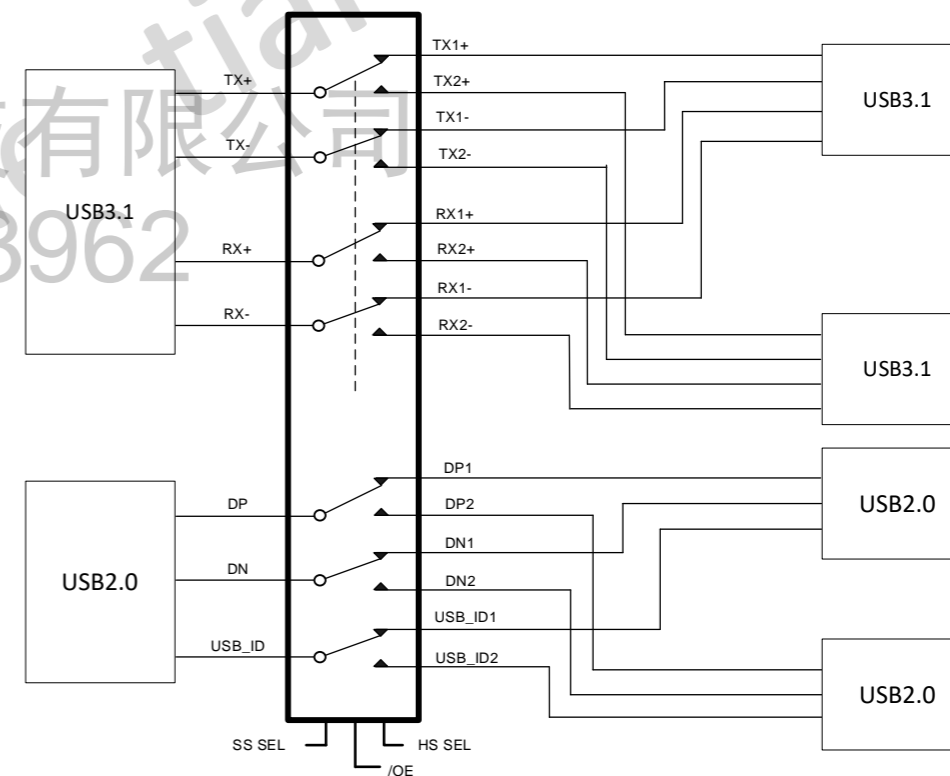


## Feature

- Wide VDD Input Voltage Range: 1.5V to 5.0V
- Operating VCC range: 2.3V to 5.5V
- USB3.1 Switch:
  - Bi-directional operation
  - Bandwidth(-3 dB): 11 GHz (typ.)
  - -0.9 dB typical insertion loss at 2.5 GHz
  - Low crosstalk: -38 dB at 2.5 GHz
  - Low off isolation: -25 dB at 2.5 GHz
  - $\pm 4$  kV HBM ESD protection
- USB2.0 and USB\_ID Switch:
  - Bi-directional operation
  - Bandwidth(-3 dB): 1.8GHz (typ.)
  - Low crosstalk: -42 dB at 240 MHz
  - Low off isolation: -37 dB at 240 MHz
  - $\pm 6$  kV HBM ESD protection
- Operating temperature range: -40°C to 85°C

## Application

- Commercial Display
- The system has both USB3.1 signal switching requirements and USB2.0 signal switching requirements



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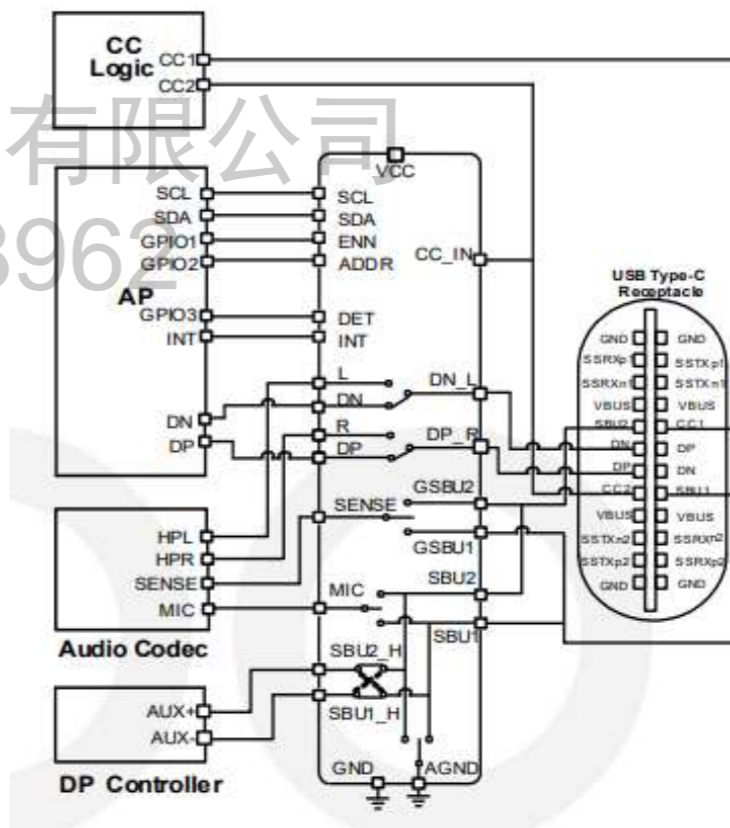
# USB Type-C Analog Audio Switch with Protection Function– DIO4480

## Feature

- Power Supply Voltage Range : 2.7V to 5.5V
- USB2.0 High Speed Switch:
  - -3dB bandwidth: 1.0GHz
  - 4.6Ω RON Typical
- Audio Switch
  - Negative Rail Capability: -3.6V to 3.6V
  - THD+N=-110dB, 1VRMS, f=20Hz~20kHz, 32Ω Load
  - -3dB bandwidth: 900MHz
  - 1.2Ω RON Typical
- High Voltage Protection
  - +20V DC Tolerance on USB Type-C Pins
  - ±25V Surge Capable on USB Type-C Pins
  - ±8kV HBM ESD
- Over Voltage Protection:
  - DP/R, DN/L VTH = 4.8V (Typ)
  - SBU1/SUB2/GSBU1/GSBU2 VTH = 4.5V (Typ)
- Support OMTP, CTIA and 3-Pole audio jack Pinout
- 25-Ball WLCSP Package (2.24mm\*2.28mm)

## Application

- Mobile Phone
- Tablet
- Notebook PC
- Media Player



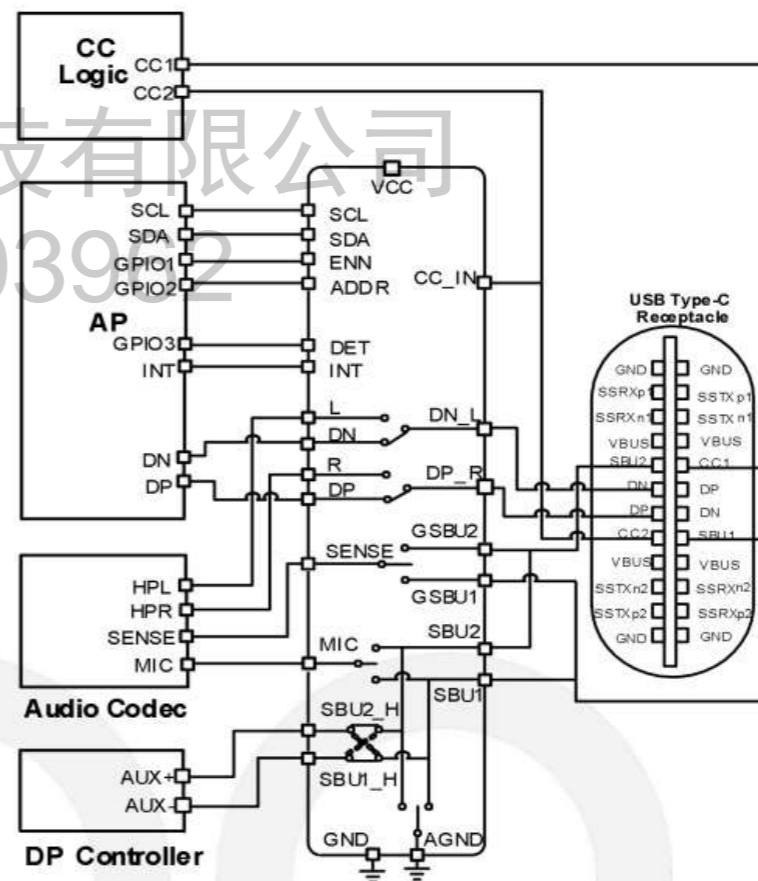
# USB Type-C Analog Audio Switch with Protection Function– DIO4481/B

## Feature

- Power Supply Voltage Range : 2.7V to 5.5V
- Version information:
  - DIO4481: Default: DP\_R~DP; DN\_L~DN; turn on
  - DIO4481B: Default: DP\_R~DP; DN\_L~DN; SBU1~SBU1\_H; SBU2~SBU2\_H turn on
- USB2.0 High Speed Switch:
  - -3dB bandwidth: 970MHz ; - 4.3Ω RON Typical
- Audio Switch
  - Negative Rail Capability: -3.6V to 3.6V
  - THD+N=-110dB, 1VRMS, f=20Hz~20kHz, 32Ω Load
  - -3dB bandwidth: 830MHz ; - 1.2Ω RON Typical
- High Voltage Protection
  - +20V DC Tolerance on USB Type-C Pins
  - +25V Surge Capable on USB Type-C Pins
  - -20 V surge capable on USB Type-C pins
  - ±8kV HBM ESD
- Over Voltage Protection:
  - DP/R, DN/L VTH = 4.8V (Typ)
  - SBU1/SUB2/GSBU1/GSBU2 VTH = 4.5V (Typ)
- Support OMTP, CTIA and 3-Pole audio jack Pinout
- 25-Ball WLCSP Package (2.24mm\*2.28mm)

## Application

- Mobile Phone
- Tablet
- Notebook PC
- Media Player



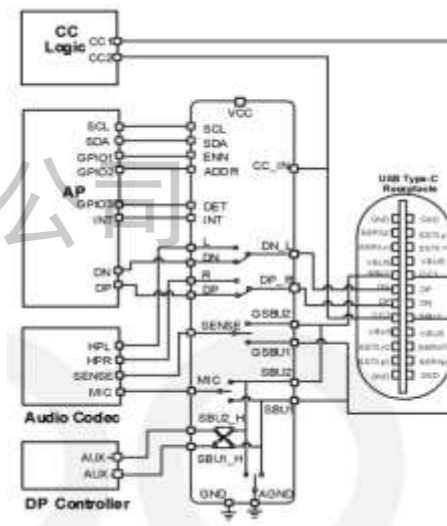
# USB Type-C Analog Audio Switch with Protection Function– DIO4482/B

## Feature

- Power Supply Voltage Range : 2.7V to 5.5V
- Version information:
  - DIO4482: Default: DP\_R~DP; DN\_L~DN; turn on
  - DIO4482B: Default: DP\_R~DP; DN\_L~DN; SBU1~SBU1\_H; SBU2~SBU2\_H turn on
- USB2.0 High Speed Switch:
  - -3dB bandwidth: 970MHz ; - 4.3Ω RON Typical
- Audio Switch
  - Negative Rail Capability: -3.6V to 3.6V
  - THD+N=-110dB, 1VRMS, f=20Hz~20kHz, 32Ω Load
  - -3dB bandwidth: 830MHz ; - 1.2Ω RON Typical
- High Voltage Protection
  - +20V DC Tolerance on USB Type-C Pins
  - +25V Surge Capable on USB Type-C Pins
  - -20 V surge capable on USB Type-C pins
  - ±8kV HBM ESD
- Over Voltage Protection:
  - DP/R, DN/L VTH = 4.8V (Typ)
  - SBU1/SUB2/GSBU1/GSBU2 VTH = 4.5V (Typ)
- Support OMTP, CTIA and 3-Pole audio jack Pinout
- 25-Ball WLCSP Package (2.24mm\*2.28mm)

## Application

- Mobile Phone
- Tablet
- Notebook PC
- Media Player



- **USB2.0通道带宽可高达970MHz**
- **音频通道带宽THD可高达-110dB**
- **高压保护**
  - **20V的直流耐压保护**
  - **USB Type-C 引脚可承受 +25V/-20V浪涌**
- **ADC湿度检测功能**





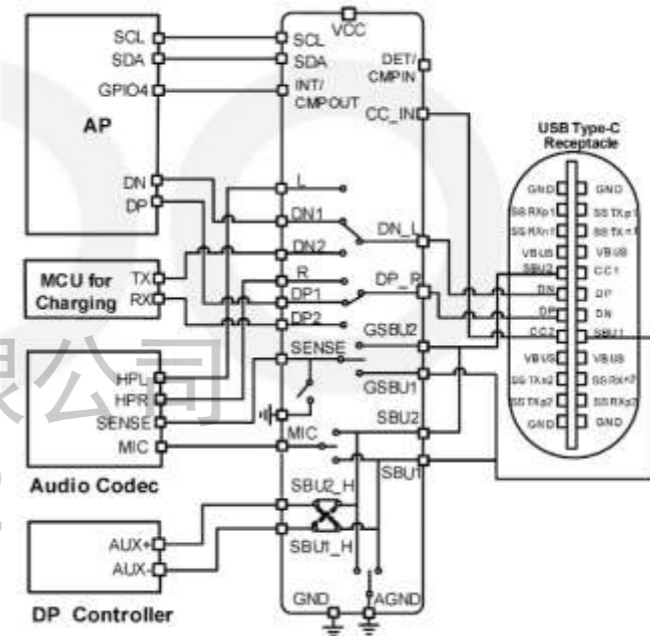
# USB Type-C Analog Audio Switch with Protection Function– DIO4485

## Feature

- Power supply voltage range: 2.7 V to 5.5 V
- Version information:- DIO4485: Default: DP\_R~DP1; DN\_L~DN1; SBU1~SBU1\_H;SBU2~SBU2\_H turn on
  - DIO4485B: default: DP\_R~DP1; DN\_L~DN1 turn on
- USB 2.0 switch -3dB Bandwidth: 1.05GHz
- Audio switch:
  - Negative rail capability: -3.6 V to 3.6 V
  - THD+N = -110 dB, 1 VRMS, - f = 20 Hz ~ 20 kHz, 32  $\Omega$  load
  - -3 dB bandwidth: 940 MHz
- UART switch -3 dB bandwidth: 800 MHz
- High voltage protection
  - +20 V DC tolerance on USB Type-C pins
  - $\pm 25$  V surge capable on USB Type-C pins
- Over voltage protection: - DP\_R, DN\_L, SBU1/SUB2/GSBU1/GSBU2 VTH = 4.4 V (default), 4.4 V ~ 5.0 V configurable, 0.2 V/step
- Support OMTP, CTIA and 3-Pole audio jack pinout
- **Built-in moisture detection function**, including moisture resistor and moisture voltage mode. Support single-pin mode and multi-pin mode. Support polling mode, and polling time is I2C configurable
- Support 1.2V and 1.8V I/O Logic, WLCSP-25(2.24 mm \*2.28 mm)

## Application

- Mobile Phone
- Tablet
- Notebook PC
- Media Player



- **具有USB2.0、音频和UART三通道模拟开关**
- **USB2.0通道带宽可高达1.05GHz**
- **音频通道带宽THD可高达-110dB**
- **高压保护**
  - **20V的直流耐压保护**
  - **USB Type-C 引脚可承受  $\pm 25$ V浪涌**
- **支持轮询湿度检测功能保护 (CC\_IN, DP\_R, DN\_L, SBU1 and SBU2)**

# USB 2.0 and Audio/USB/UART Switch– DIO3202A



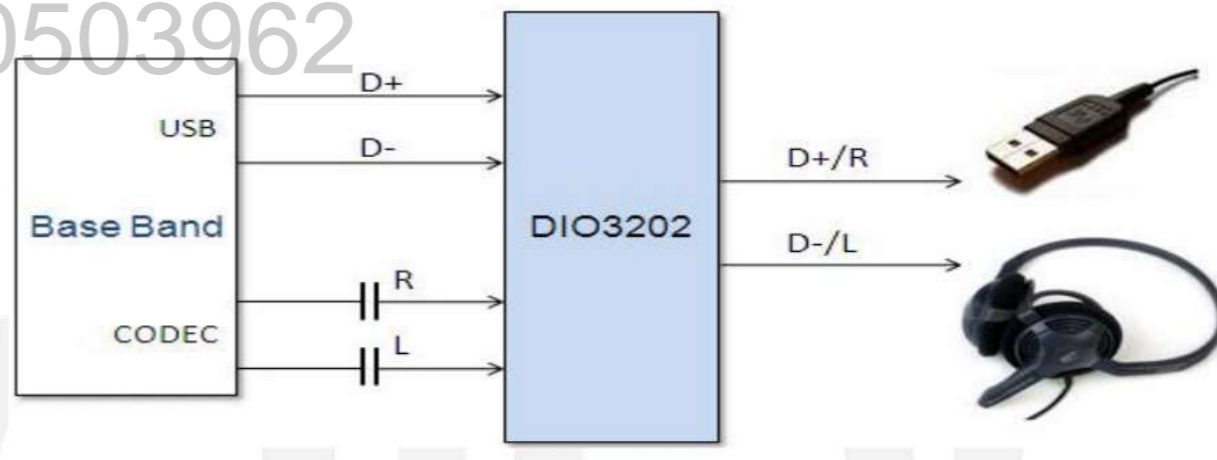
## Feature

- Low RON Audio/USB analog switch
- Low USB CON: 5 pF
- Negative signal swing capable
- Low audio distortion
- USB switch -3 dB bandwidth: 720 MHz
- High crosstalk and off-isolation
- Voltage supply operation: 2.7 to 5.5 V
- Three green packaged: DQFN-10, QFN-10, and MSOP-10

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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# USB 2.0 and Audio/USB/UART Switch– DIO3202B



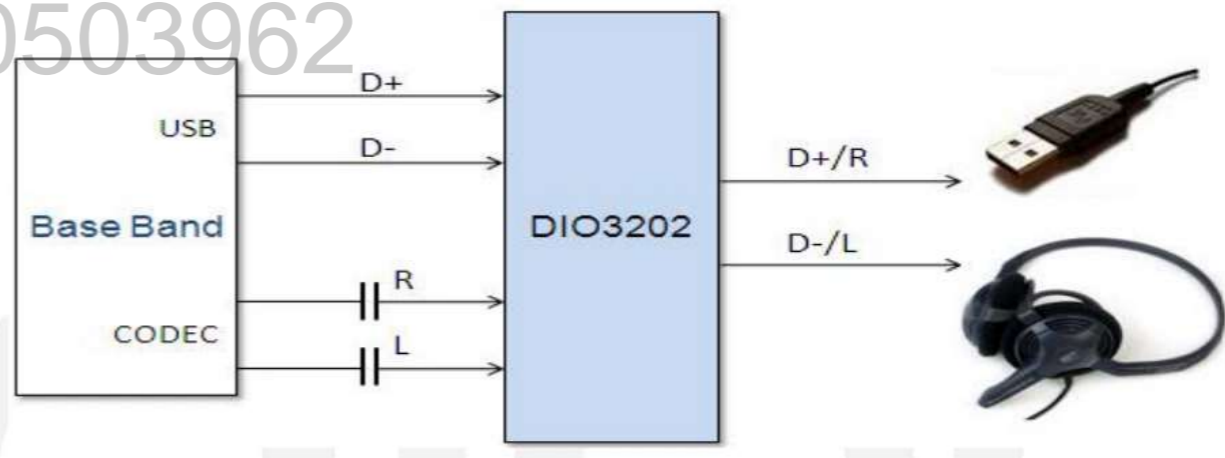
## Feature

- Low RON Audio/USB analog switch
- Low USB CON: 5 pF
- Negative signal swing capable
- Low audio distortion
- USB switch -3 dB bandwidth: 720 MHz
- High crosstalk and off-isolation
- Voltage supply operation: 2.7 to 5.5 V
- Three green packaged: DQFN-10

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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# USB 2.0 and Audio/USB/UART Switch– DIO32020



## Feature

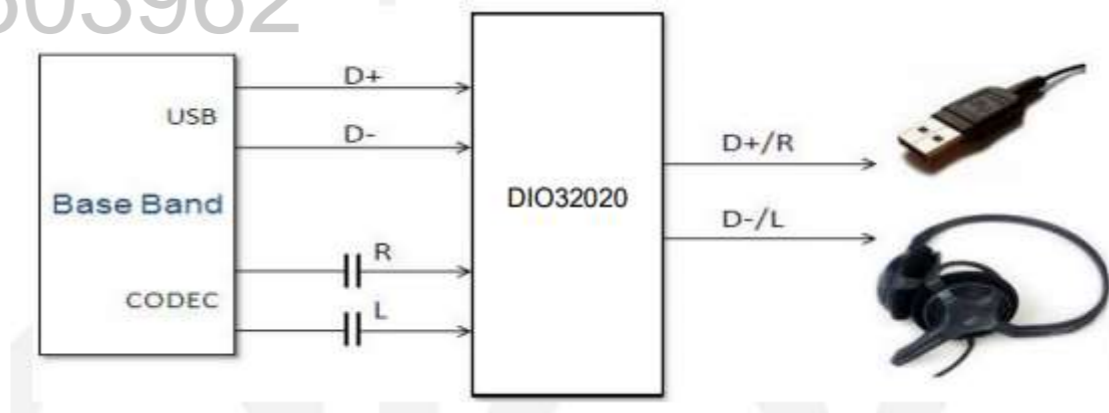
- Low RON audio/USB analog switch
- Low USB CON: 7pF
- Negative signal swing capable
- Low audio distortion
- USB switch -3 dB bandwidth: **1100 MHz**
- THD+N = **-100 dB**, 1 VRMS ; - f = 1kHz, 32 Ω load
- High crosstalk and off-isolation
- Voltage supply operation: 2.7 to 5.5 V
- Three green packages: DQFN-10, QFN-10, MSOP-10

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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- **USB2.0/音频通道模拟开关**
- **USB2.0通道带宽可高达1100MHz**
- **音频通道带宽THD可高达-110dB**



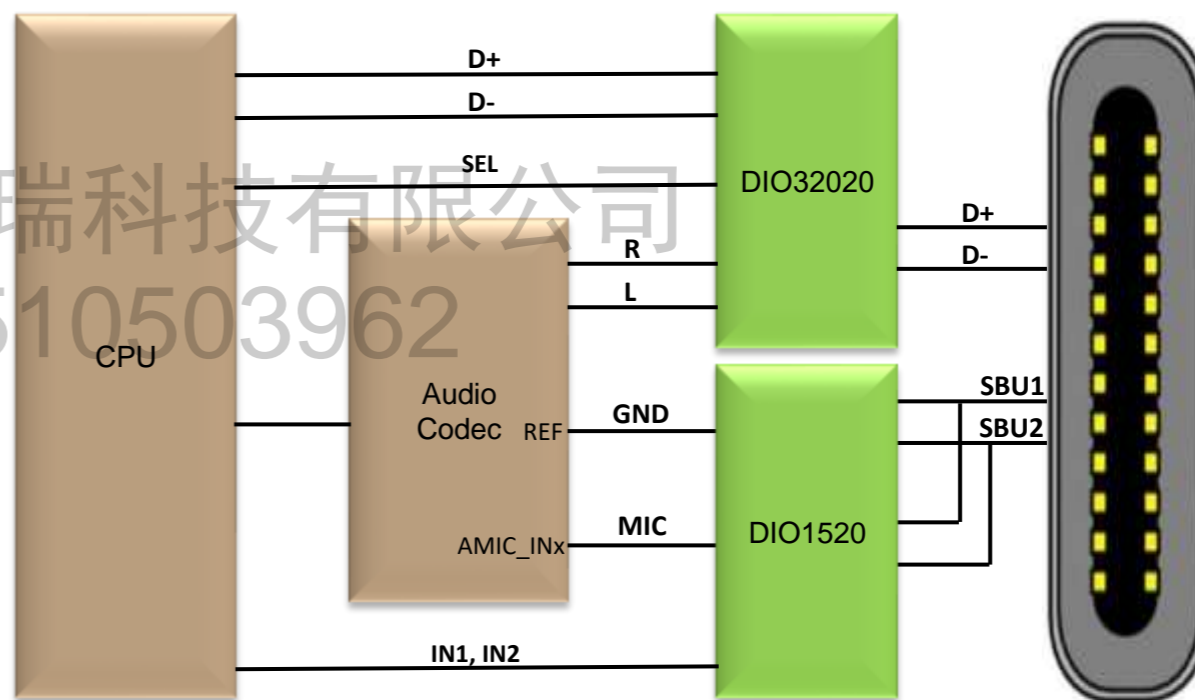
# DIO32020+DIO1520方案



由于手机检测Type-C耳机是通过CC检测实现的，所以当CC1和CC2都检测到Ra时，CPU知道有Type-C耳机插入，然后通过GPIO控制DIO32020将Type-C的DP/DM打到Audio的左右声道、控制DIO1520将SBU1信号和SBU2信号打到Sense信号和MIC信号。

Table 4-5 DFP Perspective

CC1	CC2	State
Open	Open	Nothing attached
Rd	Open	UFP attached
Open	Rd	
Open	Ra	Powered cable/No UFP attached
Ra	Open	
Rd	Ra	Powered cable/UFP attached
Ra	Rd	
Rd	Rd	Debug Accessory Mode attached (Appendix B)
Ra	Ra	Audio Adapter Accessory Mode attached (Appendix A)



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# USB 2.0 and Audio/USB/UART Switch– DIO3203

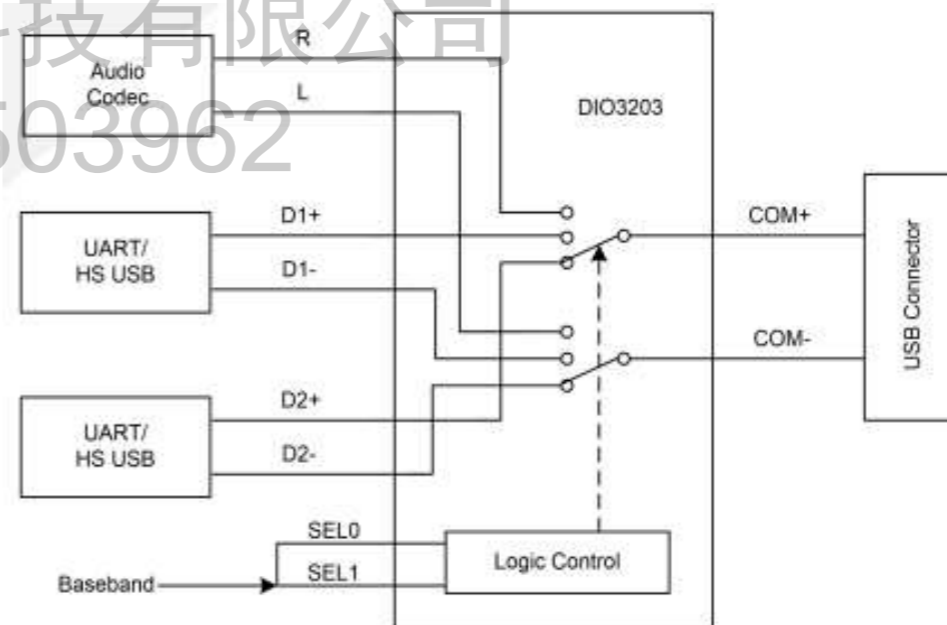


## Feature

- Low RON at USB channel:
- Low USB CON: 6.8 pF
- -1.4 V negative signal swing capable
- USB switch -3 dB bandwidth: 720 MHz
- High crosstalk and off-isolation
- Voltage supply operation: 2.7 V to 5.5 V
- 5.5 V tolerance on COM pin
- Green packaged: TQFN-16 and DQFN-12
- 4 kV HBM ESD rating, 2 kV CDM ESD rating

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals



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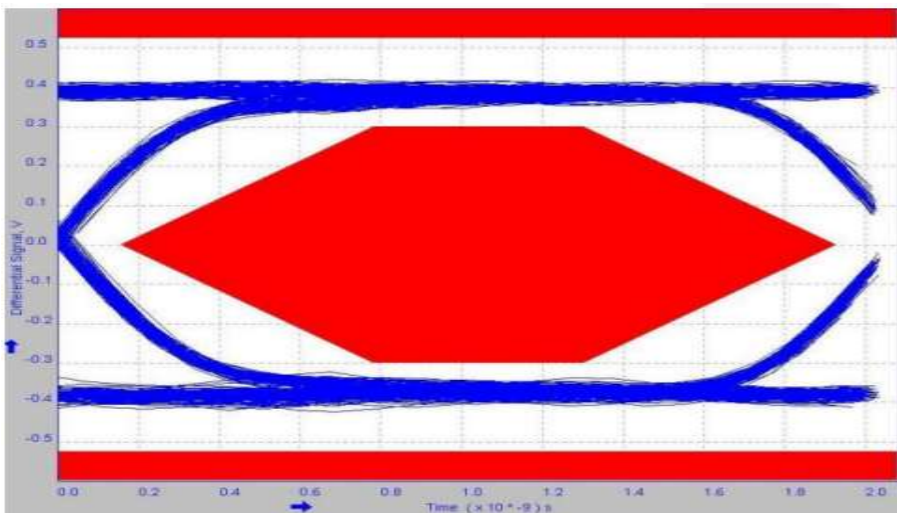


# USB 2.0 and MHL 5.8GHz Switch– DIO3000



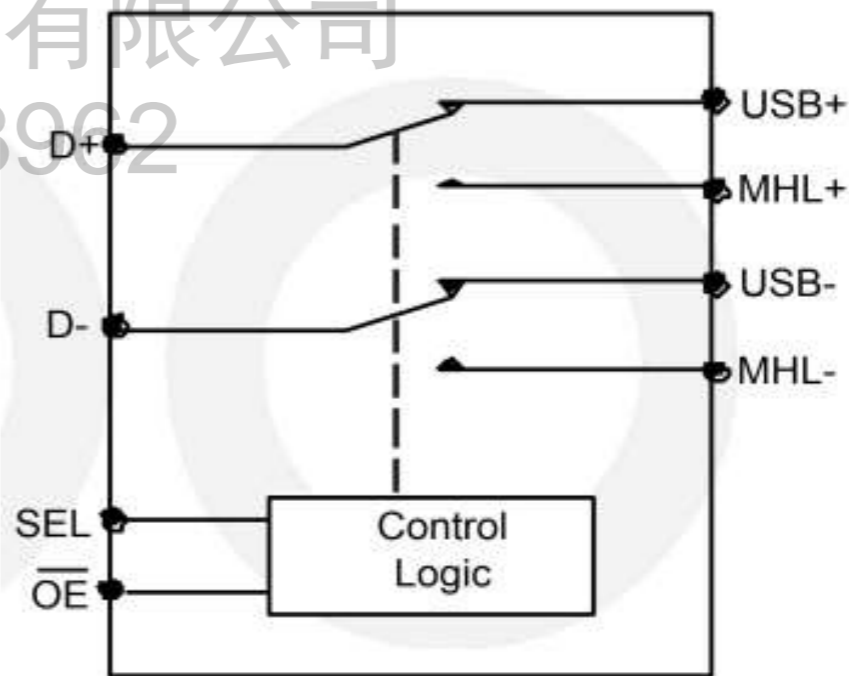
## Feature

- Wide VCC input voltage range: 2.3 V to 5.5 V
- USB channel:  
Bandwidth (-3 dB): 5.8 GHz RON (typ.): 4.6  $\Omega$  CON (typ.): 1.2 pF
- Mobile high definition link (MHL) channel:  
Bandwidth (-3 dB): 5.5 GHz RON (typ.): 5.3  $\Omega$  CON (typ.): 1.4 pF
- Ultra-low power consumption: 25  $\mu$ A (typ.)
- Additional features:  
Power-off protection: low current  
Leakage in powered-down state (VCC = 0 V)  
Overvoltage tolerance (OVT) on all I/O pins up to 5.5 V
- Packaged in QFN2\*1.5-10



## Application

- Portable instrumentation
- Digital still cameras
- Tablets
- Mobile phone



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# Low-Power, USB 2.0 High-Speed Switch– DIO3001

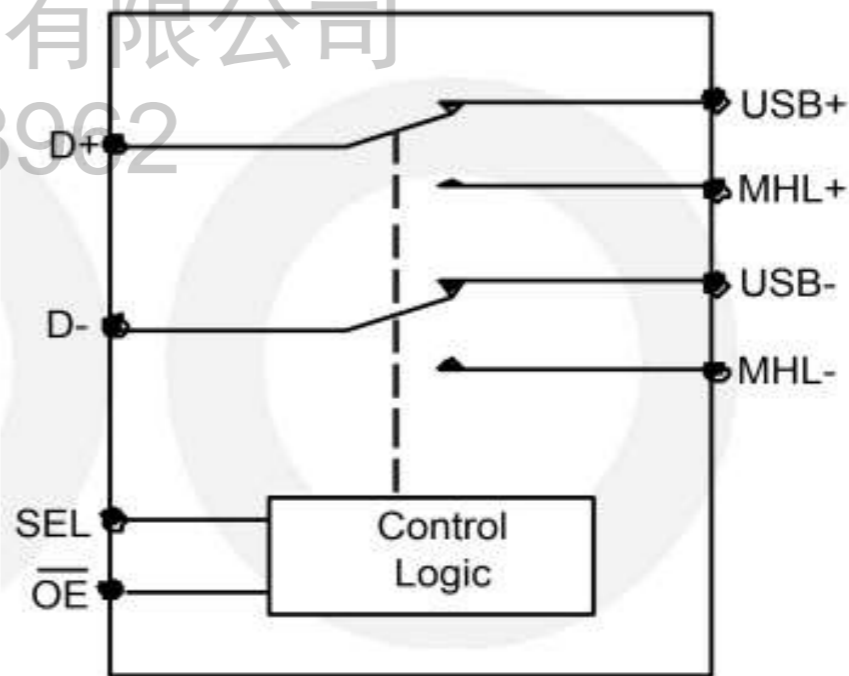
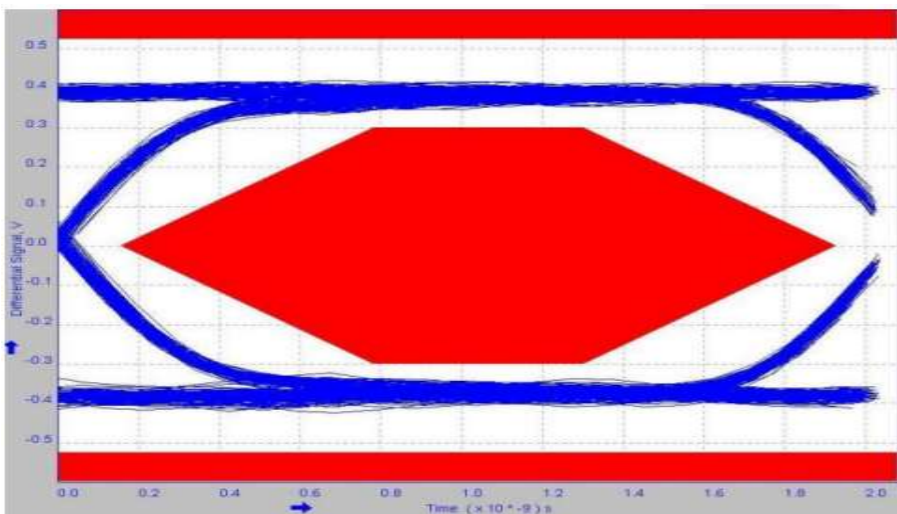


## Feature

- Super high bandwidth (-3 dB): > 1.8 GHz
- VCC operation at 2.3 V to 5.5 V
- Low CON: 5 pF (typ.)
- Low RON: 5.5  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 0.5  $\mu$ A (typ.) at VCNTL = 1.8 V, VCC = 3.6 V
- Packaged in Green QFN2\*1.5-10
- $\pm 6$  kV HBM ESD on all pins
- Power-Off/On protection on common ports D+/D- pins tolerance up to 5.5 V

## Application

- Telematics control units
- Automotive cluster displays
- Front and rear came



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# USB2.0 Switch + Comparator with ADJ OVP– DIO3480AD

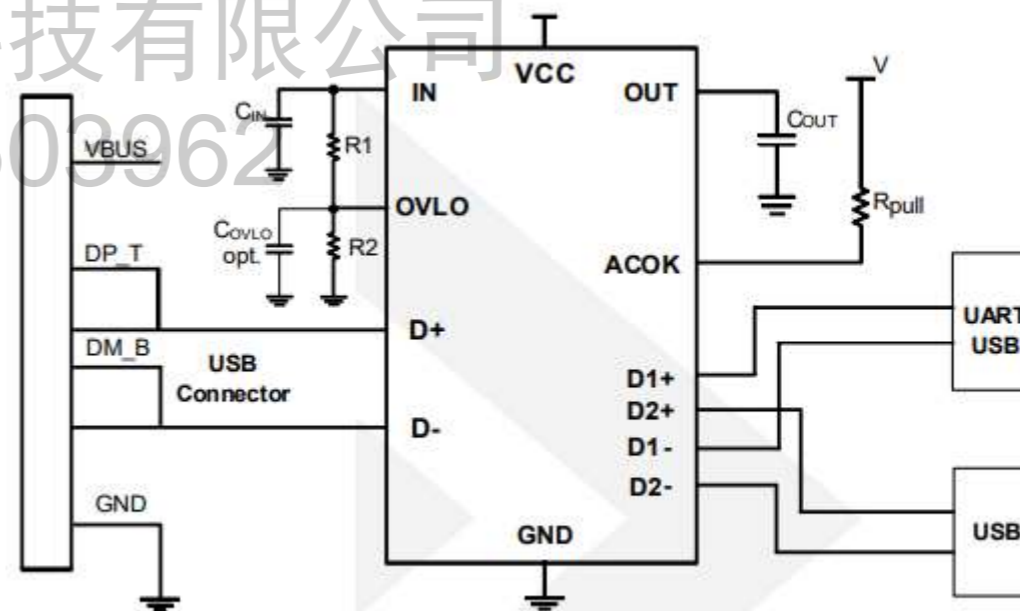


## Feature

- DP/DM Dual SPDT Switch:  
Supply Range 2.3V to 5.5V;  
6V to 21V Overvoltage Protection (OVP) on Common Pins;  
Low RON of 9Ω Maximum;  
BW of 1.2GHz Typical; CON of 4pF Typical
- Over Voltage Protection Load Switch:  
Low Power Disable Mode; 1.8V Compatible Logic Inputs;  
ESD (HBM) pass 2000V; Surge Protection: IEC 61000-4-5: >100V;  
Over-Temperature Protection (OTP);  
ESD Protection:  
IEC 61000-4-2 Air Discharge: > 15kV  
IEC 61000-4-2 Contact Discharge: > 8kV  
+/- 100V EOS Protection
- Comparator:  
Ultra Low Power Consumption: 0.3μA (TYP)  
Wide Supply Voltage Range: 2.3V to 5.5V
- Package: 24-Ball WLCSP, 4\*6 Array, 0.4mm Pitch

## Application

- Mobile Handsets and Tablets



# 3:1 USB 2.0 High-Speed (480MHz) USB Switch– DIO3303



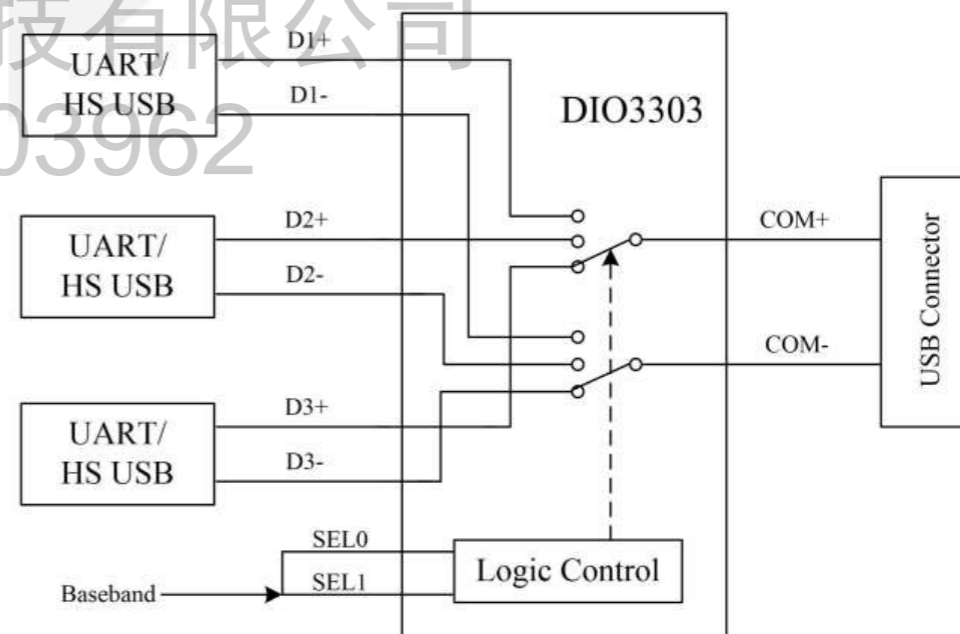
## Feature

- Low RON at USB channel:
- Low USB CON: 6.8 pF
- USB switch -3 dB bandwidth: 720 MHz
- High crosstalk and off-isolation
- Voltage supply operation: 2.7 V to 4.4 V
- 5.25 V tolerance on COM pin
- Green packaged: DQFN-12
- 4 kV HBM ESD rating, 2 kV CDM ESD rating

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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# 4:1/1:4 (0.8 $\Omega$ ) Hi-Fi Audio Switch with Both Negative Swing and USB 2.0 Signal Handling Capability– DIO3476

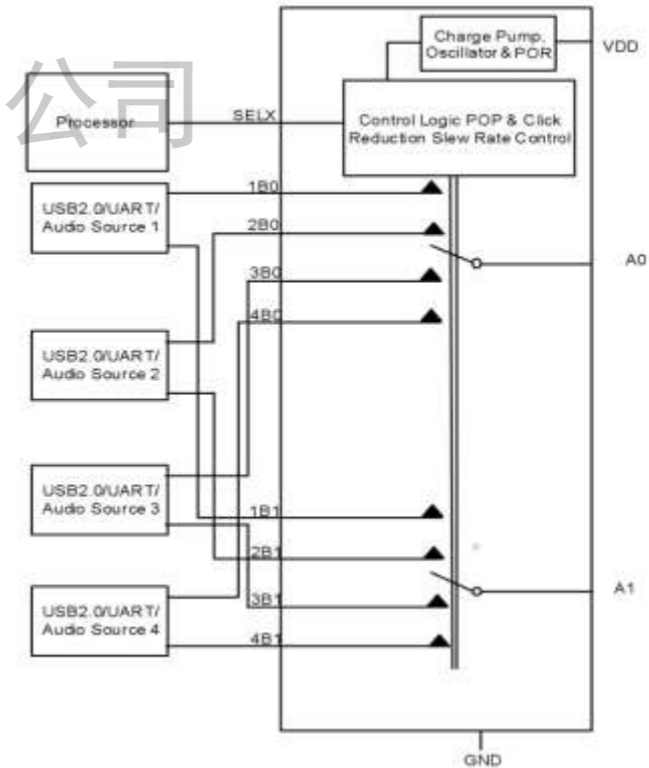


## Feature

- Power supply voltage range: 1.65 to 5.5 V
- RON = 0.8  $\Omega$  (typ.) at 3.3 V
- THD+N = -110 dB; 2 VRMS, 600  $\Omega$  load; f = 1 kHz
- XTALK = -120 dB at 1 VRMS, 50  $\Omega$  load; f = 1 kHz
- Off isolation = -110 dB at 1 VRMS, 50  $\Omega$  load; f = 1 kHz
- Power-off protection on common ports
- Each channel can handle USB 2.0, UART or negative swing (-3 V) audio signal
- Package: QFN 2\*3-18

## Application

- Mobile phones
- Tablets
- Notebook PCs
- Media players
- Docking stations
- TVs
- Set-top boxes
- LCD monitor



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# Dual SPDT Switch with 20V Overvoltage Protection– DIO3402

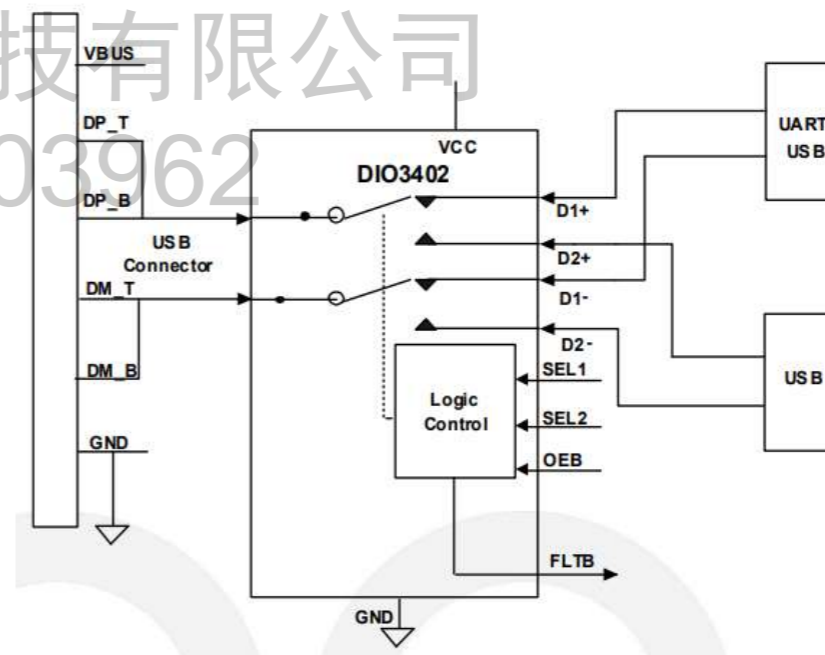


## Feature

- Operating Voltage Range: 2.3V to 5.5V
- Differential 2:1 or 1:2 Switch/Multiplexer or Flexible Dual Single Ended Cross Switch
- VCC=0V Powered Off Protection
- Low RON: 5.2Ω
- BW: 1.5GHz
- Overvoltage Protection (OVP) on Common Pins up to 20V DC
- Surge Protection Up to 35V
- ESD (HBM): 4kV
- Temperature Range of -40 to 85°C
- WLCSP-12 Package

## Application

- Mobile
- PC/Notebook
- Tablet
- USB Type-C



# Dual SPDT Switch with 20V Overvoltage Protection– DIO5000

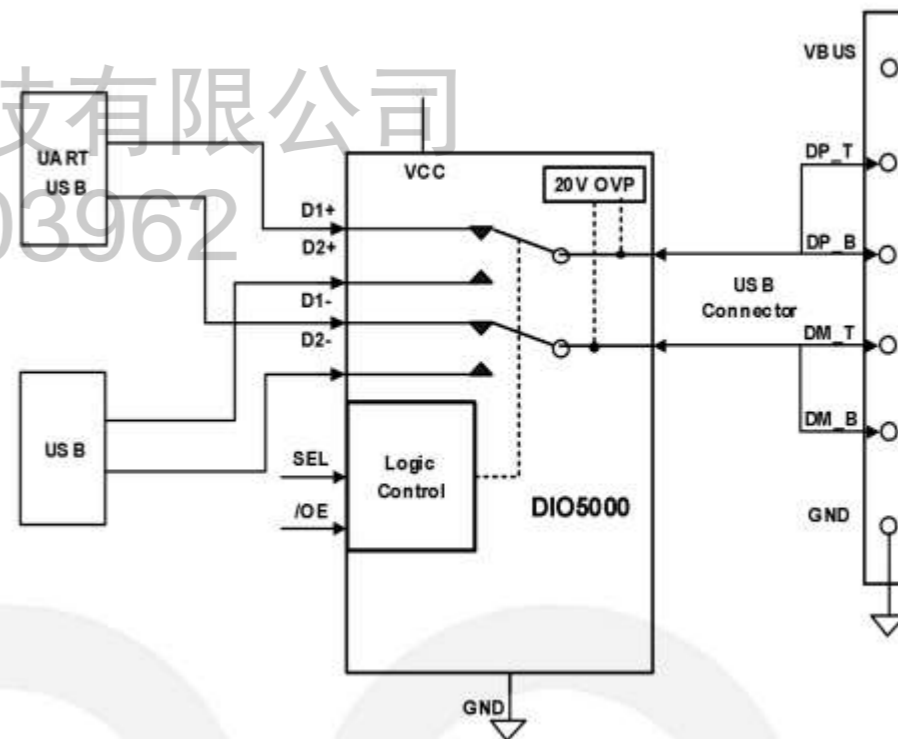


## Feature

- Operating Voltage Range: 2.3V to 5.5V
- Differential 2:1 or 1:2 Switch/Multiplexer or Flexible Dual Single Ended Cross Switch
- VCC=0V Powered Off Protection
- Low RON: 5.5Ω
- BW: 1.5GHz
- CON: 4.5 pF
- Overvoltage Protection (OVP) on Common Pins up to 20V DC
- Temperature Range of -40 to 85°C
- Packages: QFN2\*1.5-10 and DQFN1.8\*1.4-10

## Application

- Mobile
- PC/Notebook
- Tablet
- USB Type-C



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# Dual SPDT Switch with 20V Overvoltage Protection– DIO5008

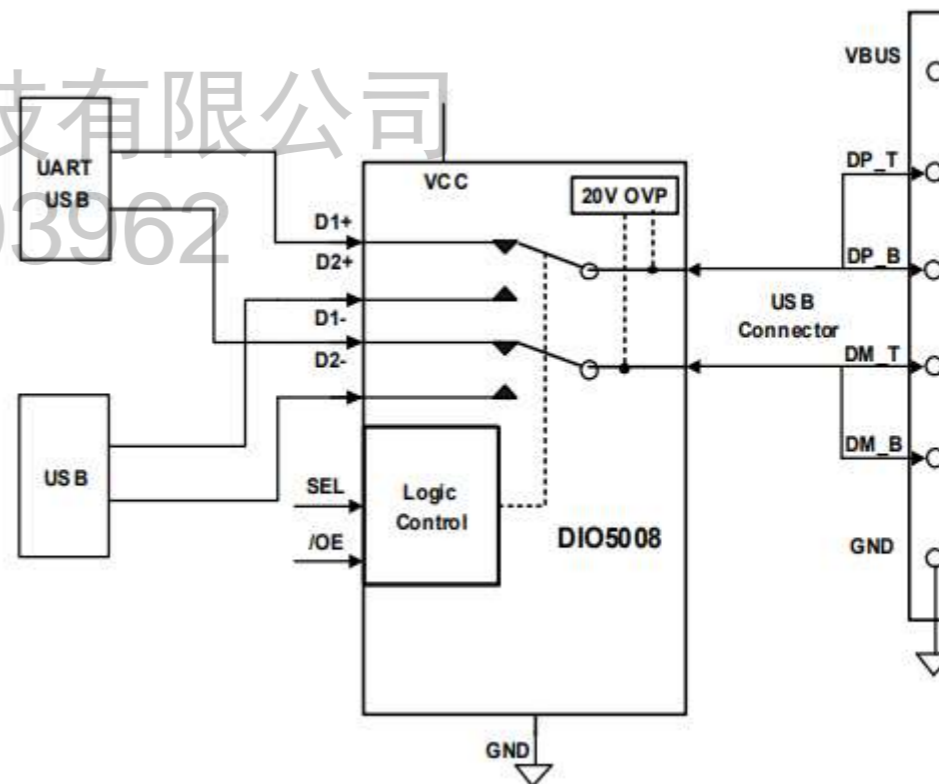


## Feature

- Operating Voltage Range: 2.3V to 5.5V
- Differential 2:1 or 1:2 Switch/Multiplexer
- VCC=0V Powered Off Protection
- Low RON: 5.5Ω
- BW: 1.5GHz
- CON: 4.5 pF
- Overvoltage Protection (OVP) on Common Pins up to 20V DC
- Temperature Range of -40 to 85°C
- Packages: QFN2\*1.5-10 and DQFN1.8\*1.4-10

## Application

- Mobile
- PC/Notebook
- Tablet
- USB Type-C



# High-Bandwidth and Low on-Resistance Analog Switch– DIO3212



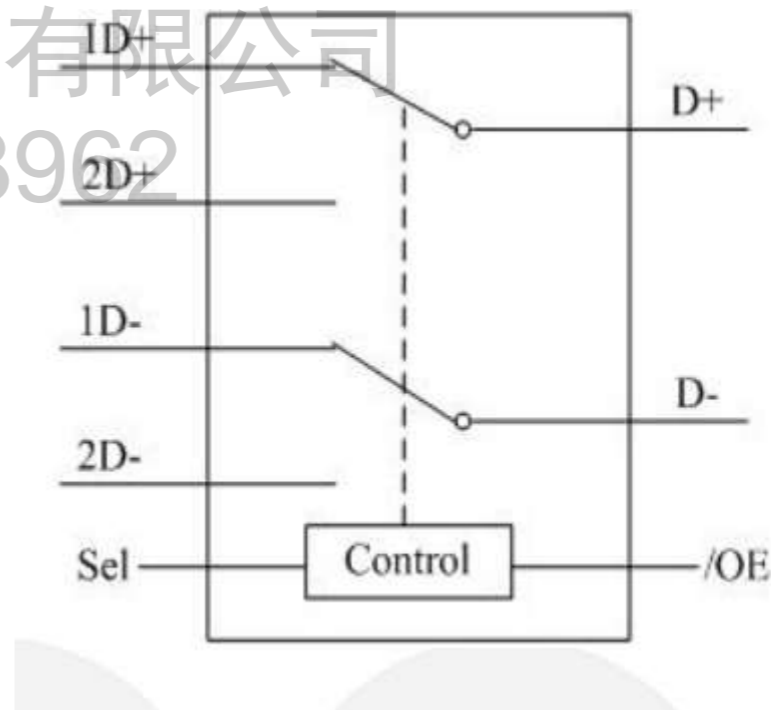
## Feature

- Overvoltage tolerance (OVT)
- Operating voltage: 2.3 V to 5 V
- Low on-resistance: 5.7  $\Omega$  (typ.) at 3.0 VCC
- High off-isolation
- Low crosstalk
- Low CON: 5 pF
- Low power consumption
- Wide -3 dB bandwidth
- Low distortion
- Green packaged: QFN10, MSOP10 and DFN10
- 2 kV CDM ESD Rating 5.5 kV I/O to GND HBM ESD Rating

## Application

- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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# Low-Power, USB 2.0 High-Speed Switch– DIO32220

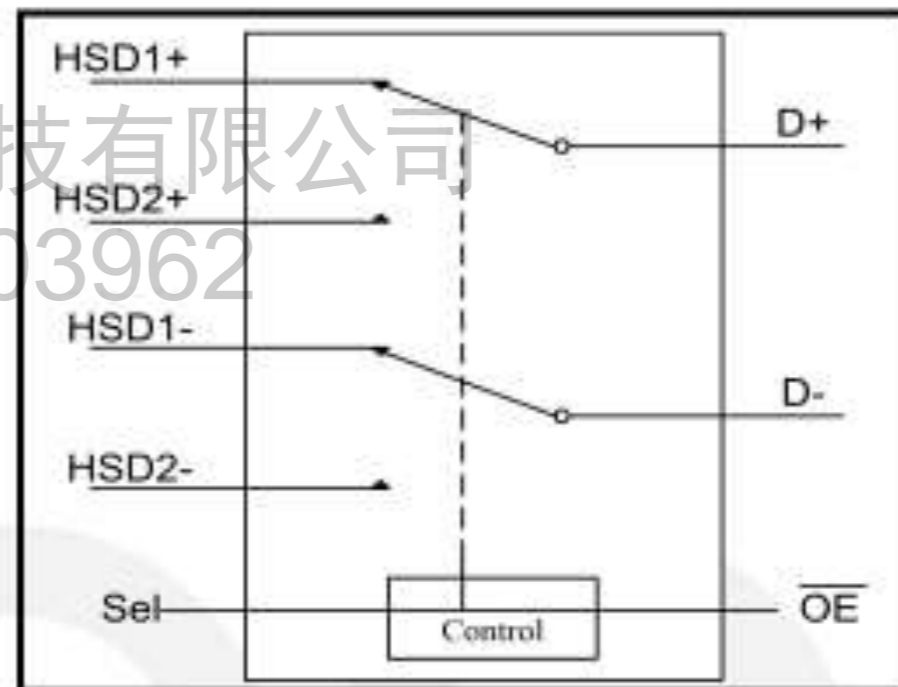


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 3 pF typical
- Low RON: 6  $\Omega$  typical
- Low power consumption: 1  $\mu$ A maximum
- Low ICCT : 8  $\mu$ A max at VIN = 1.8 V, VCC = 3.6 V
- Packaged in Green MSOP-10, DQFN-10 and QFN-10
- 6 kV HBM ESD on all pins
- Power-off/on protection on common ports D+/D- pins tolerance up to 5.5 V

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- STB/LCD TVs



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# Low-Power, USB 2.0 High-Speed Switch– DIO32221

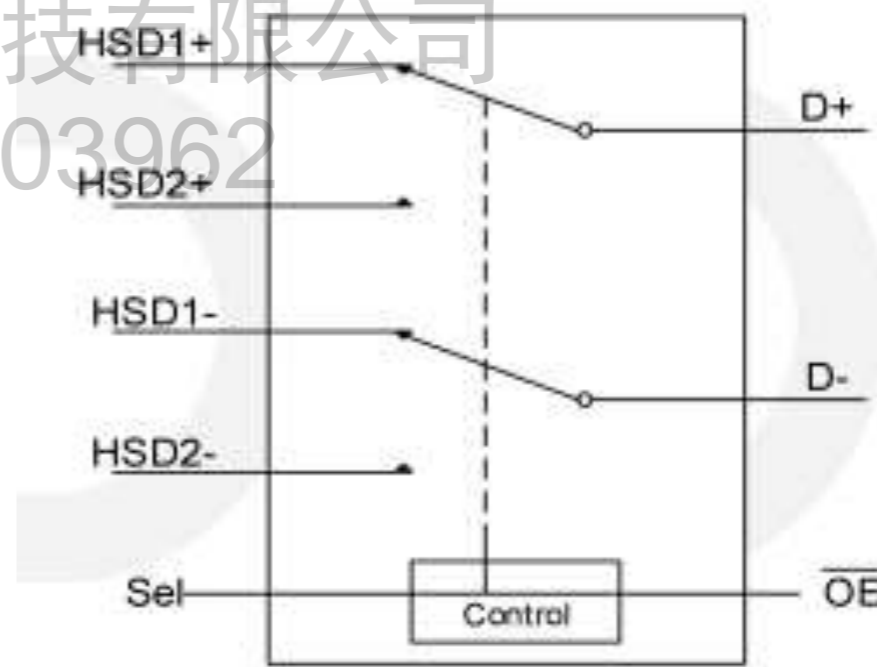


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 5 pF (typ.)
- Low RON: 5.5  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 0.5  $\mu$ A (typ.) at VIN = 1.8 V, VCC = 3.6 V
- Packaged in Green MSOP-10, QFN 1.8\*1.4-10 and QFN 2.0\*1.5-10
- 6 kV HBM ESD on all pins
- Power-Off/On protection on common ports D+/D- pins tolerate up

## Application

- Cell-phones/PDA
- MP3/MP4/PMP
- STB/LCD TVs



# Low-Power, USB 2.0 High-Speed Switch– DIO32320

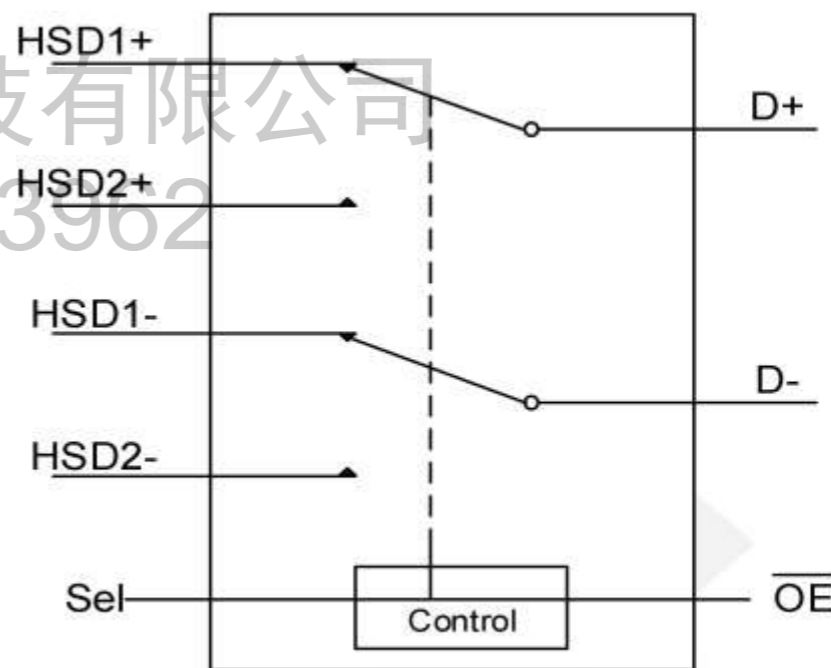


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 3 pF (typ.)
- Low RON: 6  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 8  $\mu$ A (max.) at VIN = 1.8 V, VCC = 3.6V
- Packaged in Green MSOP-10, QFN1.4\*1.8-10 and QFN1.4\*1.2-10
- 6 kV HBM ESD
- Power-off / on protection on common ports D+/D- pins tolerance up

## Application

- Telematics control units
- Automotive cluster displays
- Front and rear cameras



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# Low-Power, USB 2.0 High-Speed Switch— DIO32320B

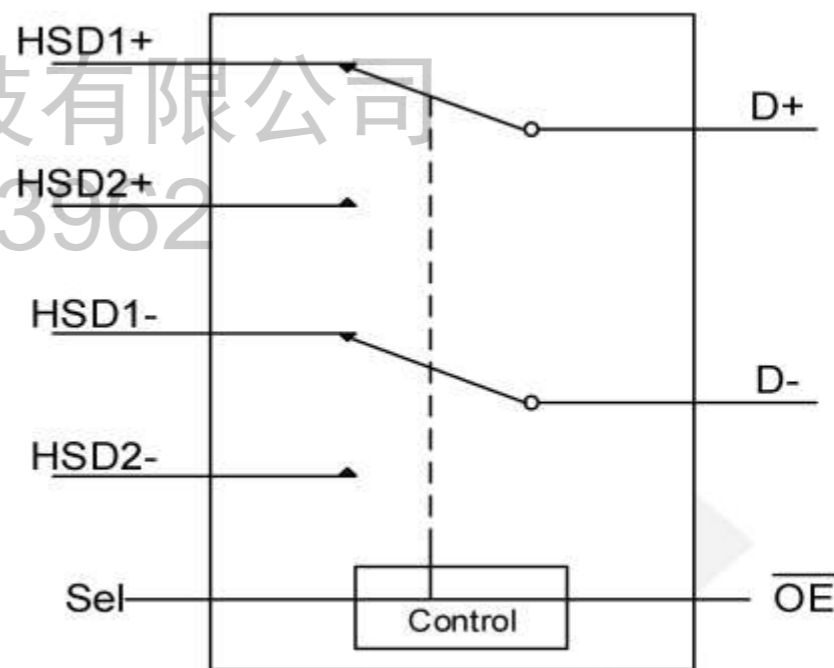


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 3 pF (typ.)
- Low RON: 6  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 8  $\mu$ A (max.) at VIN = 1.8 V, VCC = 3.6V
- Packaged in Green MSOP-10, QFN1.4\*1.8-10 and QFN1.4\*1.2-10
- 6 kV HBM ESD
- Power-off / on protection on common ports D+/D- pins tolerance up

## Application

- Cell-Phone/PDA
- MP3/MP4/PMP
- STB/LCD TVs



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# Low-Power, USB 2.0 High-Speed Switch– DIO32321

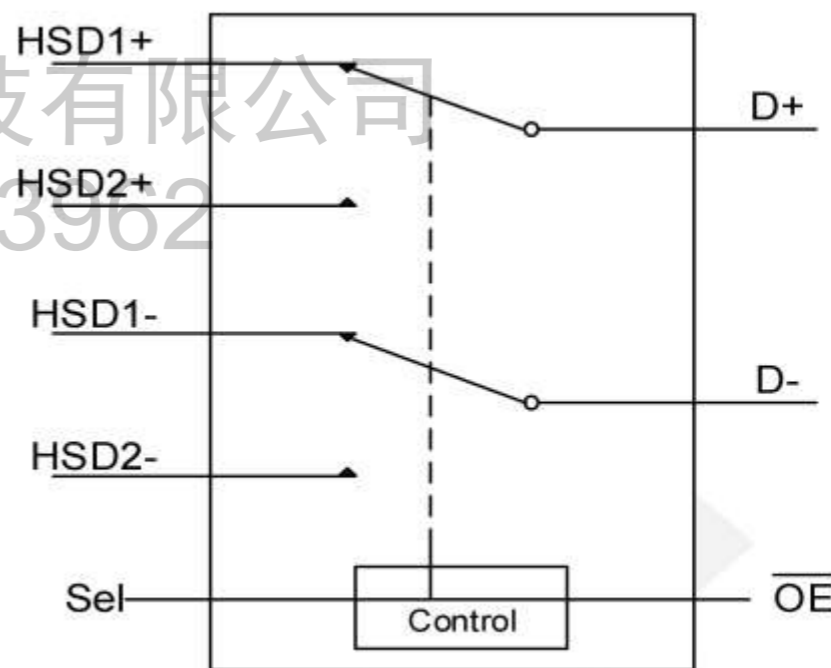


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 5 pF (typ.)
- Low RON: 5.5  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 0.5  $\mu$ A (max.) at VIN = 1.8 V, VCC = 3.6V
- Packaged in Green MSOP-10, QFN1.4\*1.8-10 and QFN1.4\*1.2-10
- 6 kV HBM ESD
- Power-off / on protection on common ports D+/D- pins tolerance up

## Application

- Telematics control units
- Automotive cluster displays
- Front and rear cameras



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# Low-Power, USB 2.0 High-Speed Switch– DIO32730

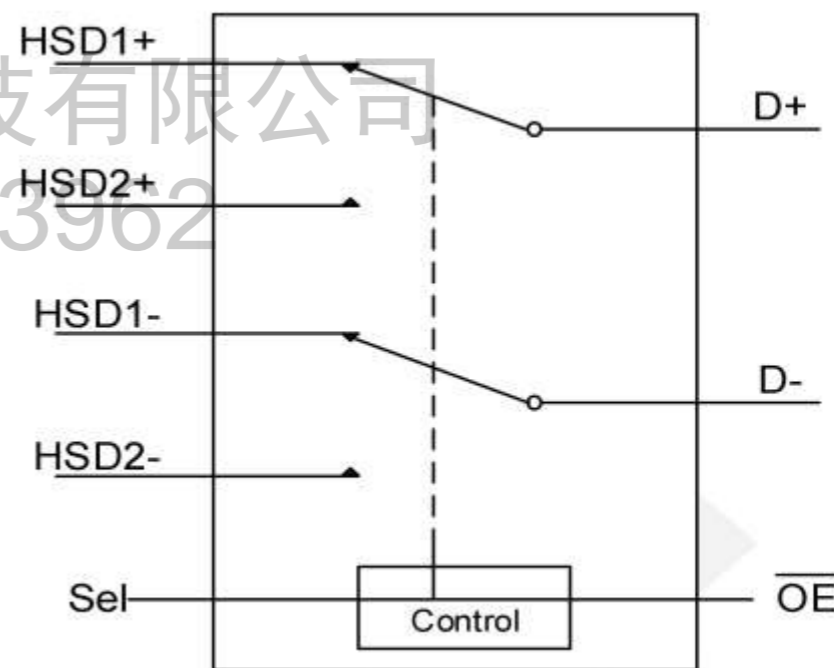


## Feature

- Super high bandwidth (-3 dB): **> 2.0 GHz**
- VCC operation at 2.7 V to 5.5 V
- Low CON: 5 pF (typ.)
- Low RON: 5.5  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 0.5  $\mu$ A (max.) at VIN = 1.8 V, VCC = 3.6V
- Packaged in Green DQFN1.8\*1.4-10
- 6 kV HBM ESD
- Power-off / on protection on common ports D+/D- pins tolerance up

## Application

- Telematics control units
- Automotive cluster displays
- Front and rear cameras



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# Low-Power, USB 2.0 High-Speed Switch – DIO32730



## Comparison Table

ITEM	DIO32730	DG2730
Voltage Range	2.7 ~ 5.5V	2.7 ~ 5.5V
3 dB Bandwidth	> 2.0 GHz	900 MHz
Digital Control $V_{INH}$	0.85V Can support 1.2V IO	1.3V Can't support 1.2V IO
D+/D- on Capacitance $C_{ON}$	Typ. 5pF	Typ. 5.8pF
Package DQFN1.8*1.4-10 (Pin to Pin Compatible)		

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# Low-Power, USB 2.0 High-Speed Switch– DIO32321EN8

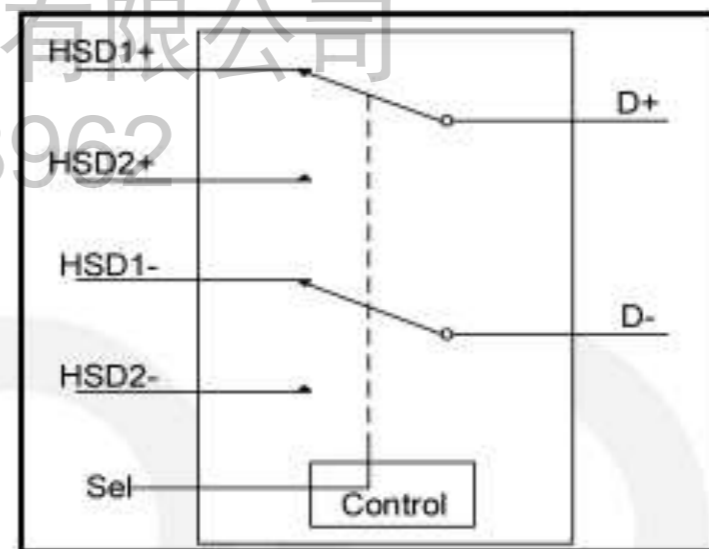


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 5 pF (typ.)
- Low RON: 5.5  $\Omega$  (typ.)
- Low power consumption: 1  $\mu$ A (max.)
- Low ICCT : 0.5  $\mu$ A (max.) at VIN = 1.8 V, VCC = 3.6V
- Packaged in Green DFN1.6\*1.2-8
- 6 kV HBM ESD on all pins
- Power-off/on protection on common ports D+/D- pins tolerate up to 5.5 V

## Application

- Cell-Phone/PDA
- MP3/MP4/PMP
- STB/LCD TV



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# 2nA Low-leakage, USB 2.0 High-Speed Switch– DIO1001

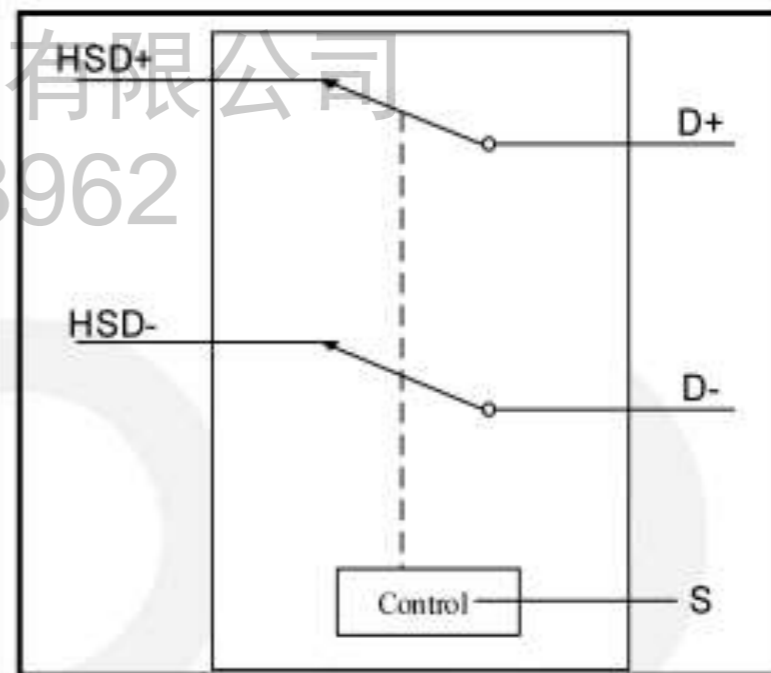


## Feature

- Super high bandwidth (-3 dB): > 2.0 GHz
- VCC operation at 2.7 V to 5.5 V
- Low CON: 3 pF typical
- Low RON: 6  $\Omega$  typical
- Low power consumption: 1  $\mu$ A maximum
- Low ON/OFF leakage: ION/IOFF < 2 nA at 4.5 V on port
- Packaged in small DQFN1.5\*1.5-8
- 6 kV HBM ESD on all pins
- Power-off/on protection on common ports D+/D- pins tolerance up to 5.5 V

## Application

- Cell-Phone/PDA
- MP3/MP4/PMP
- STB/LCD TV



# DP/DM Switch with 20V Overvoltage Protection– DIO5000LD6

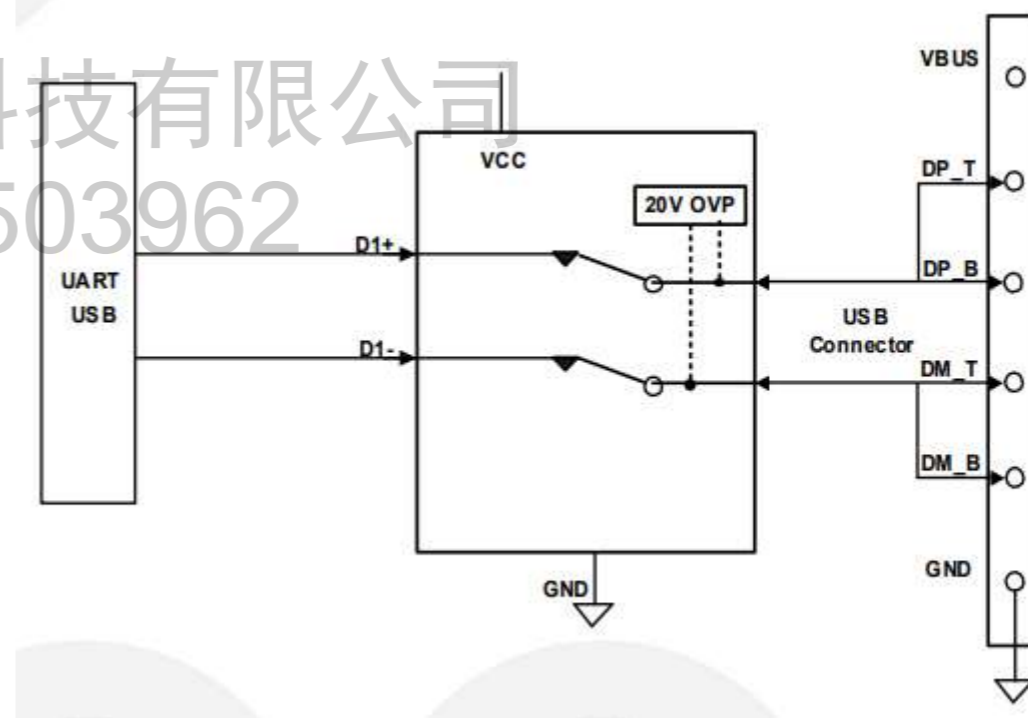


## Feature

- Operating Voltage Range: 2.3V to 5.5V
- VCC=0V Powered Off Protection
- Low RON: 5.5Ω
- BW: 1.5GHz
- CON: 4.5pF
- Overvoltage Protection (OVP) on Common Pins up to 20V DC
- ESD (HBM): 4.5kV
- Temperature Range of -40 to 85°C
- Package: DFN1.5\*2-6

## Application

- Mobile
- PC/Notebook
- Tablet
- USB Type-C



# DP/DM Switch with 20V Overvoltage Protection– DIO5000EN8

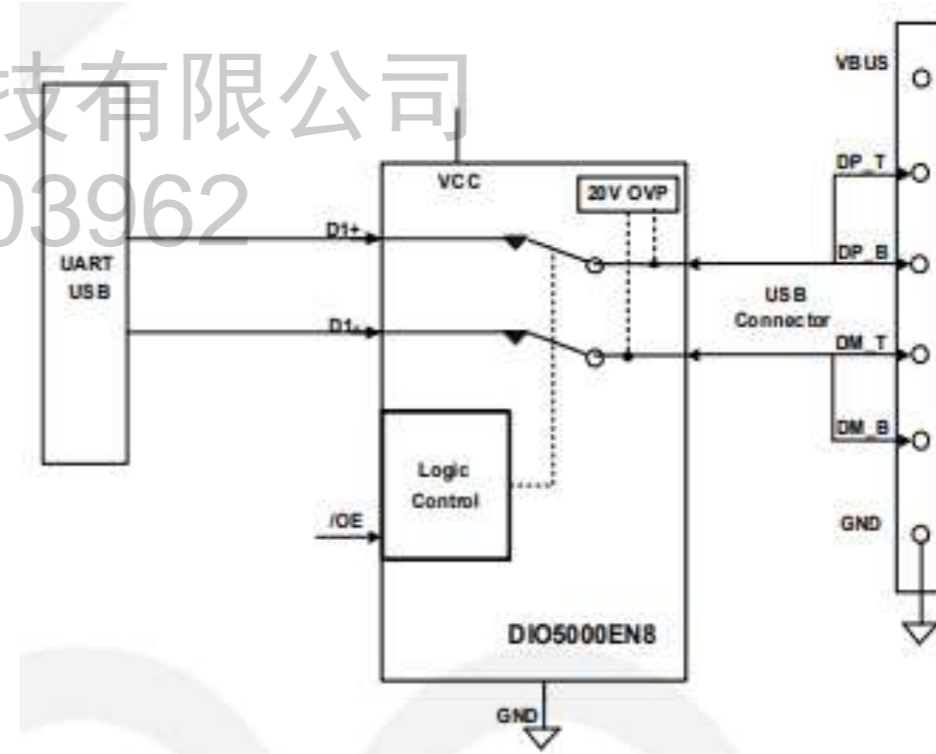


## Feature

- Operating Voltage Range: 2.3V to 5.5V
- VCC=0V Powered Off Protection
- Low RON: 5.5Ω
- BW: 1.5GHz
- CON: 4.5pF
- Overvoltage Protection (OVP) on Common Pins up to 20V DC
- ESD (HBM): 4.5kV
- Temperature Range of -40 to 85°C
- Package: DFN1.2\*1.6-8

## Application

- Mobile
- PC/Notebook
- Tablet
- USB Type-C



# Low-Power, USB2.0 High-Speed Switch– DIO32210

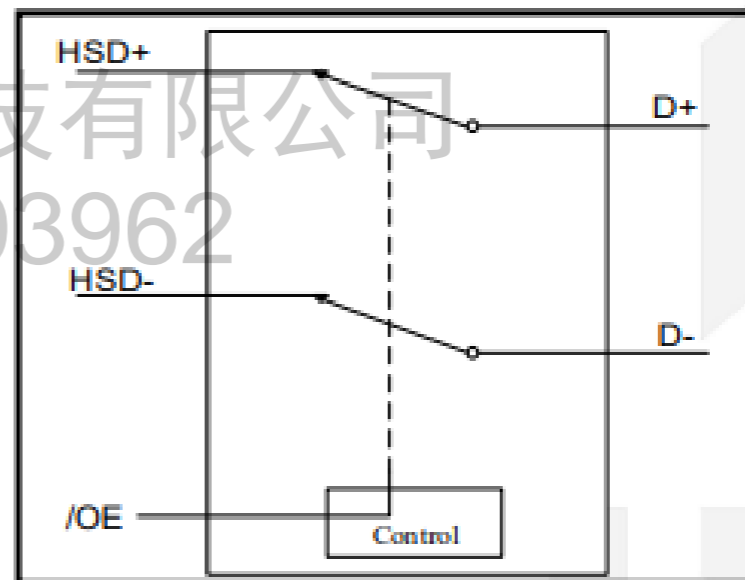


## Feature

- Super high bandwidth (-3dB): > 2.0GHz
- VCC operation at 2.7V to 5.5V
- Low Con: 3pF Typical
- Low Ron: 6Ω Typical
- Low Power Consumption: 1μA Maximum
- Low ICCT : 8μA Max @VIN=1.8V, VCC=3.6V
- Packaged in Green QFN-8
- 6kV HBM ESD on all pins
- Power-Off/On protection on common ports D+/D- pins tolerate up to 5.5V

## Application

- Cell-Phone/PDA
- MP3/MP4/PMP
- STB/LCD TV



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# Low Power, Dual SIM Card Analog Switch– DIO1567

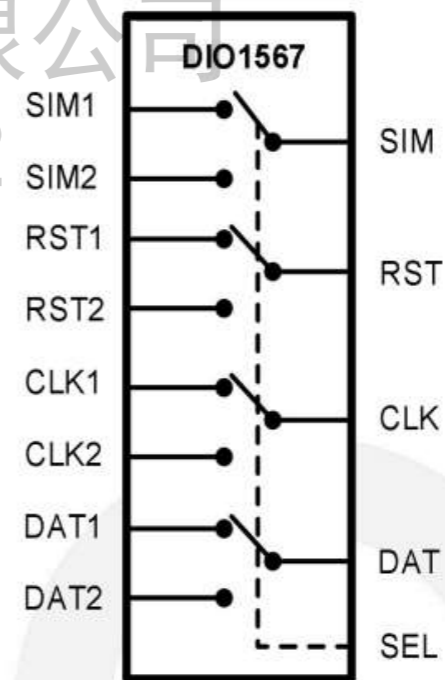


## Feature

- Switch type: SPDT(4X)
- Voltage operation: 1.6V to 4.5V
- Low on resistance:  $0.65\Omega$  at SIM path;  $2.7\Omega$  at other path
- Bandwidth  $>200\text{MHz}$
- 10pF CON at DAT/CLK/RST path
- Low power consumption
- Packaged: 16-Lead QFN1.8\*2.6 and 16-Lead QFN3\*3
- 6kV HBM ESD

## Application

- Cell-Phone/PDA
- Set-Top Box
- Digital Camera
- Notebook
- TV/ LCD Monitor



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# Low Power, Dual SIM Card Analog Switch– DIO1568

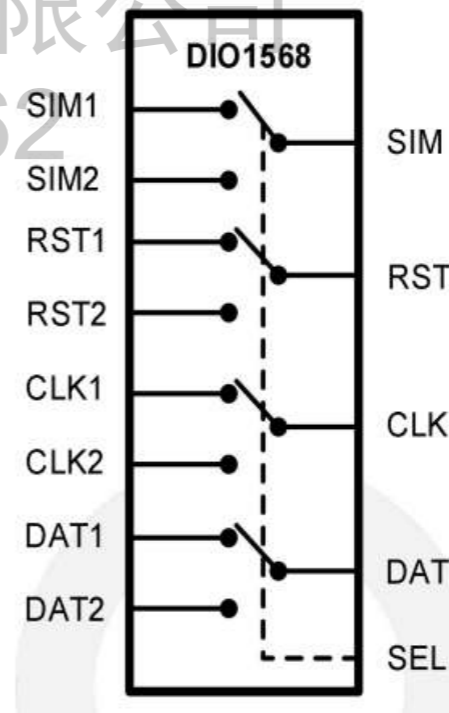


## Feature

- Switch type: SPDT (4X)
- Voltage operation: 1.65 V to 5.5 V
- 200MHz bandwidth
- Low on-resistance: 0.85Ω at SIM path; 2.7Ω at other paths
- 20 pF CON at DAT/CLK/RST path
- Supports 1.2V levels I/O
- Low power consumption
- Packaged: 16-Lead QFN1.8\*2.6 and 16-Lead QFN3\*3

## Application

- Cell-Phone/PDA
- Set-Top Box
- Digital Camera
- Notebook
- TV/ LCD Monitor



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# Dual SPST Depletion Audio Switch with Negative Swing– DIO1553



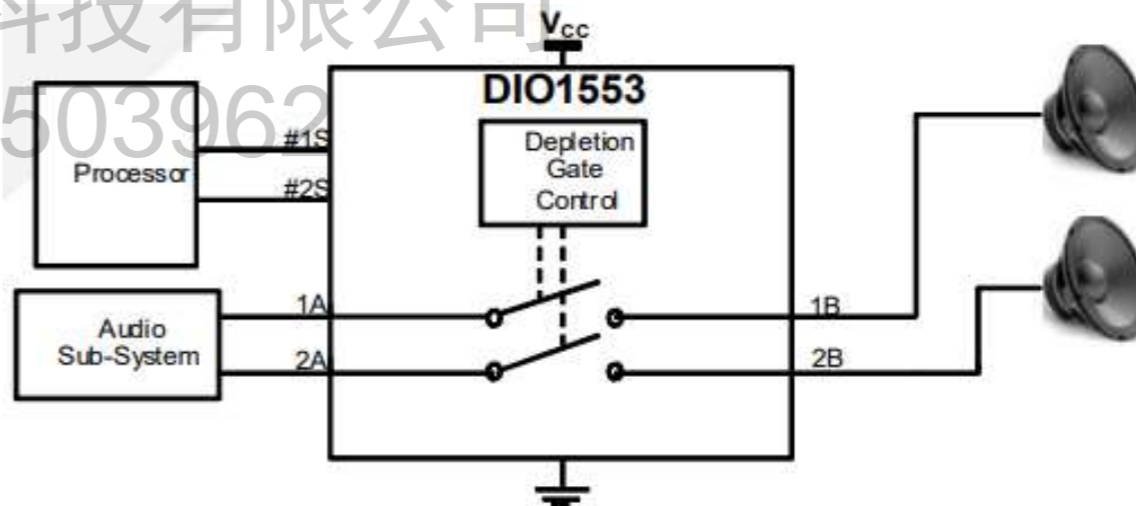
## Feature

- Dual SPST depletion switch
- Normally closed when  $V_{CC} < 0.2\text{ V}$
- Switches configurable through select pins
- VSW:  $-1.5\text{ V}$  to  $1.5\text{ V}$
- $R_{ON}$ :  $0.35\ \Omega$  (Typical)
- $R_{FLAT} < 0.01\ \Omega$  (Typical)
- THD+N:  $-103\text{ dB}$  (Typical)
- OIRR:  $-88\text{ dB}$  (Typical)

## Application

- Smart Phones
- Tablets, Ultra Books

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# Dual SPST Depletion Audio Switch with Negative Swing– DIO1553B



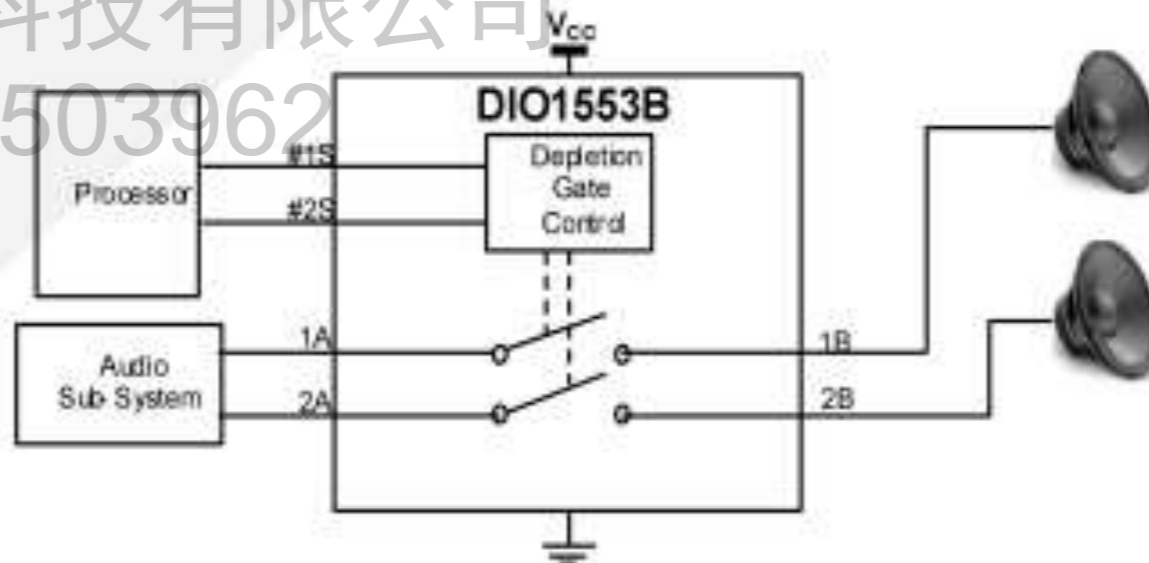
## Feature

- Dual SPST depletion switch
- Normally closed when  $V_{CC} < 0.2\text{ V}$
- Switches configurable through select pins
- VSW:  $-1.5\text{ V}$  to  $1.5\text{ V}$
- $R_{ON}$ :  $0.35\ \Omega$  (Typical)
- $R_{FLAT} < 0.01\ \Omega$  (Typical)
- THD+N:  $-103\text{ dB}$  (Typical)
- OIRR:  $-88\text{ dB}$  (Typical)

## Application

- Smart Phones
- Tablets, Ultra Books

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# DPDT (0.8 $\Omega$ ) HiFi Audio Switch with Negative Swing– DIO32276



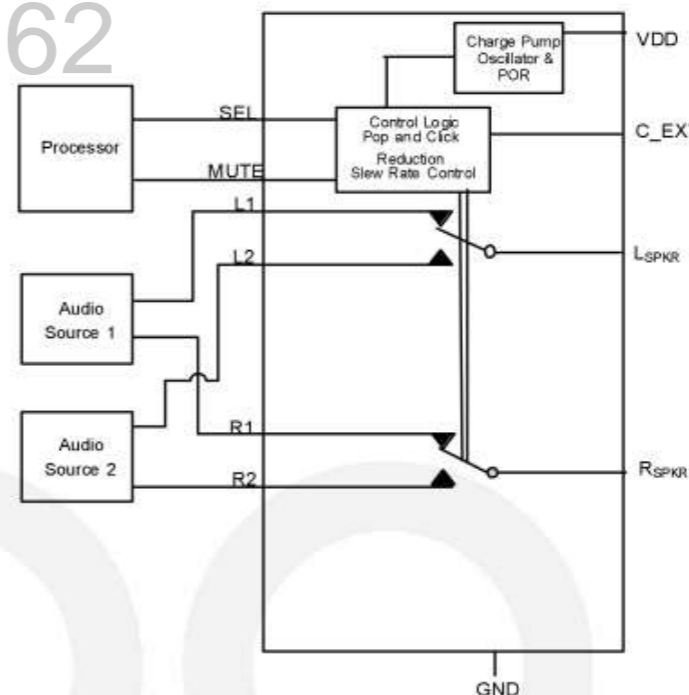
## Feature

- Power supply voltage range: 1.65 to 5.5 V
- RON = 0.8  $\Omega$  (Typ.) at 3.3 V
- THD+N = -110 dB; 2 VRMS, 600  $\Omega$  load; f = 1 kHz
- XTALK = -110 dB at 1 VRMS, 50  $\Omega$  load; f = 1 kHz
- Off isolation = -110 dB at 1 VRMS, 50  $\Omega$  load; f = 1 kHz
- External capacitor connection for pop and click noise suppression
- Power-off protection on common ports
- DQFN 1.8\*1.8-12 package
- VDD = 0 V/float, all switch-I/O Hi-Z

## Application

- Mobile phones
- Tablets
- Notebook PCs
- Media players
- Docking stations
- TVs
- Set-top boxes
- LCD monitor

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# 4PST Depletion Mode Isolation Switch– DIO1500



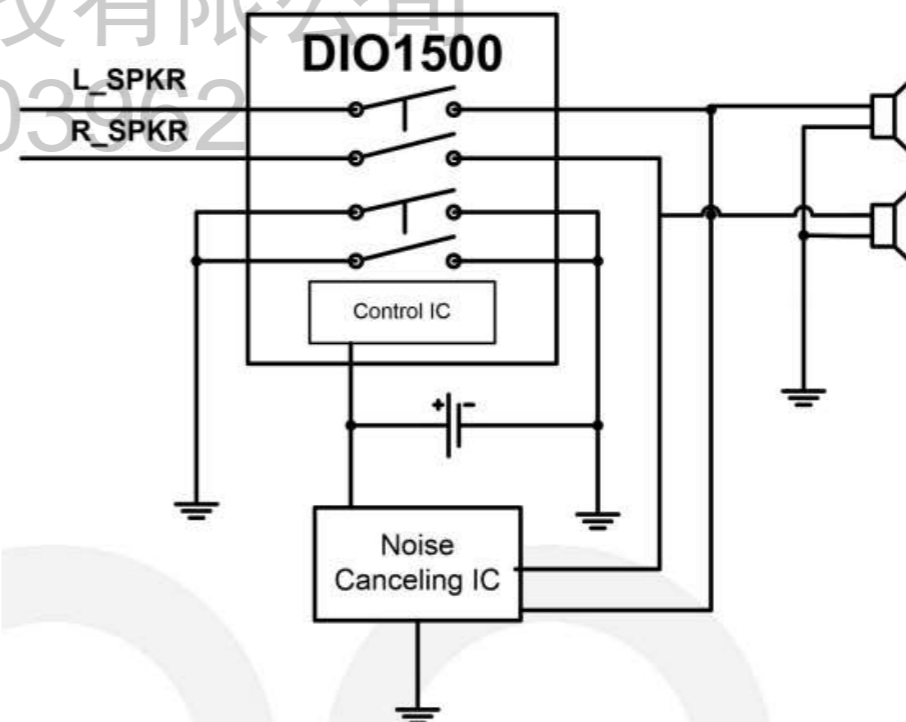
## Feature

- Support 4-pole single-throw
- Depletion mode MOSFETs
- VCC(OFF): 1.6 V to 3.0 V
- RON: 0.5  $\Omega$  typical
- RON-Flat: 0.01  $\Omega$  typical
- Package: 12-ball WLCSP, (with back side laminate), 3x4 array, 0.4 mm pitch, 250  $\mu\text{m}$  ball

## Application

- Cell phones
- Smart Phones
- Tablets
- MP3s
- GPS
- PMP

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# 4PST Depletion Mode Isolation Switch– DIO1501

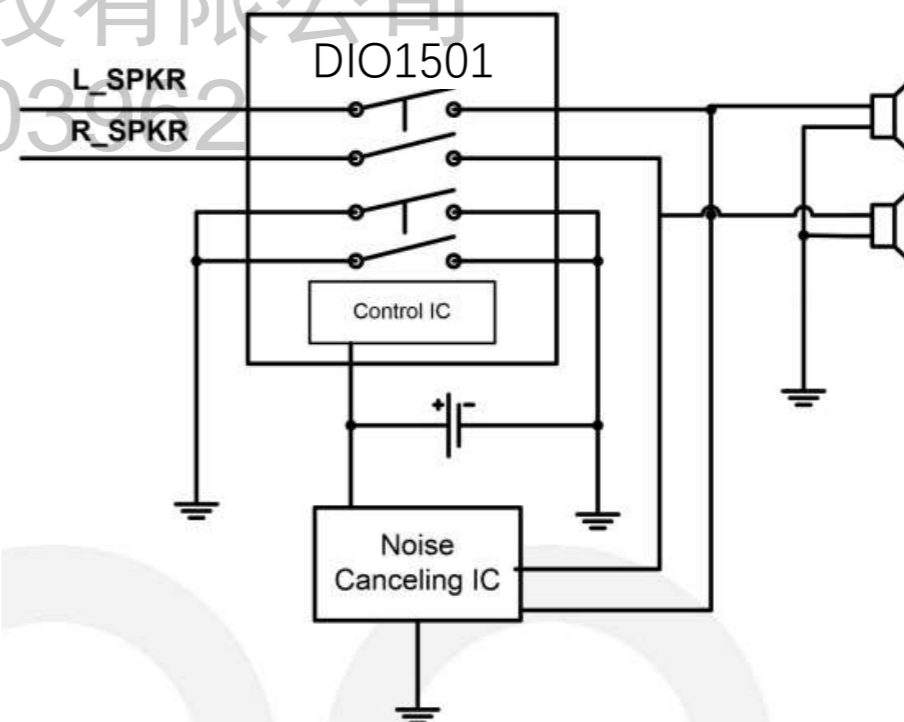


## Feature

- Support 4-pole single-throw
- Depletion mode MOSFETs
- VCC(OFF): 1.6 V to 3.0 V
- DIO1500 Upgrade version, -1V upgrade to -2V
- RON: 0.5  $\Omega$  typical
- RON-Flat: 0.01  $\Omega$  typical
- Package: 12-ball WLCSP, (with back side laminate), 3x4 array, 0.4 mm pitch, 250  $\mu\text{m}$  ball

## Application

- Cell phones
- Smart Phones
- Tablets
- MP3s
- GPS
- PMP



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# High Voltage Low RON Dual-Pole Single-Throw Switch– DZ106



## Feature

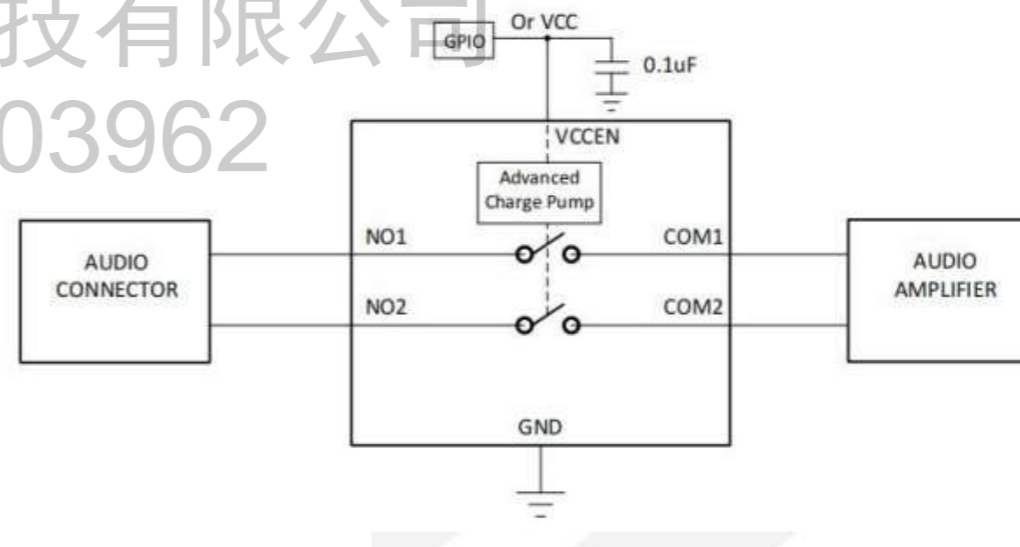
- VCCEN voltage range: 1.1 to 5.5 V
- Recommended voltage for COM/NO: -0.5 to 16 V
- COMx to NOx on-resistance: 130 mΩ each (Typ.)
- Max 1.5 A continuous current capability each path
- Peak 2.5 A current (<1ms) capability each path
- THD + N: -105 dB at VON = 1 VP-P, RL = 32 Ω
- Off-isolation: -107 dB
- Crosstalk: -88 dB
- Over temperature protection (OTP)
- Robust ESD: ±2 kV HBM, ±2 kV CDM
- Package: WLCSP-6

## Application

- Smart phones
- AR / VR devices
- Tablet PCs
- Wearable

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- 支持通过16V的高压信号
- 高达-107dB的THD
- VCCEN可以通过供电
- WLCSP-6超小封装



# Dual SPST Depletion Audio Switch with Negative Swing– DIO1503



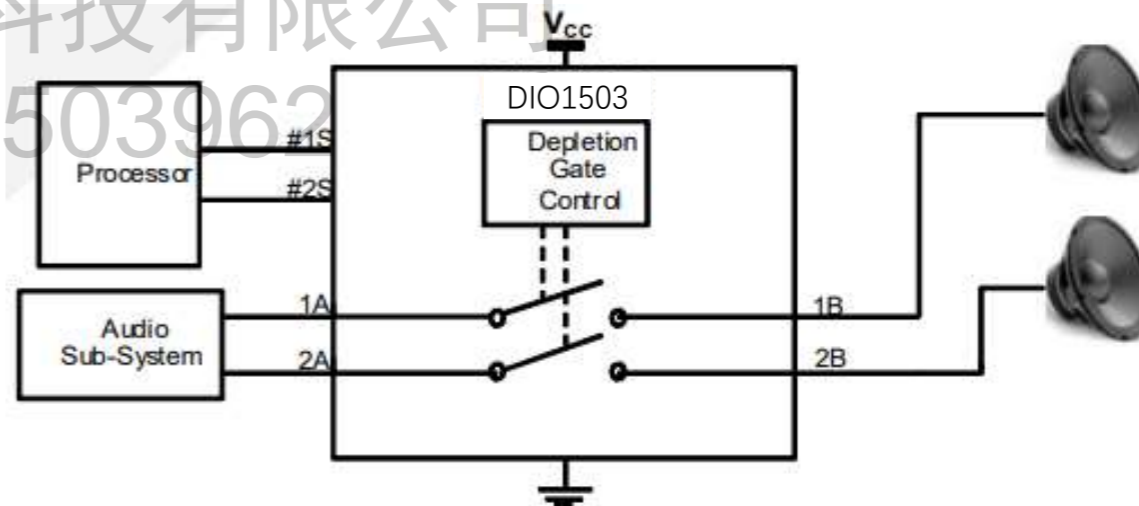
## Feature

- Dual SPST depletion switch
- Normally closed when  $V_{CC} < 0.2\text{ V}$
- Switches configurable through select pins
- VSW:  $-1.5\text{ V}$  to  $1.5\text{ V}$
- $R_{ON}$ :  $0.35\ \Omega$  (Typical)
- $R_{FLAT} < 0.01\ \Omega$  (Typical)
- THD+N:  $-103\text{ dB}$  (Typical)
- OIRR:  $-88\text{ dB}$  (Typical)

## Application

- Smart Phones
- Tablets, Ultra Books

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# 2.8Ω, 300MHz Dual-SPDT Switch with Negative Swing– DIO1717

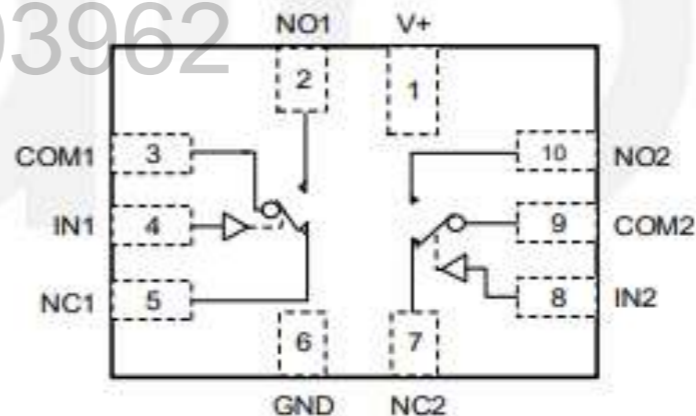


## Feature

- Voltage Operation: 2.5V to 5.5V
- -2.0V to V+ Signal Passing Ability
- On-Resistance: 2.8Ω (TYP) at 4.5V
- High Bandwidth: 300MHz
- Fast Switching Times: tON 1.8μs tOFF 350ns
- High Off-Isolation: -49dB at 10MHz
- Low Crosstalk: -52dB at 10MHz
- Negative signal handling: the lowest -2.0V negative signal pass
- TTL/CMOS Compatible
- Break-Before-Make Switching
- Extended Industrial Temperature Range: -40 to 105°C

## Application

- Cell Phone, and Digital Camera
- PDA , and Notebook
- LCD Monitor
- TV, and Set-Top Box



# 2.8Ω, 383MHz Dual-SPDT Switch with Negative Swing– DIO17170

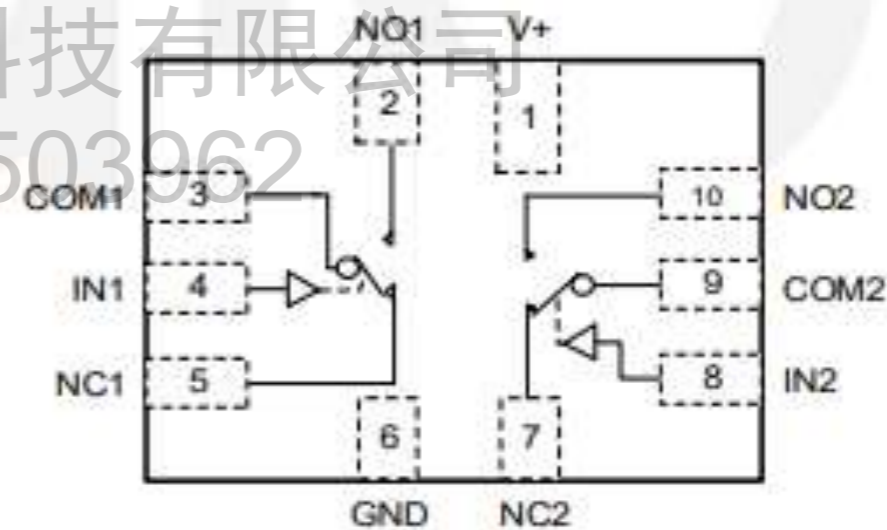


## Feature

- Switch Type: SPDT(2X)
- Voltage Operation: 1.8V to 5.5V
- On-Resistance: 2Ω (TYP) at 4.2V
- High Bandwidth: 383MHz
- Fast Switching Times: tON 1.36μs tOFF 60ns
- High Off-Isolation: -39dB at 10MHz
- Low Crosstalk: -43dB at 10MHz
- TTL/CMOS Compatible
- Negative signal handling: the lowest (VCC)-5.5V negative signal pass
- All switch I/O ports are High Impedance with no leakage current, when Vcc=0V
- Break-Before-Make Switching
- Extended Industrial Temperature Range: -40 to 85°C

## Application

- Cell Phone, and Digital Camera
- PDA , and Notebook
- LCD Monitor
- TV, and Set-Top Box



# Dual-SPDT (1Ω) Analog Switch with Negative Swing– DIO1269



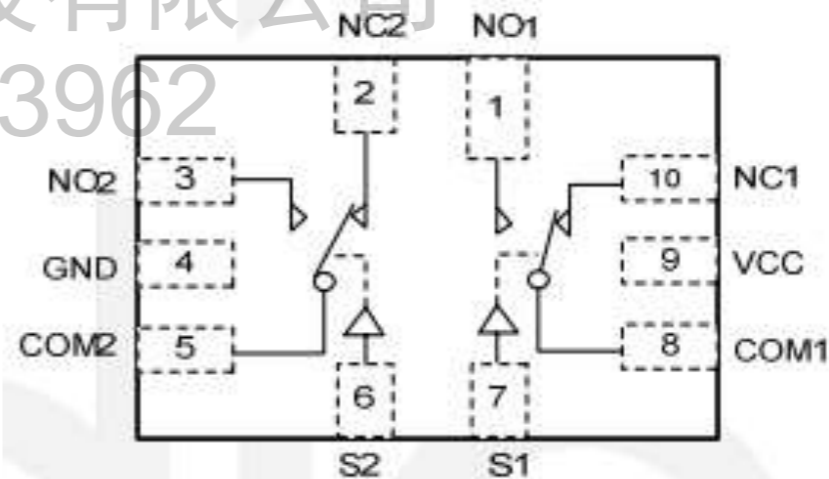
## Feature

- 1Ω Typical On Resistance (RON) for 3.0V Supply
- 0.5Ω RON Flatness for 3.0V Supply
- -3dB Bandwidth: 180MHz
- Low-ICCT Current Over an Expanded Control Input Range
- Green Packaged in DQFN-10
- Power-Off Protection on Common Ports
- Broad VCC Operating Range: 2.7V to 5V

## Application

- Cell Phone, and Digital Camera
- PDA , and Notebook
- LCD Monitor
- TV, and Set-Top Box

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# Dual-SPDT (0.8Ω) Analog Switch with Negative Swing– DIO1520

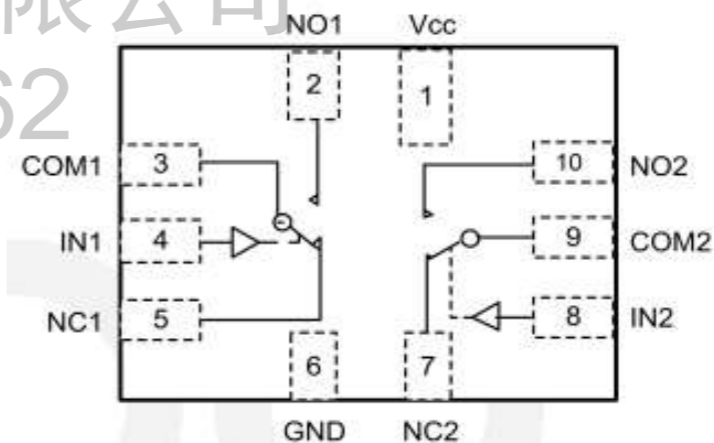


## Feature

- Switch type: SPDT (2X)
- Voltage operation: 1.65 V to 5.5 V
- Ultra-low on resistance: 0.7 Ω at +3 V
- -3 dB bandwidth: 300 MHz
- High off-isolation: -90 dB at 1 kHz
- Low crosstalk: -95 dB at 1 kHz
- Excellent on resistance matching: 0.02 Ω
- Low total harmonic distortion (THD): 0.024% at VSW = 2VPP, RL = 32 Ω
- All switch I/O ports are high impedance with no leakage current, when VCC = 0 V
- Break-before-make switching
- Green packaged: DQFN-10
- 8 kV HBM ESD

## Application

- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals



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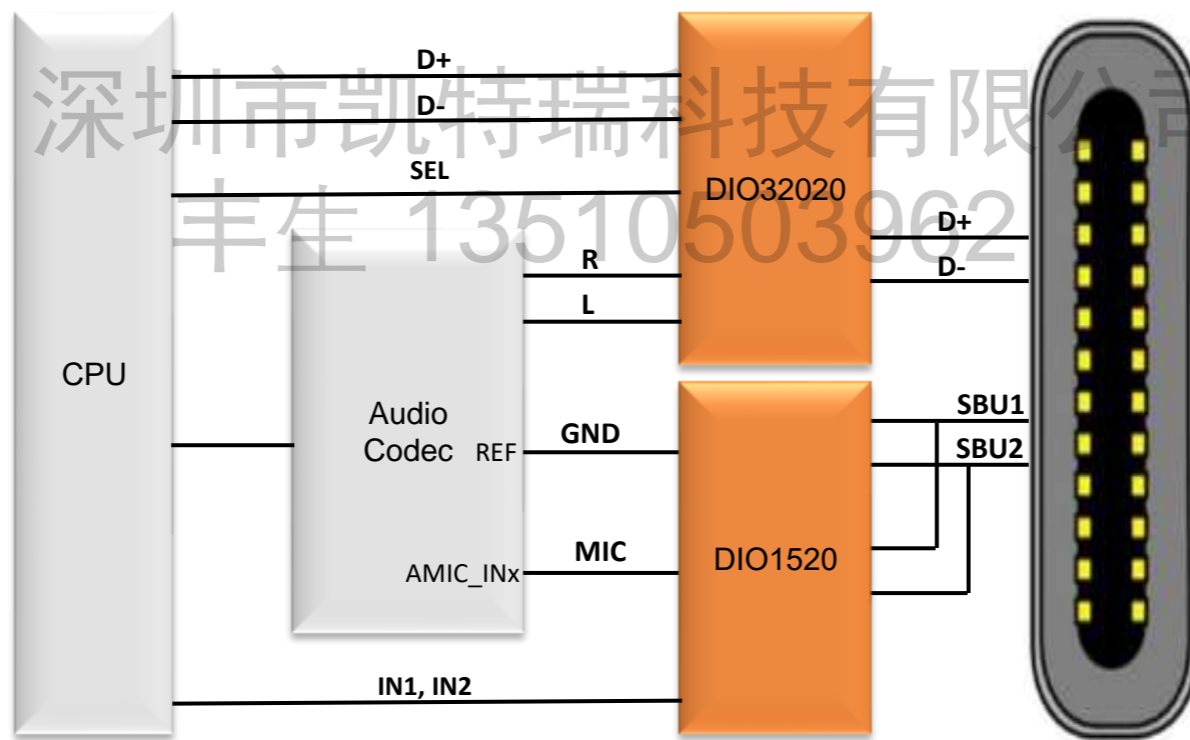


# DIO32020+DIO1520低成本替代DIO4480方案



## DIO32020+DIO1520 Application

由于手机检测Type-C耳机是通过CC检测实现的，所以当CC1和CC2都检测到Ra时，CPU知道有Type-C耳机插入，然后通过GPIO控制DIO32020将Type-C的DP/DM打到Audio的左右声道、控制DIO1520将SBU1信号和SBU2信号打到Sense信号和MIC信号。



# Dual-SPDT (0.8Ω) Analog Switch with Negative Swing– DIO1510

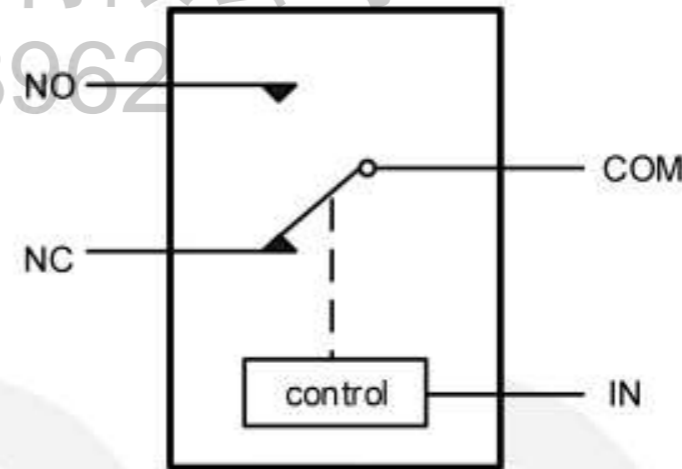


## Feature

- Switch type: SPDT
- Voltage operation: 1.8 V to 5.5 V
- Ultra-Low On Resistance: 0.4Ω @+4.5V
- -3dB Bandwidth: 140MHz
- High Off-isolation: -75dB@100kHz
- Excellent On Resistance Flatness: 0.04Ω
- Low Total Harmonic Distortion (THD): 0.01% @ VSW=1VPP, RL=32Ω
- All switch I/O ports are High Impedance with no leakage current, when VCC=0V
- Break-Before-Make Switching
- Input/output is isolated when powered off
- Green Packaged: SC70-6
- 8 kV HBM ESD

## Application

- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals



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# Dual-SPDT (0.8Ω) Analog Switch with Negative Swing– DIO1520B

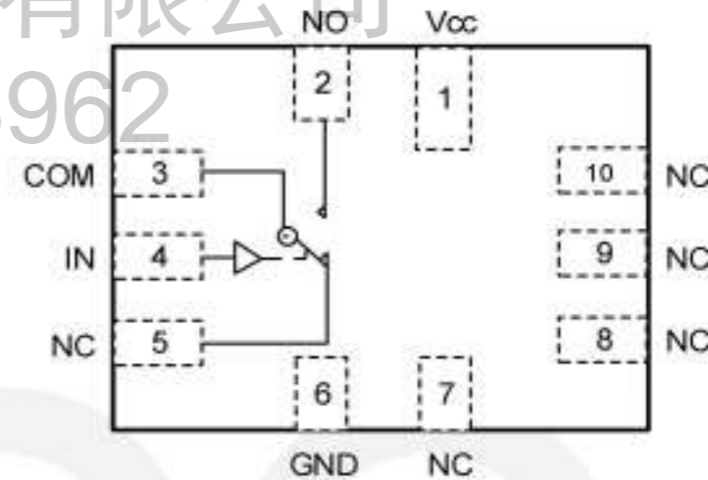


## Feature

- Switch type: SPDT
- Voltage operation: 1.65 V to 5.5 V
- Ultra-low on resistance: 0.7 Ω at +3 V
- -3 dB bandwidth: 300 MHz
- High off-isolation: -90 dB at 1 kHz
- Low crosstalk: -95 dB at 1 kHz
- Excellent on resistance matching: 0.02 Ω
- Low total harmonic distortion (THD): 0.024% at VSW = 2VPP, RL = 32 Ω
- All switch I/O ports are high impedance with no leakage current, when VCC = 0 V
- Break-before-make switching
- Green packaged: DQFN-10
- 8 kV HBM ESD

## Application

- MP3/MP4/PMP
- Portable instrumentation
- Battery powered communications
- Computer peripherals



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# 5V SPST Analog Switch with Negative Swing– DIO1505

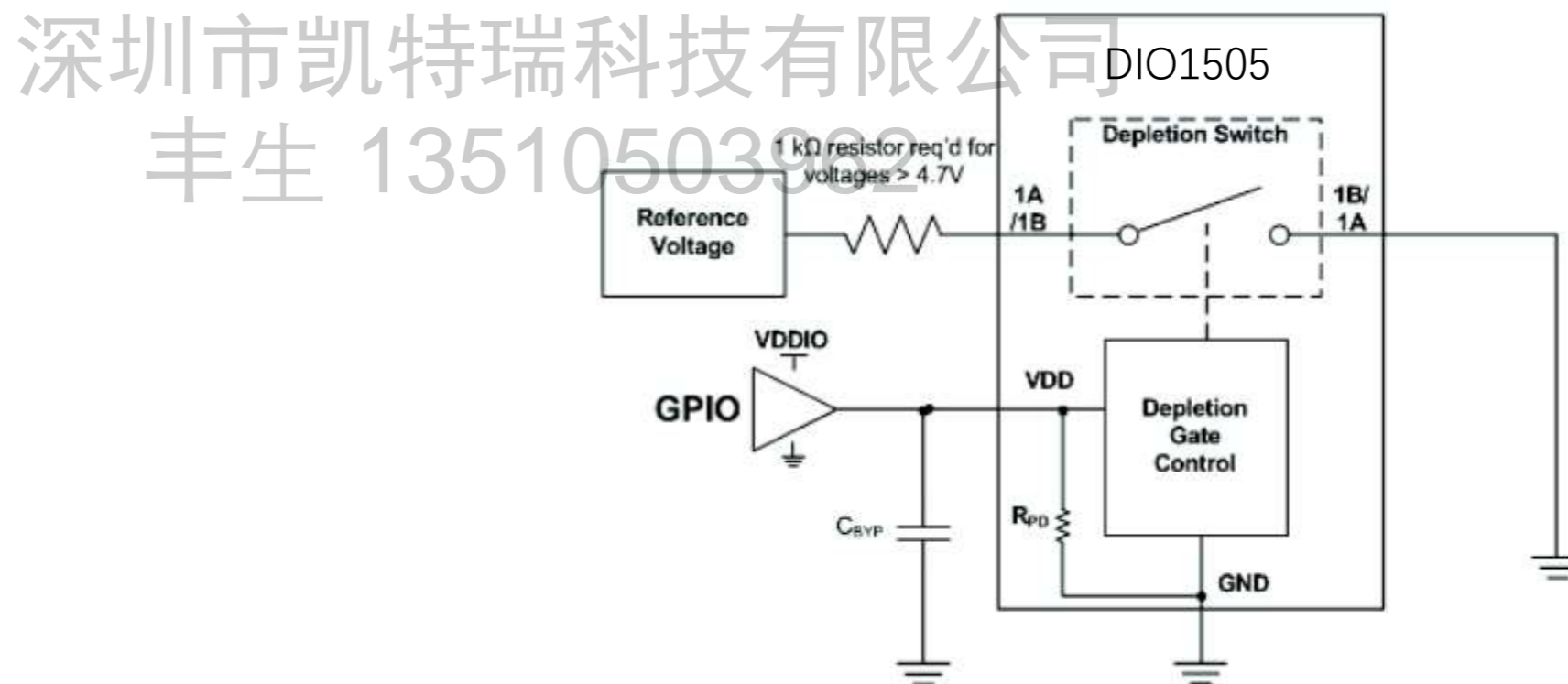


## Feature

- SPST Depletion Switch
- Normally Closed when  $V_{DD} < 0.5\text{ V}$
- VSW:  $-3.0\text{ V}$  to  $+5.5\text{ V}$
- $R_{ON}$ :  $0.7$  (Typical)
- $R_{FLAT}$ :  $1.1\text{ m}\Omega$  (Typical)
- Package: WLCSP-4

## Application

- Mobile Accessories, Adapters, and Cables
- Phones, Tablets, and Laptops
- Headsets



# 8-Channel I2C Switch with Reset– DIO74548

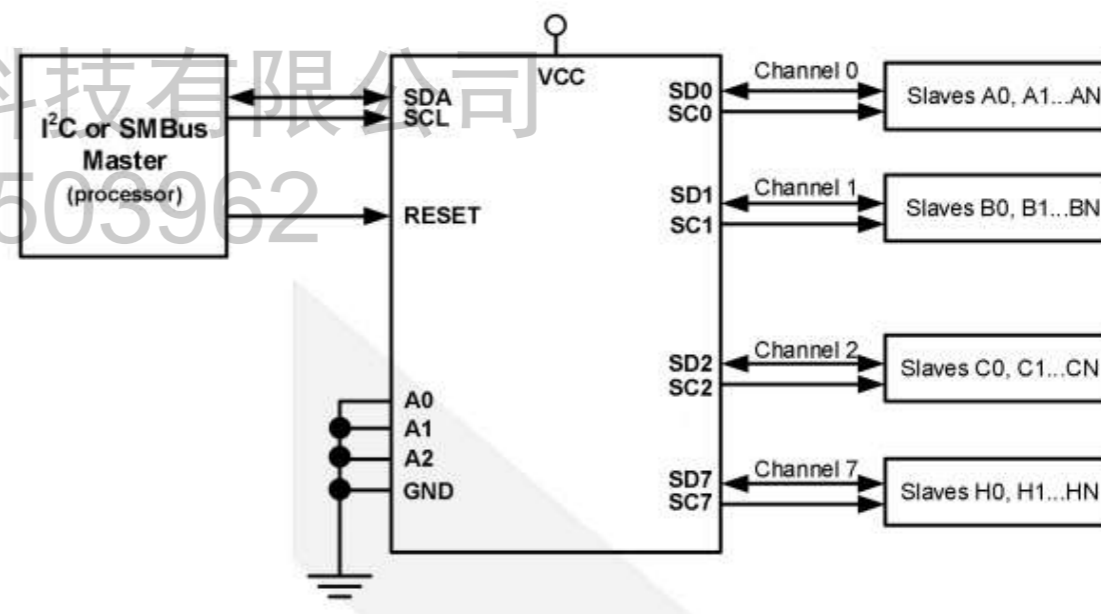


## Feature

- 1-to-8 bidirectional translating switches
- I2C bus and SMBus compatible
- **Active-low reset input**
- **Three address pins**, allowing up to eight DIO74548 devices on the I2C bus
- Channel selection through an I2C bus, in any combination
- Power up with all switch channels deselected
- Low RON switches
- **Allows voltage-level translation between 1.8V, 2.5V, 3.3V, and 5V buses**
- No glitch on power-up
- **Supports hot insertion**
- Low standby current
- Operating power-supply voltage range: 1.65V to 5.5V
- Input tolerance: 5V
- Clock frequency: 0 to 400kHz
- Package: TSSOP24, QFN4\*4-24

## Application

- Servers
- Smartphones
- Tablets
- Notebook



# 4-Channel I2C Switch with Reset– DIO74546

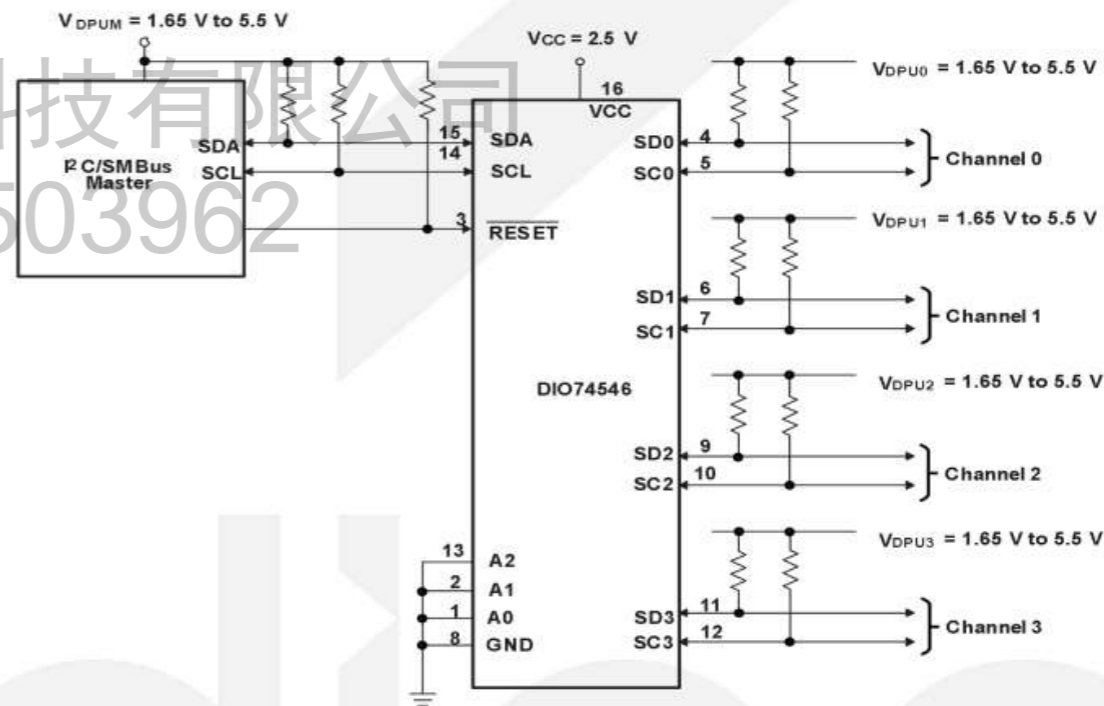


## Feature

- 1-to-4 bidirectional translating switches
- I2C bus and SMBus compatible
- **Active-low reset input**
- **Three address pins**, allowing up to eight DIO74546 devices on the I2C bus
- Channel selection through an I2C bus, in any combination
- Power up with all switch channels deselected
- Low RON switches
- **Allows voltage-level translation between 1.8V, 2.5V, 3.3V, and 5V buses**
- No glitch on power-up
- **Supports hot insertion**
- Low standby current
- Operating power-supply voltage range: 1.65V to 5.5V
- Input tolerance: 5V
- Clock frequency: 0 to 400kHz
- Package: TSSOP16, SOP16

## Application

- Servers
- Smartphones
- Tablets
- Notebook



# 4-Channel I2C Switch with Interrupt– DIO74544

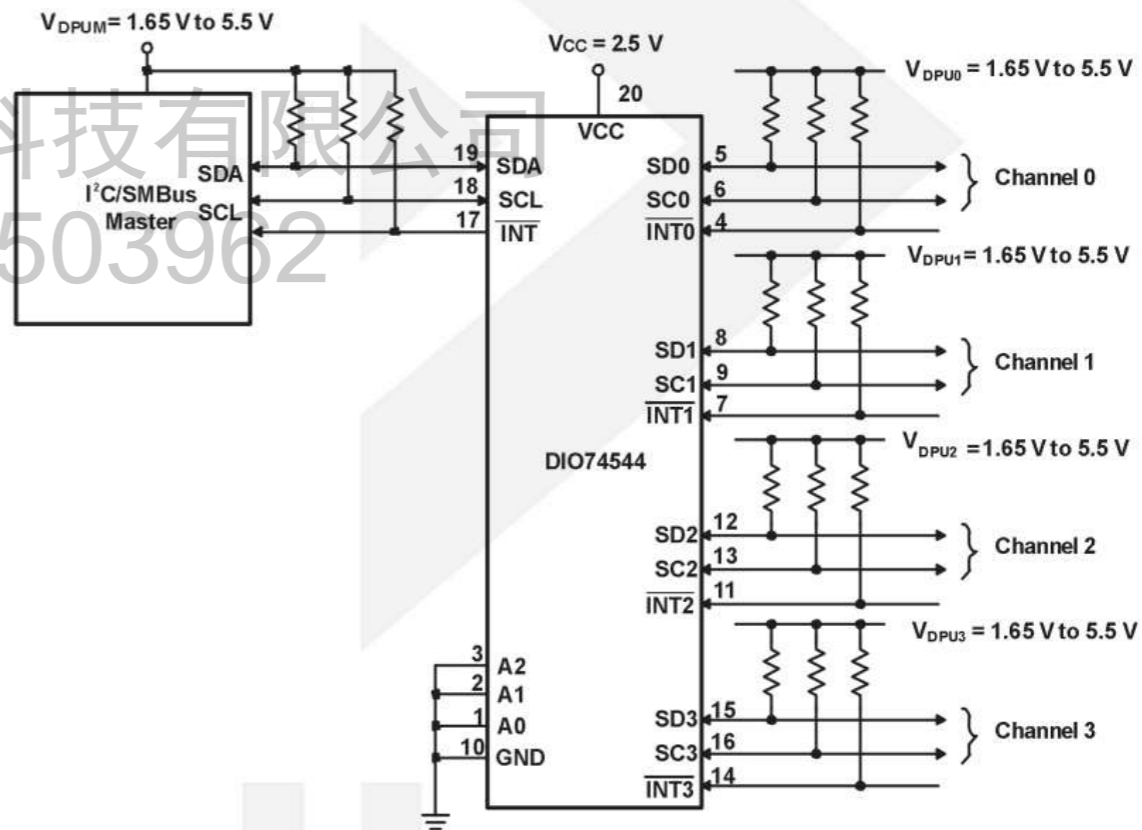


## Feature

- 1-to-4 bidirectional translating switches
- I2C bus and SMBus compatible
- **Four active-low interrupt inputs**
- **Active-low interrupt output**
- **Three address pins**, allowing up to eight DIO74544 devices on the I2C bus
- Channel selection through an I2C bus, in any combination
- Power up with all switch channels deselected
- Low RON switches
- **Allows voltage-level translation between 1.8V, 2.5V, 3.3V, and 5V buses**
- No glitch on power-up
- **Supports hot insertion**
- Low standby current
- Operating power-supply voltage range: 1.65V to 5.5V
- Input tolerance: 5V
- Clock frequency: 0 to 400kHz
- Package: TSSOP20

## Application

- Servers
- Smartphones
- Tablets
- Notebook



# Data/Audio Low-Voltage Dual DPDT Analog Switch– DIO1466

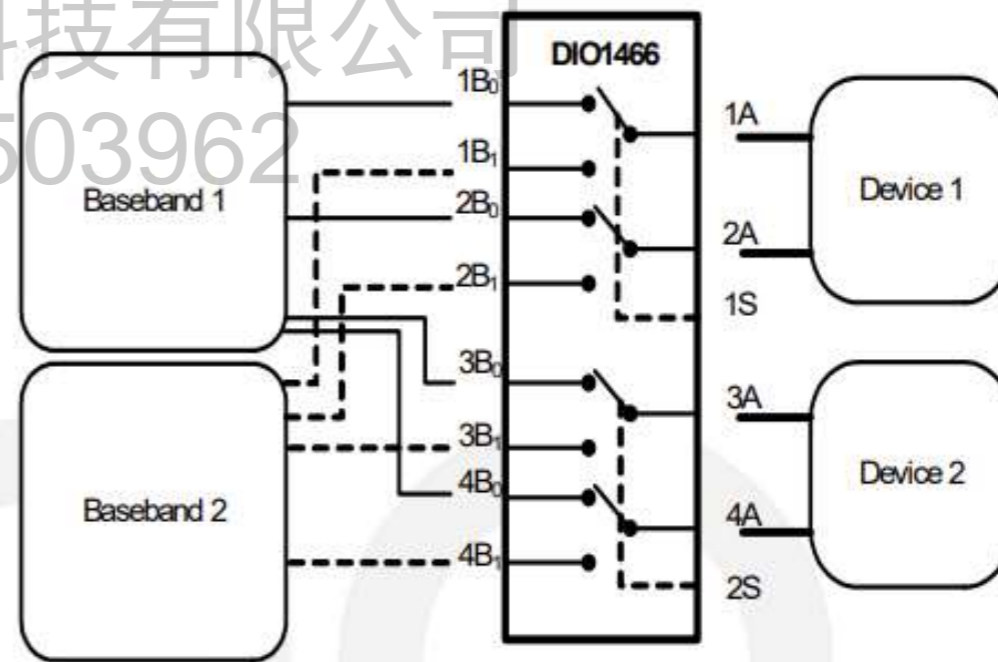


## Feature

- Operating voltage range: 2.3V to 5.5V
- Switch Type: DPDT(2X)
- Input Type: Data/Audio Switch
- Voltage Operation: 1.65V to 5.25V
- Low On Resistance:  $2.7\Omega$  @ 5.0V VCC
- Bandwidth: 170MHz
- 16pF CON and 6.0pF COFF @1MHz
- Excellent On Resistance Matching
- Low Total Harmonic Distortion (THD)
- Low power consumption
- Green Packaged: 16-Lead QFN1.8\*2.6 and 16-Lead QFN3\*3 and 16-Lead QFN2.5\*2.5
- 8kV HBM ESD

## Application

- Servers
- Cell-Phone/PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals



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# Data/Audio Low-Voltage Dual DPDT Analog Switch– DIO1467



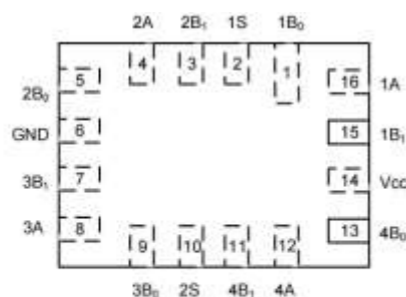
## Feature

- Switch type: DPDT (2X)
- Input type: Data/audio switch
- Voltage operation: 1.65 V to 5.5 V
- Low on resistance of data path: 2.4  $\Omega$
- Bandwidth: 180 MHz
- 30 pF CON at 1MHz
- Excellent on resistance matching
- Low power consumption
- ESD CDM level = C3 at  $\pm 2000$  V
- ESD HBM level = 3B at  $\pm 8000$  V
- Green packaged: QFN1.8\*2.6-16, QFN3\*3-16, and QFN2.5\*2.5-16

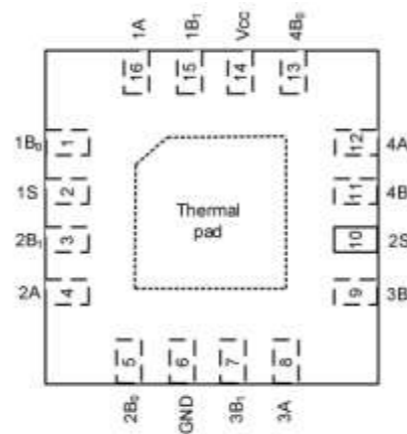
## Application

- Servers
- Cell-Phone/PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

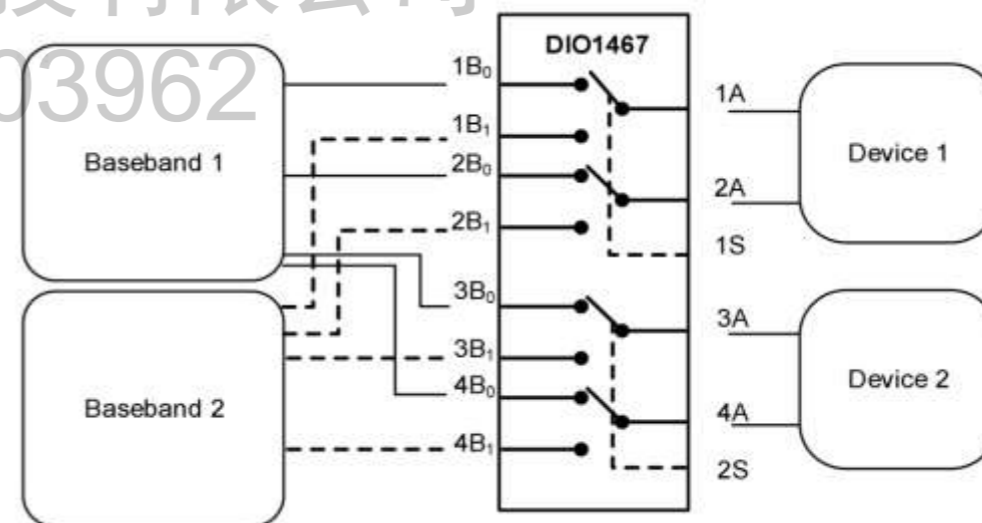
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QFN1.8\*2.6-16



QFN3\*3-16 / QFN2.5\*2.5-16



# Low Propagation Delay, 2:1,4-Channel Switch– DIO23257



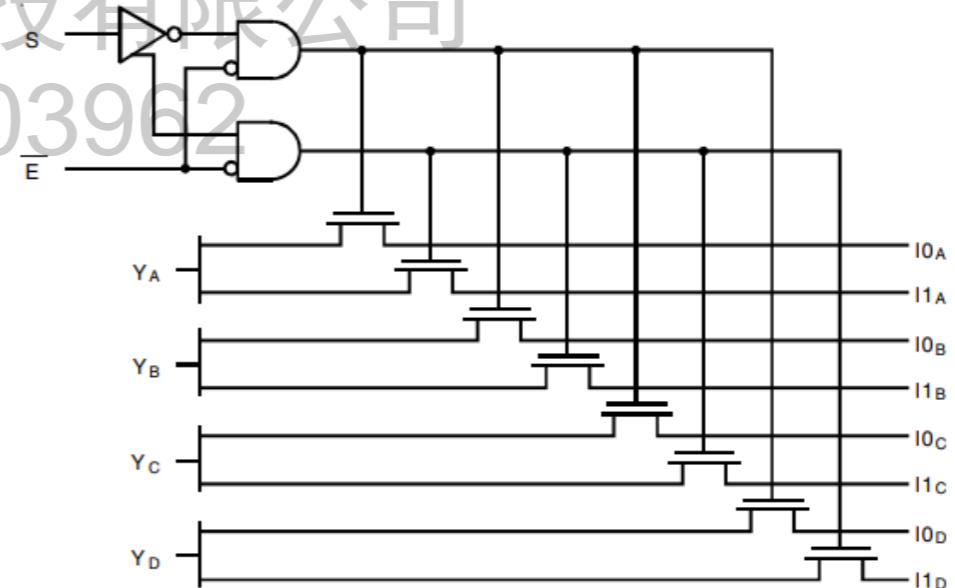
## Feature

- Switch type: DPDT (2X)
- VCC operation: 2.3V to 3.6V
- N channel FET switches with no parasitic diode to VCC
  - Isolation under power-off conditions
  - No DC path to VCC or GND
  - 5V tolerant in OFF and ON state
- 5V tolerant I/Os
- Low RON: 4Ω typical
- Low I/O capacitance, 4pF typical
- Flat RON characteristics over operating range
- Rail-to-rail switching 0 - 5V
- Bidirectional dataflow with near-zero delay: no added ground bounce
- Excellent RON matching between channels
- High bandwidth: up to 500MHz
- LVTTTL-compatible control Inputs
- Undershoot Clamp Diodes on all switch and control Inputs
- Packages: TSSOP-16

## Application

- Servers
- Hot-swapping
- Multiplexing/demultiplexing
- Low distortion analog switch
- Replaces mechanical relay
- ATM 25/155 switching

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# CMOS Low Voltage, 4 $\Omega$ Quad, SPST Switches– DIO1713

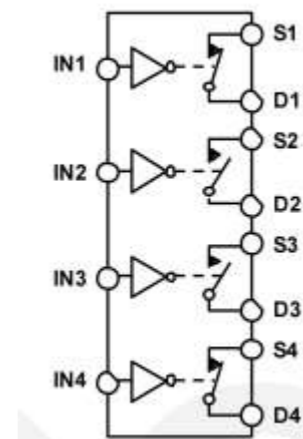


## Feature

- 1.8 V to 5.5 V single supply
- Low on resistance (2.5  $\Omega$  Typ)
- Low on resistance flatness
- -3 dB bandwidth > 200 MHz
- Rail-to-rail operation
- 16-lead TSSOP and SOIC packages
- Fast switching times:  $t_{ON} = 16$  ns,  $t_{OFF} = 10$  ns
- Typical power consumption (0.01 $\mu$ W)
- TTL/CMOS compatible
- Qualified for automotive applications

## Application

- USB 1.1 signal switching circuits
- Cell phones
- PDAs
- Battery-powered systems
- Communication systems
- Sample hold systems
- Audio signal routing
- Video switching
- Mechanical reed relay replacement



# CMOS Quad Bilateral Analog Switch– DIO3714

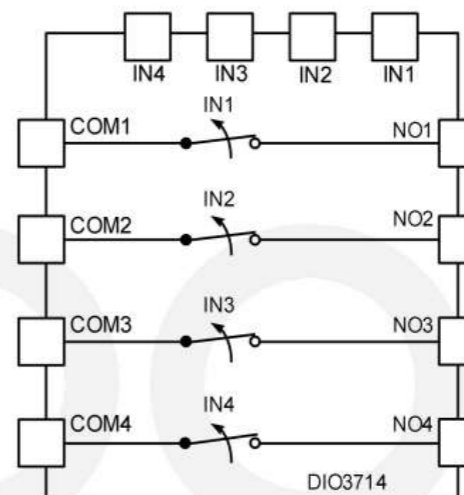
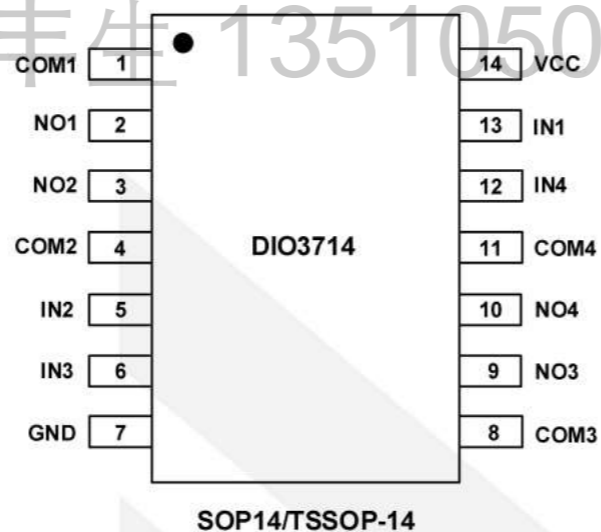


## Feature

- Operating voltage range: 2.3V to 5.5V
- -3 dB Bandwidth: 200 MHz
- Single supply voltage: 1.8 V to 5.5 V
- Low on-resistance: 4.5  $\Omega$  (typ) with 4.5 V supply
- High off-isolation: -72 dB ( $R_L = 50 \Omega$ ,  $f = 1 \text{ MHz}$ )
- Guaranteed on-resistance match between channels
- Extremely low off-state switch leakage: 5 nA (typ) at 25°C
- Operating temperature range: -40 to 125 °C
- Packages: SOP-14 and TSSOP-14

## Application

- Transmission-gate logic implementation
- A/D and D/A conversion
- Signal gating
- Battery-operated equipment
- Factory automation
- Communications circuits



# 8:1 SPDT Analog Switch – DIO31308



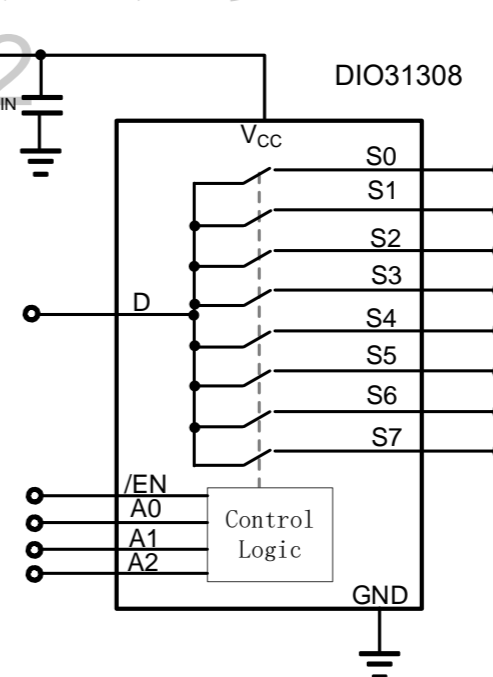
## Feature

- Wide supply range: 1.62 V to 5.5 V
- 1.8 V logic compatible
- Break-before-make switching
- Injection current control
- Back-powering protection
- **Low power consumption: 1 uA(max)**
- **Wide -3dB bandwidth: 500MHz**
- Package: TSSOP-16

## Application

- Zonal Architecture
- Body control modules
- Battery management systems (BMS)
- HVAC control module
- Automotive head unit
- Telematics
- On-board (OBC) and wireless charging

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# Ultra Low On-Resistance Dual, SPDT Analog Switch– DIO1005

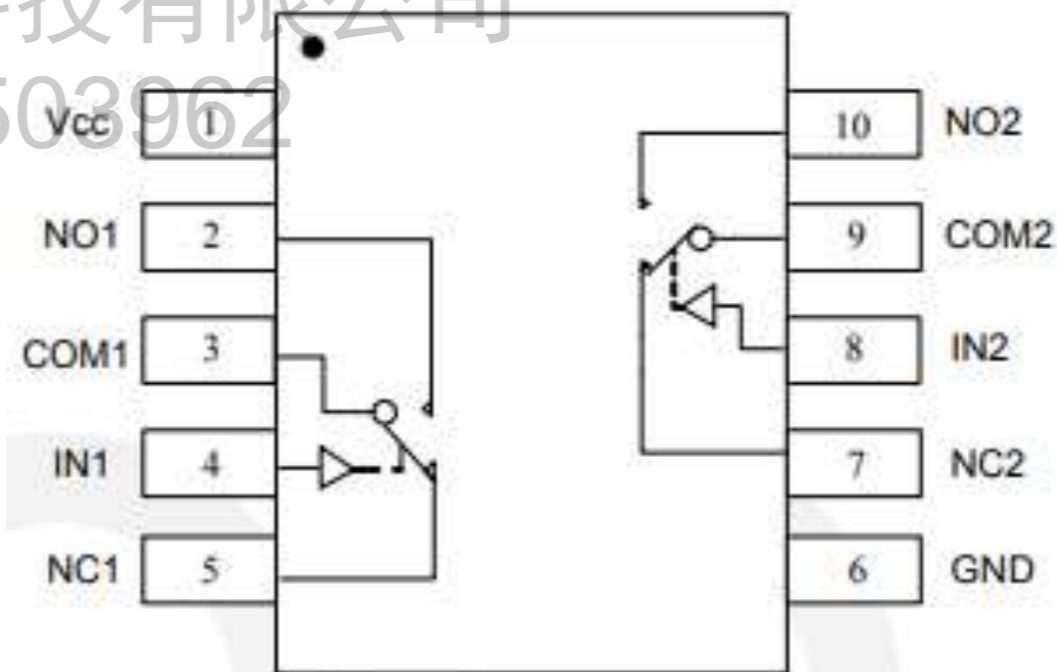


## Feature

- Switch Type: SPDT(2X)
- Voltage Operation: 1.8V to 4.3V
- Ultra-Low On Resistance:  $0.75\Omega$  @ +4.3V
- -3dB Bandwidth: 75MHz
- High Off-isolation: -78dB@100kHz
- Low Crosstalk: -100dB@100kHz
- Excellent On Resistance Matching:  $0.03\Omega$
- Low Total Harmonic Distortion (THD)
- Rail-to-Rail Input and Output Operation
- Break-Before-Make Switching
- Green Packaged:DFN3\*3-10 and MSOP-10
- 8kV HBM ESD

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals



# Ultra Low On-Resistance Dual, SPDT Analog Switch– DIO1268



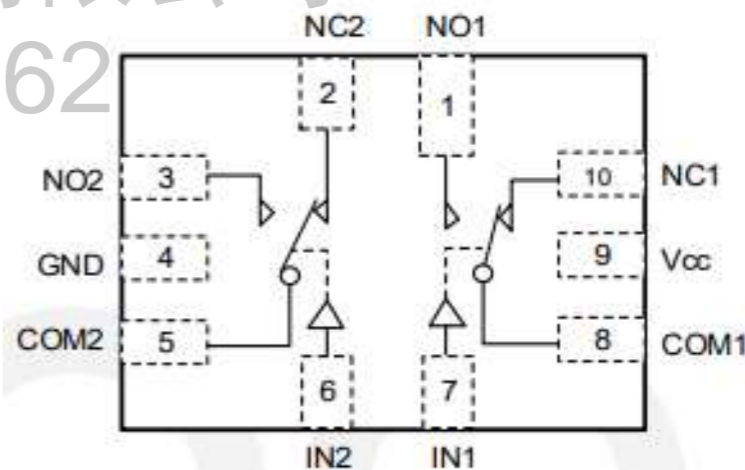
## Feature

- Switch Type: SPDT(2X)
- Voltage Operation: 1.6V to 4.3V
- Ultra-Low On Resistance:  $0.75\Omega$  @ +4.2V
- -3dB Bandwidth: 75MHz
- High Off-isolation: -78dB@100kHz
- Low Crosstalk: -100dB@100kHz
- Excellent On Resistance Matching:  $0.03\Omega$
- Low Total Harmonic Distortion (THD)
- Rail-to-Rail Input and Output Operation
- Break-Before-Make Switching
- Green Packaged: 10-DQFN, QFN-10
- 8kV HBM ESD

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

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# 0.75Ω, Ultra Low On-Resistance Dual, SPDT Switch– DIO1523



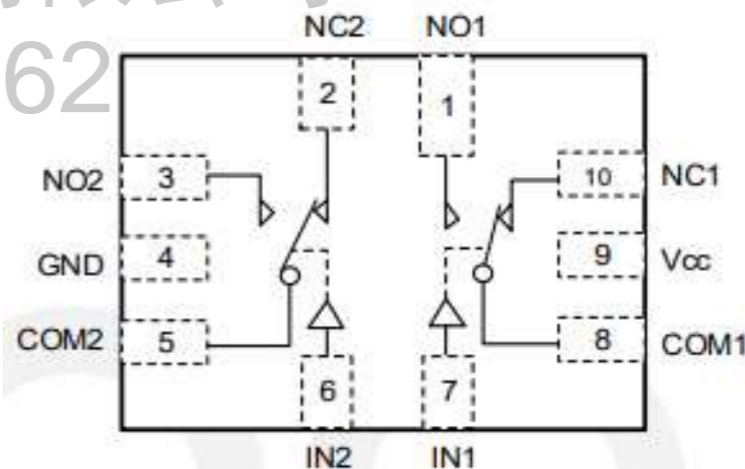
## Feature

- Switch Type: SPDT(2X)
- Voltage Operation: 1.6V to 4.2V
- Ultra-Low On Resistance: 0.75Ω @ +4.2V
- -3dB Bandwidth: 75MHz
- High Off-isolation: -78dB@100kHz
- Low Crosstalk: -103dB@100kHz
- Excellent On Resistance Matching: 0.04Ω
- Low Total Harmonic Distortion (THD)
- Rail-to-Rail Input and Output Operation
- Break-Before-Make Switching
- Green Packaged: DQFN-10
- 8kV HBM ESD

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

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# High-bandwidth and Low on-resistance Analog switch– DIO3712



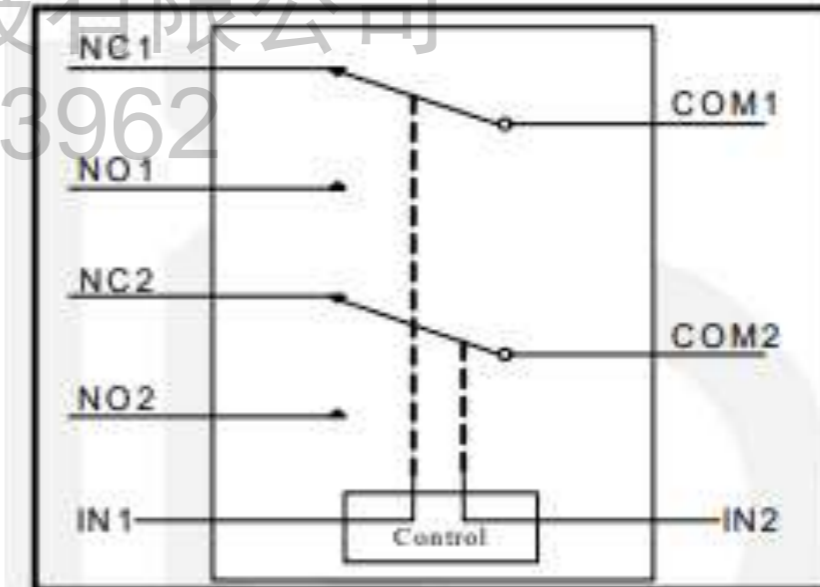
## Feature

- Over-Voltage Tolerance (OVT)
- Voltage Operation: 1.8V to 5.5V
- Low On Resistance:  $4.5\Omega$  typ at 4.5Vcc
- High Off-Isolation
- Low Crosstalk
- Low leakage current
- Low power consumption
- Wide -3dB Bandwidth:  $>300\text{MHz}$
- Low Distortion
- Packaged: DQFN-10, MSOP-10
- 8kV HBM; 1.5kV CDM ESD Rating

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

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# High-bandwidth and Low on-resistance Analog switch– DIO3713



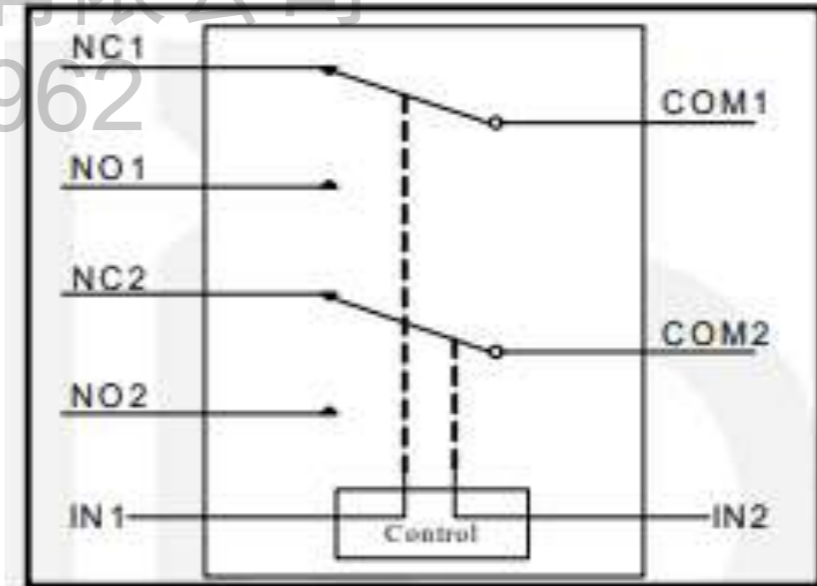
## Feature

- Over-Voltage Tolerance (OVT)
- Voltage Operation: 1.8V to 5.5V
- Low On Resistance:  $4.5\Omega$  typ at 4.5Vcc
- High Off-Isolation
- Low Crosstalk
- Low leakage current
- Low power consumption
- Wide -3dB Bandwidth: >300MHz
- Low Distortion
- Packaged: DQFN-10
- 8kV HBM; 1.5kV CDM ESD Rating

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

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# Low Ron and Low Voltage SPDT Analog switch– DIO23157



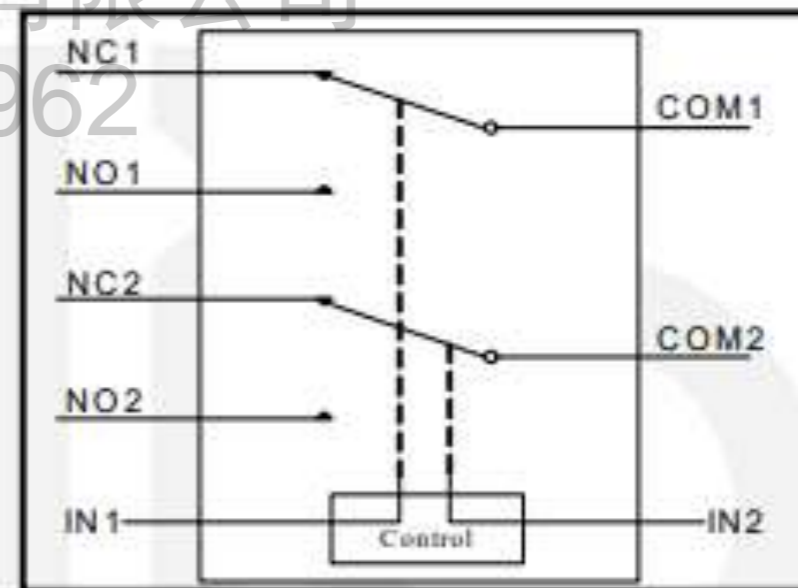
## Feature

- Over-Voltage Tolerance (OVT)
- Voltage Operation: 1.8V to 5.5V
- Low On Resistance:  $4.5\Omega$  typ at 4.5Vcc
- High Off-Isolation
- Low Crosstalk
- Low leakage current
- Low power consumption
- Wide -3dB Bandwidth: >300MHz
- Low Distortion
- Package: MSOP-10
- 8kV HBM; 1.5kV CDM ESD Rating

## Application

- Cell-Phone
- PDA
- MP3/MP4/PMP
- Portable Instrumentation
- Battery Powered Communications
- Computer Peripherals

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# Low On-Resistance, Low THD Analog Switch – DIO3166

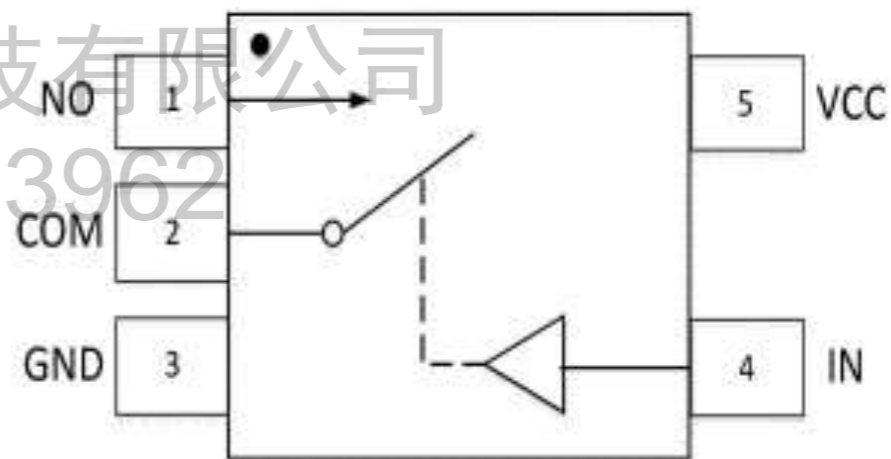


## Feature

- 5.5 tolerant on control pin
- Voltage operation: 1.65V to 5.5V
- Low on resistance:  $1\Omega @ VCC=4.2V$
- Excellent on resistance matching
- Low total harmonic distortion (THD)
- Low charge injection
- Low power consumption
- Green or **rohs** packaged: SC70-5, SOT23-5
- 1.5KV CDM ESD rating, 8kV HBM ESD

## Application

- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery powered communications
- Computer peripherals



# Low On-Resistance, Low THD Analog Switch – DIO1166



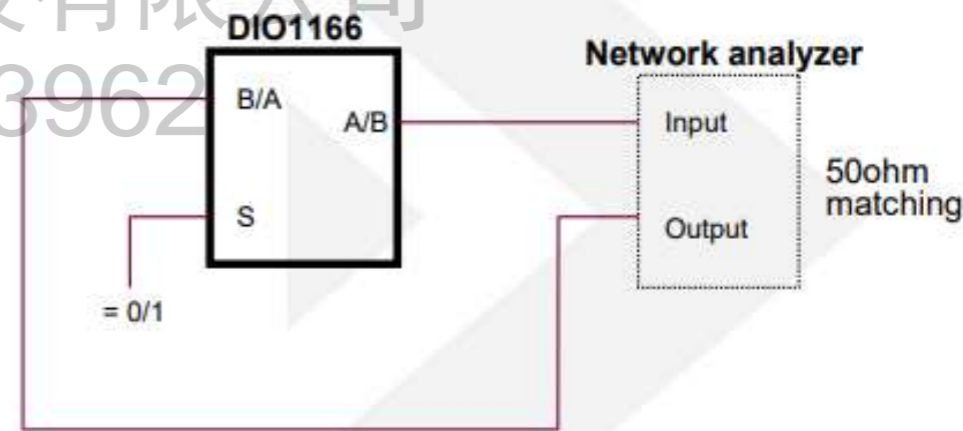
## Feature

- Over-voltage tolerance (OVT) Features at common port
- Low on capacitance: 18pF typical
- Low on resistance: 10Ω maximum
- Low power consumption: 1uA Maximum 10uA maximum ICC over an expanded voltage range ( $V_{in}=2.7V$ ,  $V_{cc}=4.3V$ )
- Wide -3dB Bandwidth: >300MHz
- Wide supply range: 1.65~5.5V
- Packaged: 5-Lead SC70
- 8kV HBM ESD rating, 2kV CDM ESD rating

## Application

- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery powered communications
- Computer peripherals

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# Low On-Resistance, Low THD Analog Switch – DIO3157x

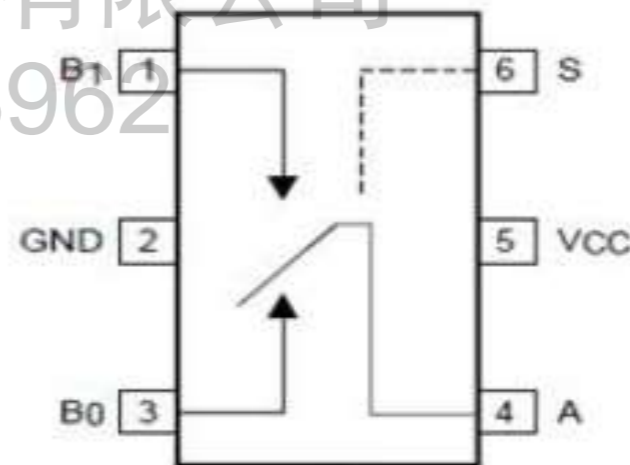


## Feature

- Low on capacitance: 30 pF (typical)
- Low on resistance: 10  $\Omega$  (maximum)
- Low power consumption: 1  $\mu$ A Maximum 10  $\mu$ A maximum ICC over an expanded voltage range ( $V_{IN} = 2.7$  V,  $V_{CC} = 4.3$  V)
- Wide -3 dB bandwidth: >200 MHz
- Wide supply range: 1.65~5.5 V
- Packaged: 6-lead SC70 and SOT23
- 8 kV HBM ESD rating, 2 kV CDM ESD rating

## Application

- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery powered communications
- Computer peripherals



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# SPST Switch– DIO1159C



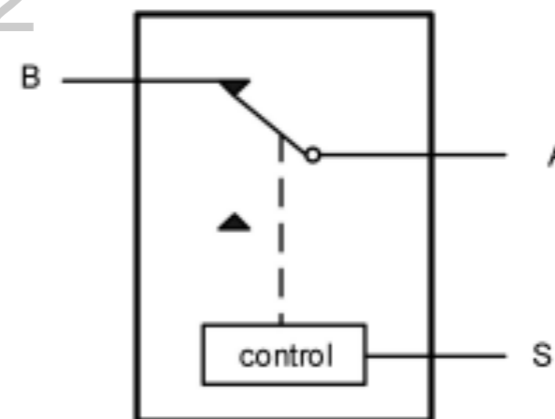
## Feature

- 5.5 V tolerant on control pin
- Voltage operation: 1.65 V to 5.5 V
- Low on resistance: 1  $\Omega$  at 5 V VCC
- Excellent on-resistance matching
- Low total harmonic distortion (THD)
- Low charge injection
- Low power consumption
- Green or RoHS packaged: DFN1\*1-6

## Application

- Servers
- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery-powered communications
- Computer

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# SPDT Switch– DIO1159B



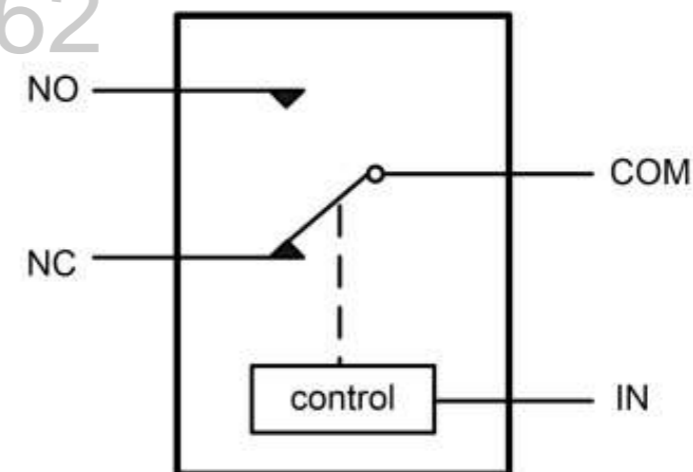
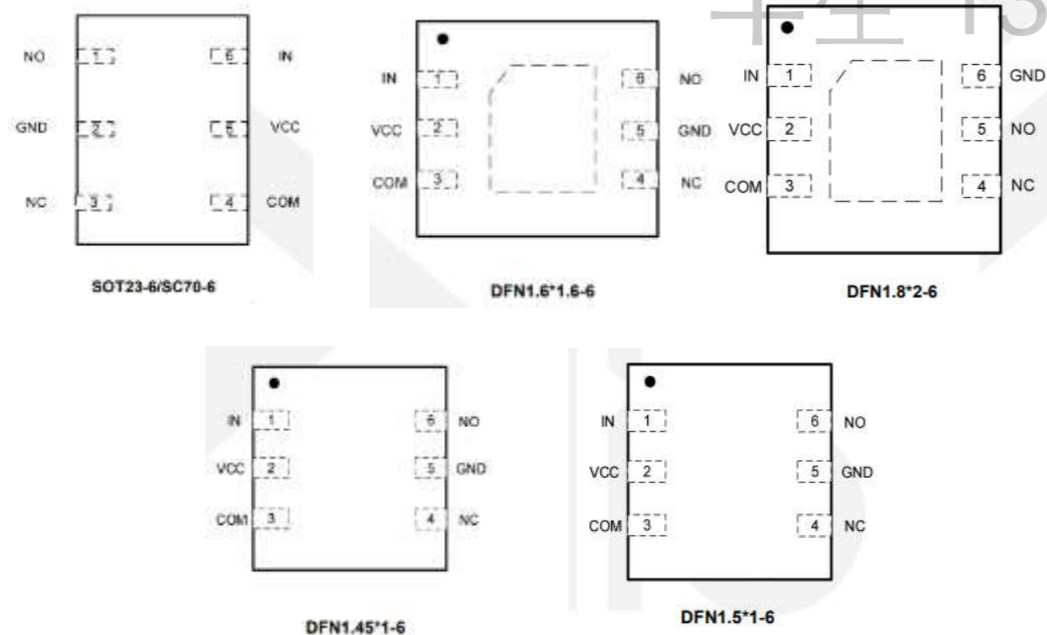
## Feature

- 5.5 V tolerant on control pin
- Voltage operation: 1.65 V to 5.5 V
- Low on resistance: 1  $\Omega$  at 5 V VCC
- Excellent on-resistance matching
- Low total harmonic distortion (THD)
- Low charge injection
- Low power consumption
- Green or RoHS packaged: SC70-6, SOT23-6, DFN-6

## Application

- Servers
- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery-powered communications
- Computer

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# SPDT Switch– DIO1159E



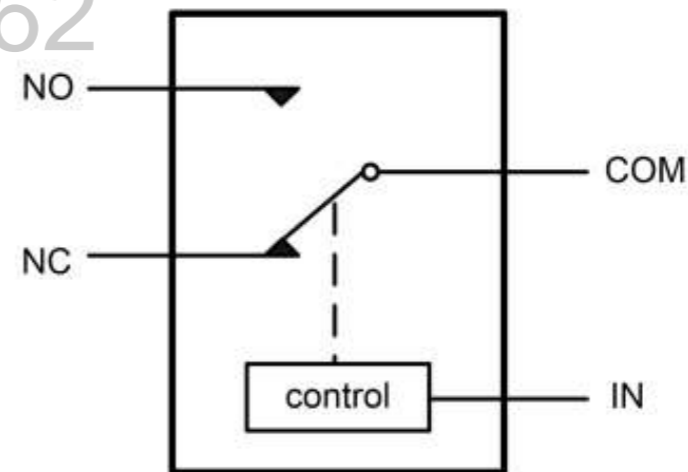
## Feature

- 5.5 tolerant on control pin
- Voltage Operation: 1.65V to 5.5V
- Low on resistance:  $1\Omega$  @ 5V VCC
- Excellent on resistance matching
- Low total harmonic distortion (THD)
- Low charge injection
- Low power consumption
- Green or RoHS packaged: DFN1.45\*1-6

## Application

- Servers
- Cell phones
- PDAs and MP3s
- Portable instrumentation
- Battery-powered communications
- Computer

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# SIM Level Shifter with EMI Filter and ESD Protection– DIO74557/S

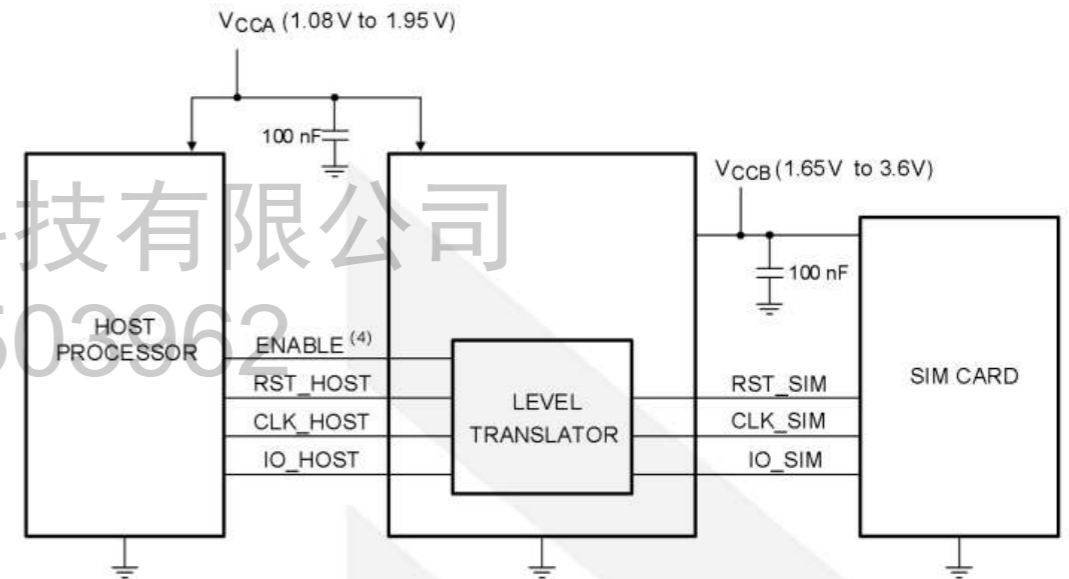


## Feature

- Clock speeds up to 10 MHz clock
- SIM card supply voltages range: from 1.65 V to 3.6 V
- Host micro-controller operating voltage range: 1.08V to 1.95V
- Compliant with all ETSI, IMT-2000 and ISO- 7816-3 SIM/Smart card interface requirements
- Automatic level translation of I/O, RST and CLK between SIM card and host side interface with capacitance isolation
- Automatic enable and disable through VCCB
- Integrated pull-up and pull-down resistors: no external resistors required
- Integrated EMI filters suppress higher harmonics of digital I/Os
- Level-shifting buffers keep ESD stress away from the host
- ESD protection: IEC61000-4-2 level 4, contact and air discharge on all SIM card-side pins, VCCB, and GND are 8 kV and 15 kV respectively
- Packaged in WLCSP-9 (0.3 mm pitch) and QFN1.8\*1.4-10

## Application

- Mobile and personal phones
- Wireless modems
- SIM card terminals



- 通过高通的参考设计



# SIM Level Shifter with EMI Filter and ESD Protection– DIO74559

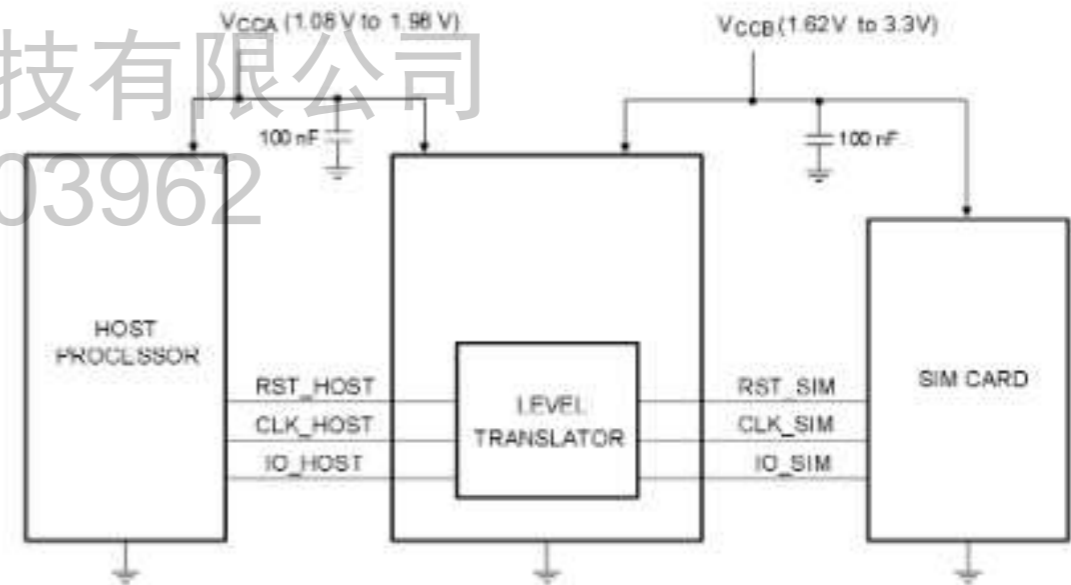


## Feature

- Clock speeds up to 25 MHz clock
- SIM card supply voltages range: from 1.62 V to 3.3 V
- Host micro-controller operating voltage range: 1.08V to 1.98V
- Compliant with all ETSI, IMT-2000 and ISO- 7816-3 SIM/Smart card interface requirements
- Automatic level translation of I/O, RST and CLK between SIM card and host side interface with capacitance isolation
- High VCCB\_DIS(AC) switching threshold, facilitating fast shutdown with VCCB power-down
- Automatic enable and disable through VCCB
- No external resistors required with integrated pull-up and pull-down resistors
- Integrated pull-up and pull-down resistors: no external resistors required
- Integrated EMI filters suppress higher harmonics of digital I/Os
- Level-shifting buffers keep ESD stress away from the host
- ESD protection: IEC61000-4-2 level 4, contact and air discharge on all SIM card-side pins, VCCB, and GND are 8 kV and 15 kV respectively
- Packaged in WLCSP-9 (0.35 mm pitch)

## Application

- Mobile and personal phones
- Wireless modems
- SIM card terminals

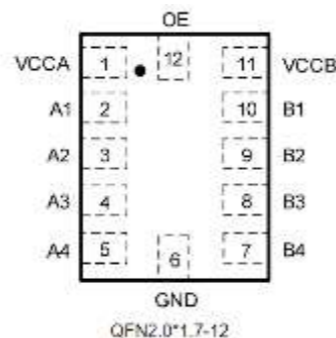
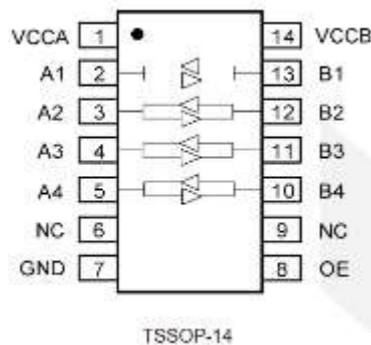


# 4-bit Level shifter-DIO7B104



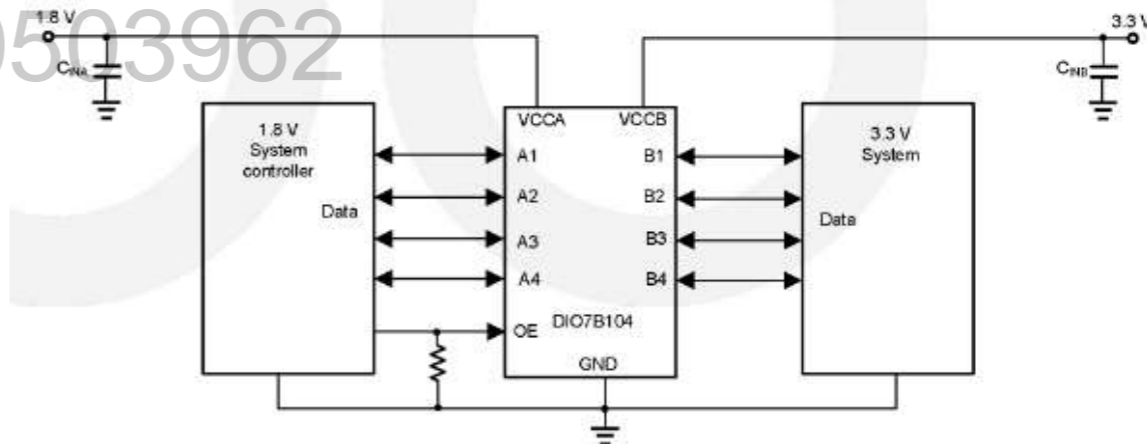
## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **110Mbps** (Push Pull)
- Low supply current:  $I_{CCA}+I_{CCB}= 1 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- No power-supply sequencing required. VCCA or VCCB can be ramped first
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 8000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range: -40 to 85°C



## Application

- Headsets
- Smartphones
- Tablets
- Desktop PC



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# 8-bit Level shifter-DIO7B108



## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **110Mbps** (Push Pull)
- Low supply current:  $I_{CCA}+I_{CCB}= 2 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- No power-supply sequencing required. VCCA or VCCB can be ramped first
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 8000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range:  $-40$  to  $85^{\circ}C$

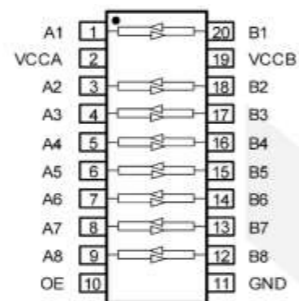
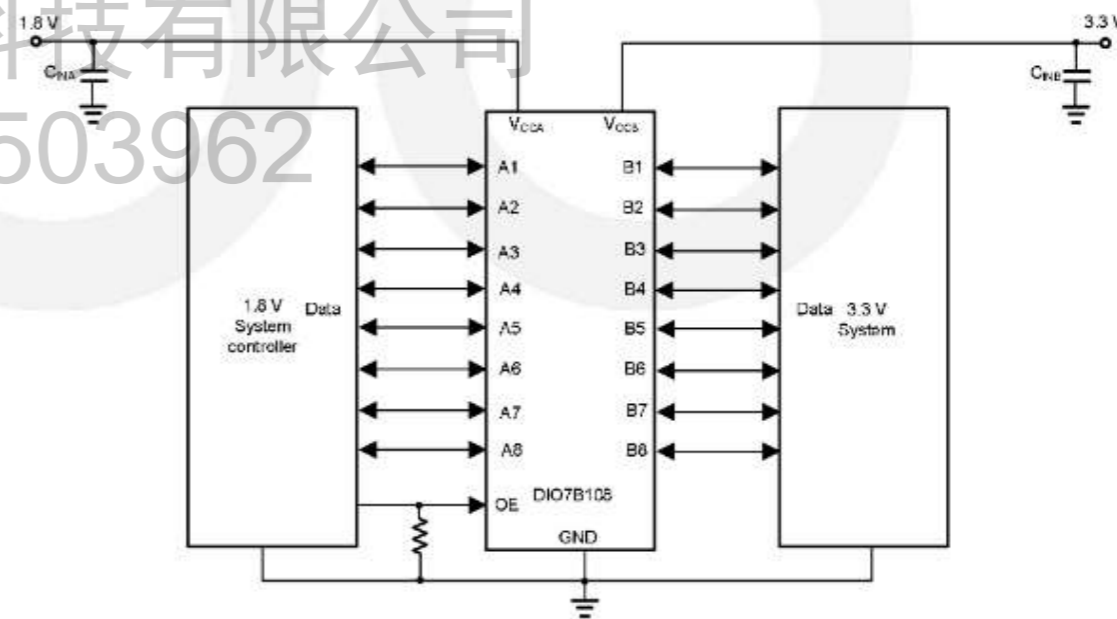


Figure 1. TSSOP-20 (Top view)

## Application

- Headsets
- Smartphones
- Tablets
- Desktop PC



# I2C Level shifter with Rise Time Accelerators– DI07416

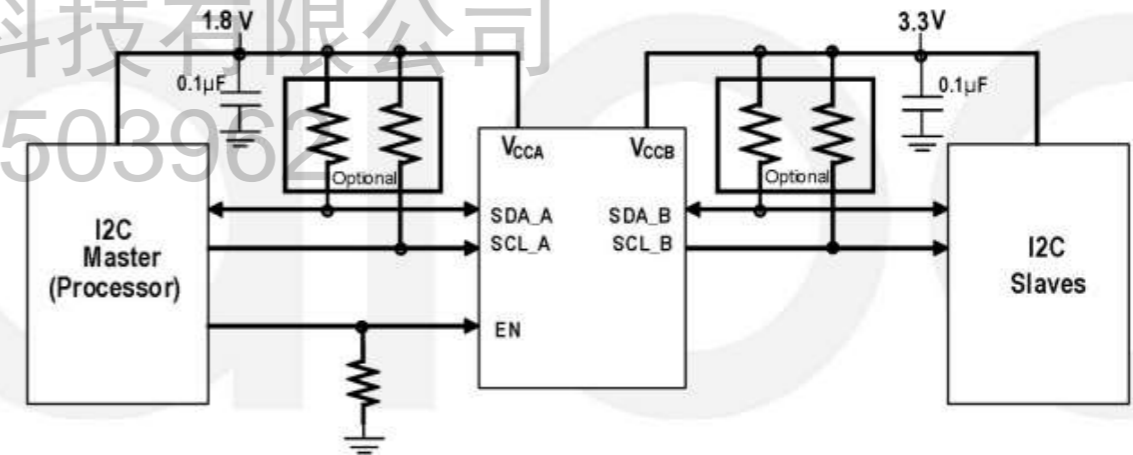


## Feature

- Ultra-low-voltage I2C translator with rise time accelerators
- Operating VCC range: 1.08V to 3.6V
- The frequency of SCL: 1MHz (fast-mode plus)
- Low Ioff: 2.5 $\mu$ A when either VCCA or VCCB = 0V
- 2-bit bidirectional translator for SDA and SCL lines in I2C applications
- Internal 10K $\Omega$  pull-up resistor on all SDA and SCL pins are enabled based on respective VCC voltage
- VCC isolation feature: if either VCC input is at GND, both parts are high impedance
- Packaged in DFN1.35mm\*0.8mm-8, DFN1.4mm\*1.0mm-8, TSOT23

## Application

- Wearables
- GPIO
- Personal electronics



# 2-bit Level shifter-DIO7B102



## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **110Mbps** (Push Pull)
- Low supply current:  $I_{CCA}+I_{CCB}= 1 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- No power-supply sequencing required. VCCA or VCCB can be ramped first
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 8000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range: -40 to 85°C

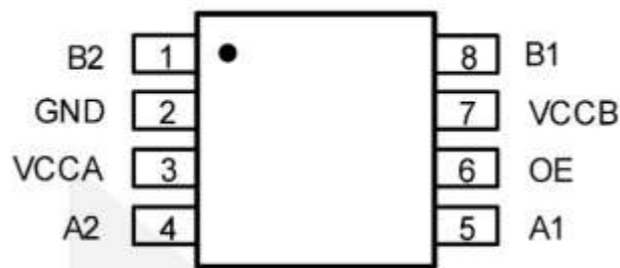
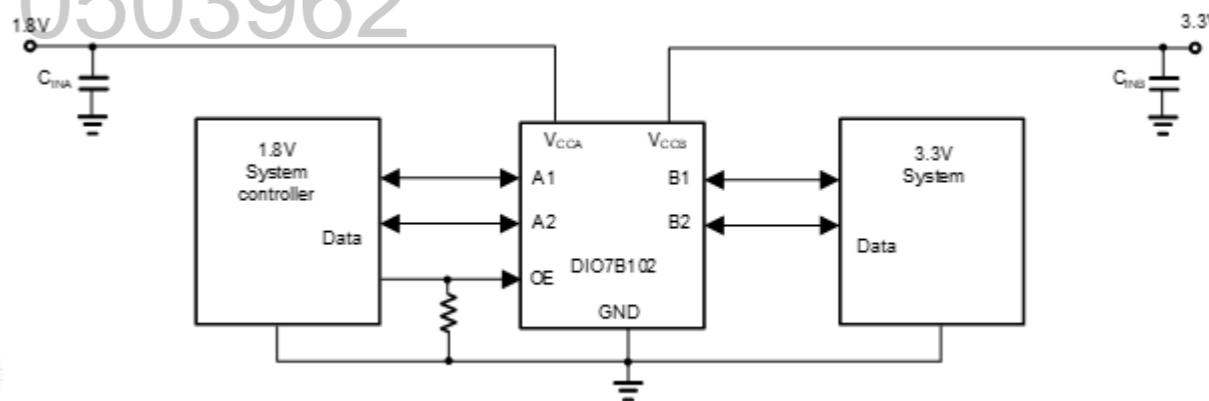


Figure 1. VSSOP-8 (Top view)

## Application

- Handsets
- Smartphones
- Tablets
- Desktop PCs



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# 8-bit Level shifter-DIO7S108



## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **100Mbps** (Push Pull), 2Mbps(Open drain)
- Low supply current:  $I_{CCA}+I_{CCB}= 1 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 7000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range:  $-40$  to  $85^{\circ}C$

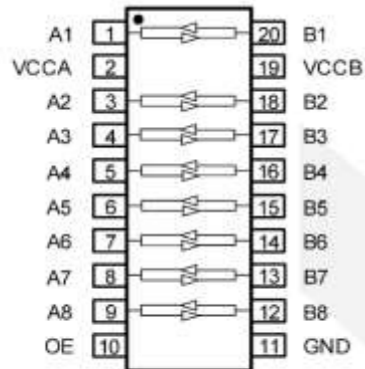


Figure 1. TSSOP-20 (Top view)

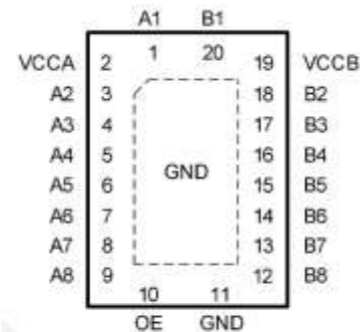
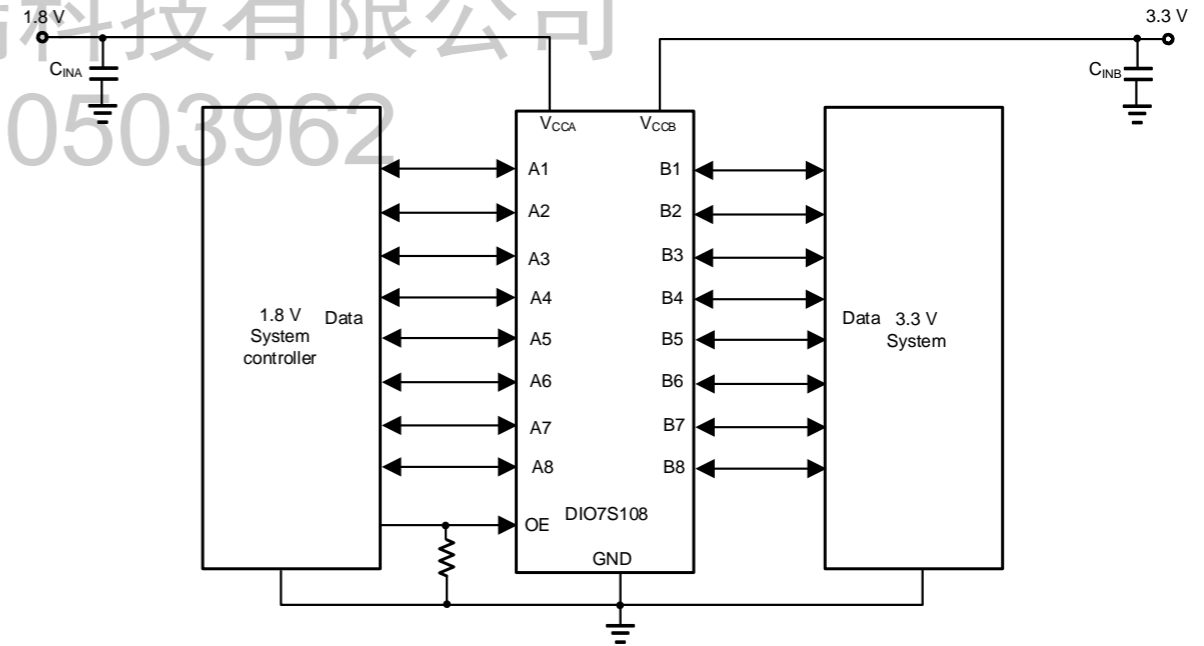


Figure 2. QFN-20 (Top view)

## Application

- Headsets
- Smartphones
- Tablets
- Desktop PC

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# 4-bit Level shifter-DIO7S104



## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **120Mbps** (Push Pull), 2Mbps(Open drain)
- Low supply current:  $I_{CCA}+I_{CCB}= 1 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 7000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range:  $-40$  to  $85^{\circ}C$

## Application

- Headsets
- Smartphones
- Tablets
- Desktop PC

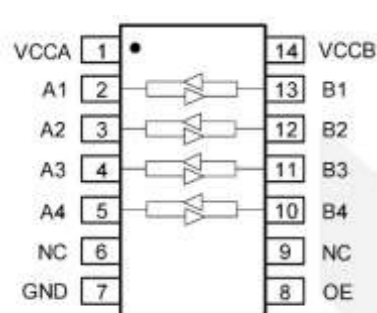


Figure 1. TSSOP-14 (Top view)

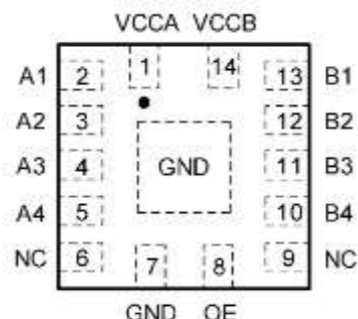


Figure 2. VQFN-14 (Top view)

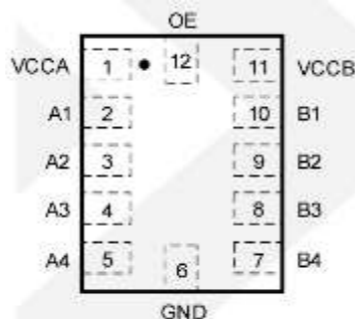
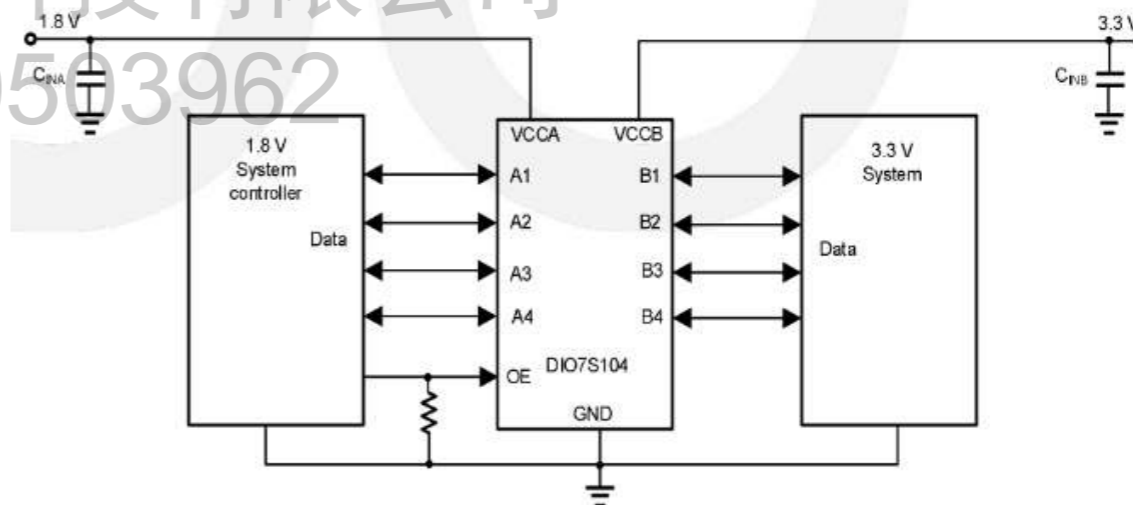


Figure 3. UQFN-12 (Top view)



# 2-bit Level shifter-DIO7S102



## Feature

- Wide supply voltage range:  
1.08V to 3.6 V on A Port  
1.65 V to 5.5 V on B Port ( $V_{CCA} \leq V_{CCB}$ )
- Maximum Data Rates: **100Mbps** (Push Pull), 2Mbps(Open drain)
- Low supply current:  $I_{CCA}+I_{CCB}= 1 \mu A$
- VCC isolation feature: If either VCCX input is at GND, all outputs are in the High-Impedance State
- OE input circuit referenced to VCCA
- IOFF supports partial power-down mode operation
- ESD Protection Exceeds JESD 22  
 $\pm 7000$  V Human-Body Model  
 $\pm 2000$  V Charged-Device Model
- Operating temperature range:  $-40$  to  $85^{\circ}C$

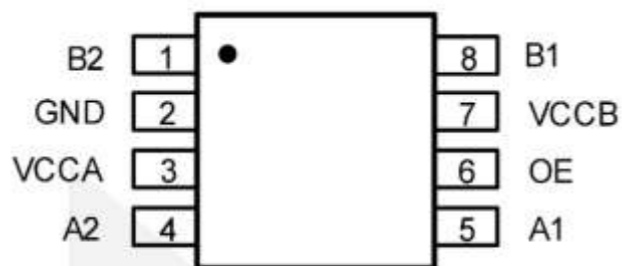
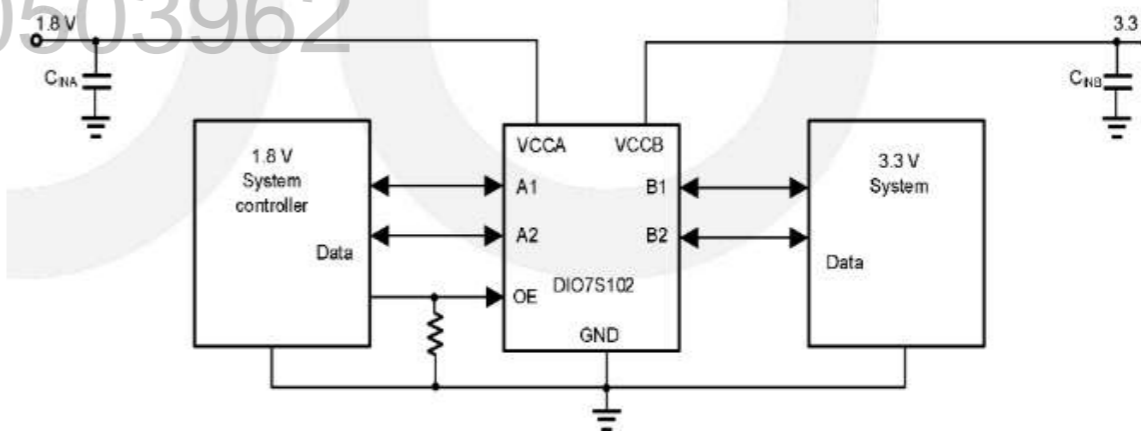


Figure 1. VSSOP-8 (Top view)

## Application

- Handsets
- Smartphones
- Tablets
- Desktop PCs



# 1-Bit Unidirectional Voltage-Level Translator– DIO74134

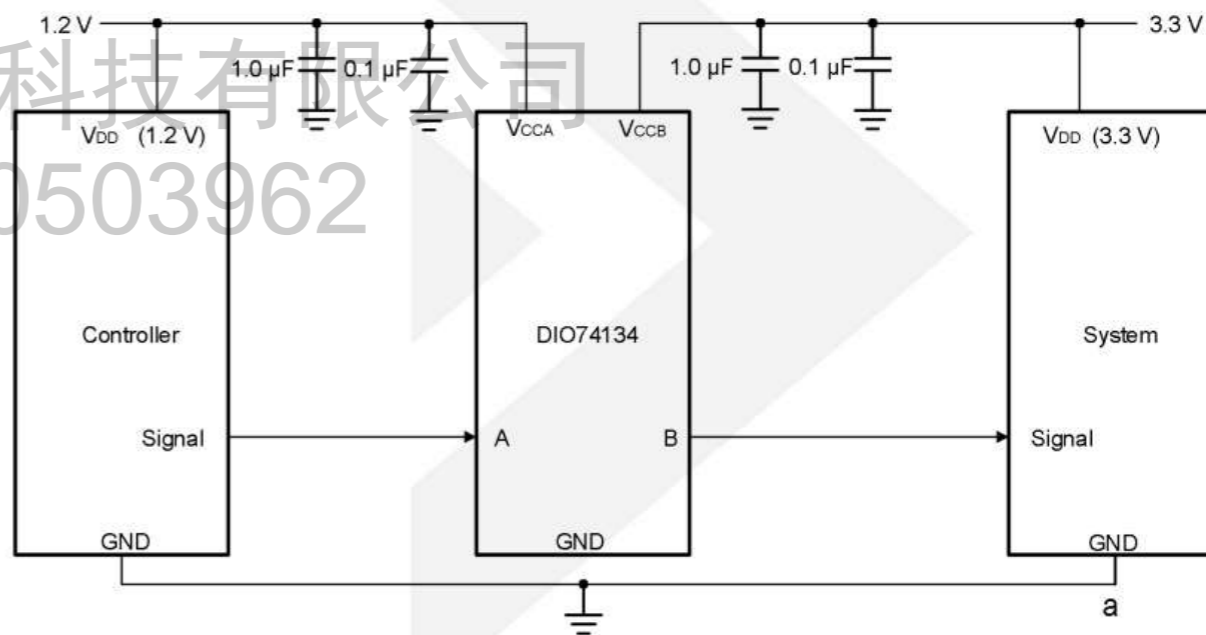


## Feature

- Operating VCC Range : 1.08V to 3.6V
- Balanced Propagation Delays:  $t_{PLH} = t_{PHL}$  (1.8V to 3.3V Translation Typical)
- Output Drive current:  $\pm 6\text{mA}$  at 3V
- Low Static-Power Consumption: Maximum of  $20\mu\text{A}$  ICC
- Supports Partial Power-Down-Mode Operation
- VCC Isolation Feature: If VCCA Input is at GND, B Port Is in the High-Impedance state
- Input Hysteresis Allows Slow Input Transition and Better Switching Noise Immunity at Input
- Packaged in SC70-5, DFN1.45\*1-6 and DFN1\*1-6

## Application

- Enterprise
- Industrial
- Personal Electronics
- Telecommunication



## 2.8W, Monaural Filter-Free, Class-D Audio Amplifier– DIO2140

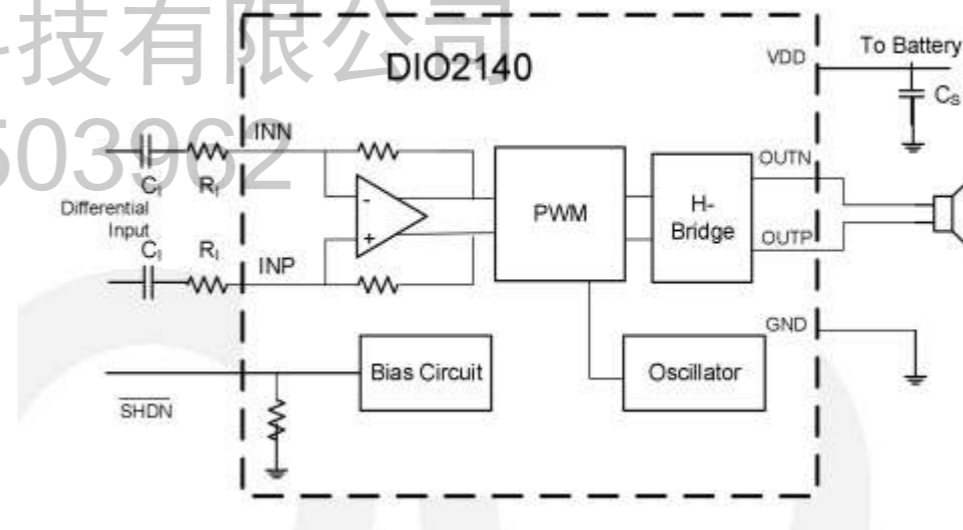


### Feature

- Maximum output: > 2.5 W, output under 4  $\Omega$  load
- Distortion rate (THD): 0.05% (VDD = 5.0 V, PO = 1 W)
- High efficiency up to 83% at 400 mW
- Filter-free Class-D architecture
- Needs only three external components
- Short circuit protection function
- Thermal shutdown function
- Under voltage lockout function
- Green package: DFN-8 and MSOP

### Application

- Wireless or cellular handsets and PDAs
- Personal navigation devices
- General portable audio devices



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# 5Gbps USB 3.2 Gen1 USB-A Redriver– DIO36812



## Feature

- Dual-Channel, Single-lane USB 3.2 Gen1 5Gbps Redriver with 1.8V Power Supply
- Support full USB 3.2 Gen1 mode switching with automatic power saving
- Ultra-Low-Power Architecture
  - Power down mode: 20  $\mu$ A
  - Suspend mode: 150  $\mu$ A
  - Power saving mode: 2.5 mA
  - Active: 130 mA
- Optimal Receiver Equalization
  - of 4, 6, 10 and 14dB
- Output Driver De-emphasis
  - of 0, 2, 2.5 and 4 dB
- Support low frequency periodic signaling (LFPS) detection
- Support hot plug with automatic receiver detection
- Integrated 50  $\Omega$  termination resistors for RX & TX Internal soft start limits the inrush current
- Operating temperature range: -40 $^{\circ}$ C to 85  $^{\circ}$ C

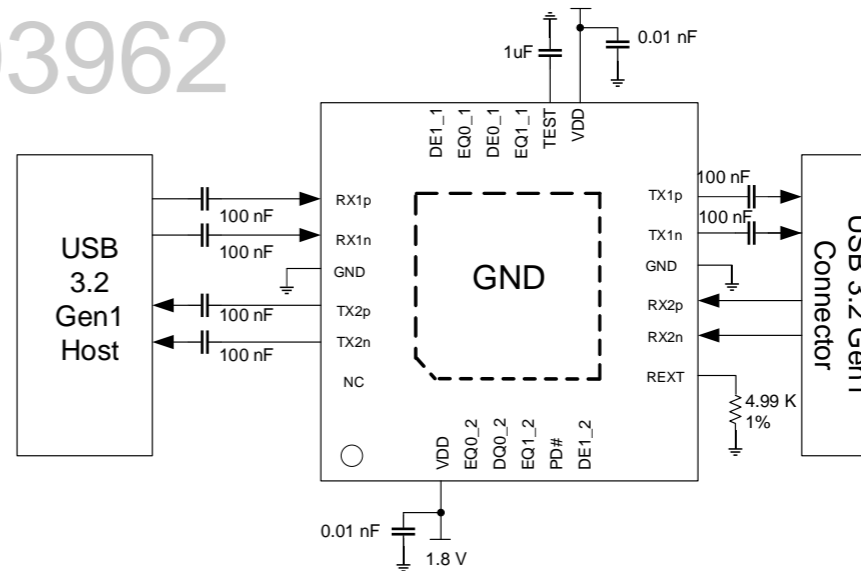
## 主要应用

- Desktop and laptop computers
- Workstations
- Docking stations

## 优势

- 1.8V电源, 超低功耗
- Power Down模式电流仅20uA

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# USB 3.2 Gen2 and DP1.4 USB-C Redriver– DIO37814/5

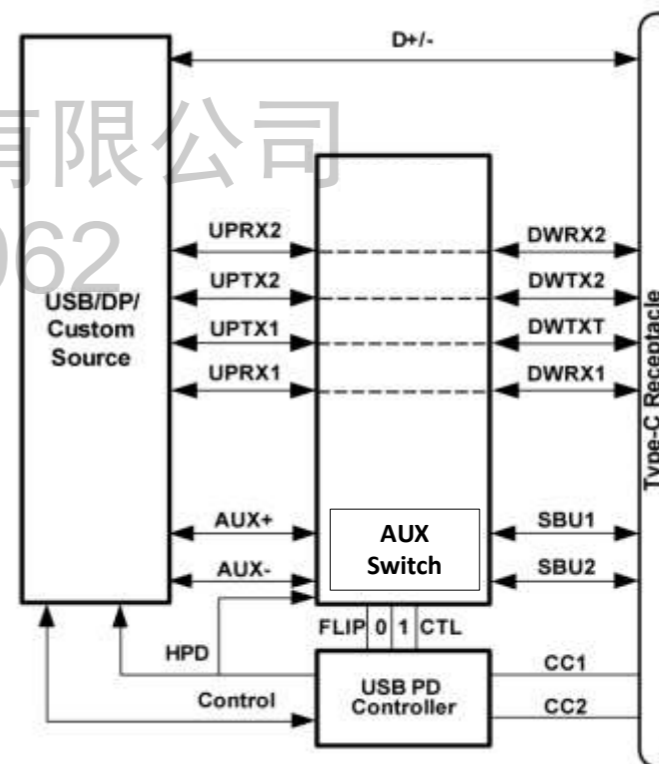


## Feature

- Protocol-agnostic reversible 4 channel linear redriver
- Single supply: 1.8 V
- USB Type-C with USB 3.2 Gen 2 and DisplayPort 1.4 as alternate mode
- Linear equalization up to 11 dB at 4.05 GHz
- GPIO and I2C control for channel direction and equalization
- Power management by monitoring USB power states and snooping DP link training
- Configuration through GPIO or I2C
- Have Aux Switch(only DIO37815)
- Hot-Plug capable
- -40 to 85 °C operating temperature range
- DIO37814:Package: QFN2.3\*3.7-26
- DIO37815:Package: QFN3.1\*4.4-34

## Application

- Tablets
- Desktops
- Laptops
- Docking station



Only DIO37815 have AUX Switch.



# USB 3.2 Gen2 and DP1.4 USB-C Redriver– DIO37814/5



Part Number	DIO37814	DIO37815
VIN	1.71~1.89V	1.71~1.89V
Channels	4	4
Protocol	USB3.2 Gen2(10Gbps) DP1.4(8.1Gbps)	USB3.2 Gen2(10Gbps) DP1.4(8.1Gbps)
Have Aux switch	No	Yes
Control	GPIO and I2C	GPIO and I2C
Package	QFN2.3*3.7-26	QFN3.1*4.4-34

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# Multiple Channel $\pm 1^\circ\text{C}$ Temperature Sensors with Beta Compensation—DIO1413/DIO1414

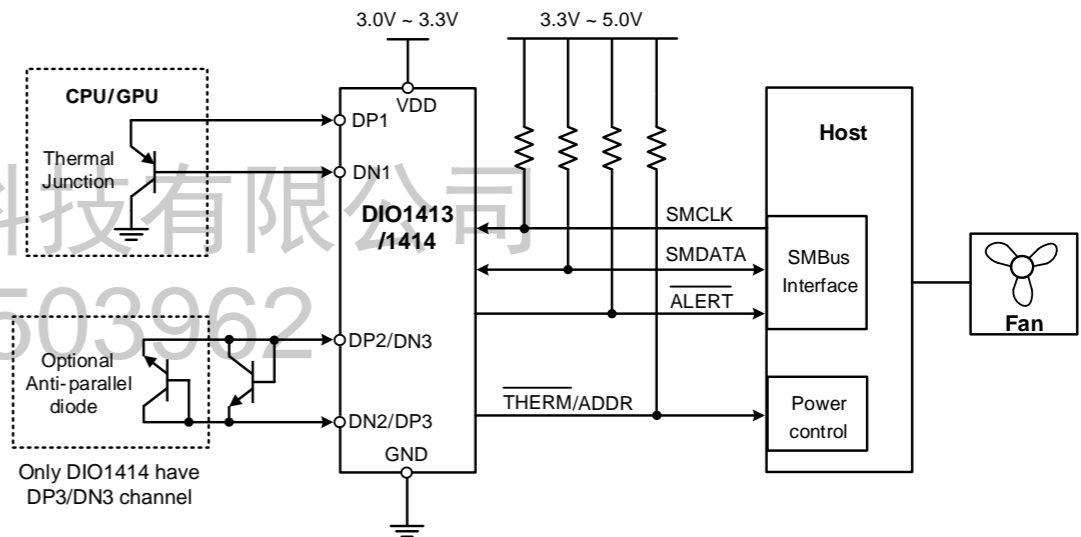


## Feature

- Wide supply voltage range: 3.0V to 3.6V
- Up to three external diode temperature monitors
  - Maximum inaccuracy of  $\pm 1^\circ\text{C}$  (20 ~ 110  $^\circ\text{C}$ )
  - 12-bit resolution: 0.0625 $^\circ\text{C}$
  - Two external diode temperature monitors for DIO1413
  - Three external diode temperature monitors for DIO1414
- One internal diode temperature monitor
  - Maximum inaccuracy of  $\pm 1^\circ\text{C}$  (20 ~ 110  $^\circ\text{C}$ )
  - 12-bit resolution: 0.0625 $^\circ\text{C}$
- **Resistance Error Correction**
- **Automatic BJT Type Detection**
- Programmable High Limit and Low Limit ( $\overline{ALERT}$  pin)
- Programmable Therm Limit ( $\overline{THERM}/ADDR$  pin)
- Programmable SMBus (or I2C) address
  - 1001\_100(r/w(\_)): DIO1413A / DIO1414A
  - 0011\_000(r/w(\_)): DIO1413B
  - Selectable by  $\overline{THERM}/ADDR$  pull-up: DIO1413C / DIO1414C
- Operating temperature range: -40 $^\circ\text{C}$  to 125  $^\circ\text{C}$
- Package: DFN3\*3-10 and MSOP-10

## Application

- Server
- Notebook Computers
- Industrial



### 产品优势:

- $\pm 1^\circ\text{C}$ 高精度, 线性度好, 出厂预校准
- 三极管类型自动检测功能和 $\beta$ 补偿
- 电阻误差校正功能
- 两级可编程温度报警功能
- 管脚兼容EMC1413&EMC1414数字温度传感器芯片



# DIO1413/DIO1414 VS EMC1413/EMC1414



Part Number	DIO1413	EMC1413	DIO1414	EMC1414
Supply voltage(V)	3-3.6V	3-3.6V	3-3.6V	3-3.6V
number of channels	Remote Channel: 2 Local Channel: 1	Remote Channel: 2 Local Channel: 1	Remote Channel: 3 Local Channel: 1	Remote Channel: 3 Local Channel: 1
Inaccuracy (Max) (+/- °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)
Temp resolution (Max)(bits)	12-bit resolution: 0.0625°C	11-bit resolution: 0.125°C	12-bit resolution: 0.0625°C	11-bit resolution: 0.125°C
Standby supply current	120uA	170uA	120uA	170uA
I2C Address	A:1001_100 B:0011_000 C:Selectable by THERM /ADDR pull-up resistance	1-A:1001_100 3-A:0011_000 A-A:Selectable by THERM /ADDR pull-up resistance	A:1001_100 B:0011_000 C:Selectable by THERM /ADDR pull-up resistance	1-A:1001_100 A-A:Selectable by THERM /ADDR pull-up resistance
Operating temperature range °C	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Package	MSOP-10,DFN-3*3-10	MSOP-10,DFN-3*3-10	MSOP-10,DFN-3*3-10	MSOP-10,DFN-3*3-10



# Multiple Channel $\pm 1^{\circ}\text{C}$ Temperature Sensors with Beta Compensation – DIO1412

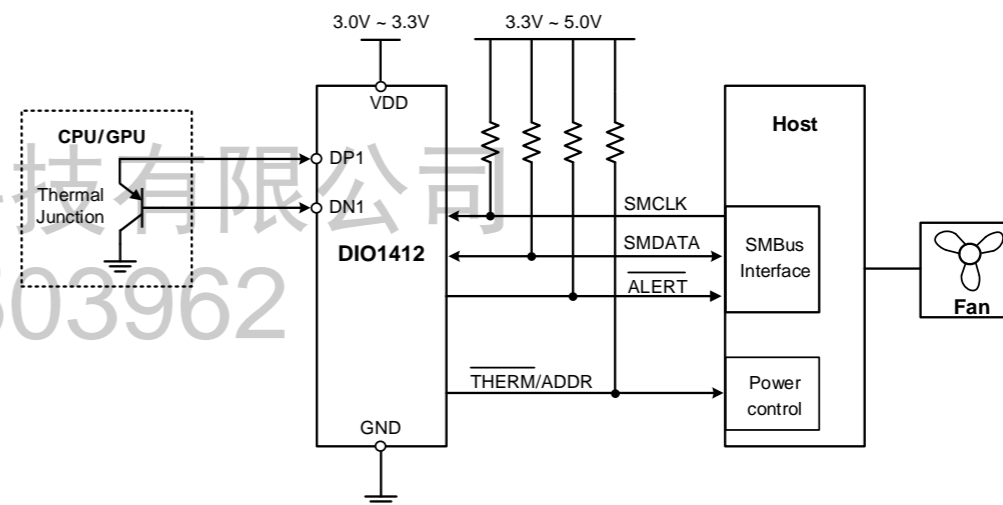


## Feature

- Wide supply voltage range: 3.0V to 3.6V
- One external diode temperature monitors
  - Maximum inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110  $^{\circ}\text{C}$ )
  - 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- One internal diode temperature monitor
  - Maximum inaccuracy of  $\pm 1^{\circ}\text{C}$  (20 ~ 110 $^{\circ}\text{C}$ )
  - 12-bit resolution: 0.0625 $^{\circ}\text{C}$
- Resistance Error Correction
- Automatic BJT Type Detection
- Programmable High Limit and Low Limit ( $\overline{ALERT}$  pin)
- Programmable Therm Limit ( $\overline{THERM}/ADDR$  pin)
- Programmable SMBus (or I2C) address
  - 1001\_100(r/w(\_)): DIO1412
  - Selectable by  $\overline{THERM}/ADDR$  pull-up: DIO1412C
- Operating temperature range: -40 $^{\circ}\text{C}$  to 125  $^{\circ}\text{C}$
- Package: DFN2\*2-8 and MSOP-8

## Application

- Server
- Notebook Computers
- Industrial



### 产品优势:

- $\pm 1^{\circ}\text{C}$ 高精度, 线性度好, 出厂预校准
- 三极管类型自动检测功能和 $\beta$ 补偿
- 电阻误差校正功能
- 两级可编程温度报警功能
- 管脚兼容EMC1412/TMP431/TMP451数字温度传感器芯片



# DIO1412 VS TMP432/TMP451/EMC1412



Part Number	DIO1412	TMP432	TMP451	EMC1412
Company	DIOO	TI	TI	Microchip
Supply voltage(V)	3-3.6V	2.7-5.5V	1.7-3.6V	3-3.6V
Number of channels	Remote Channel: 1 Local Channel: 1	Remote Channel: 1 Local Channel: 1	Remote Channel: 1 Local Channel: 1	Remote Channel: 1 Local Channel: 1
Inaccuracy (Max) (+/- °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)	Remote Channel: 2.5°C Max(-40 ~ 125 °C) Local Channel: 5°C Max(-40 ~ 125 °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 4°C Max(-40 ~ 125 °C)	Remote Channel: 2°C Max(-40 ~ 125 °C) Local Channel: 2°C Max(-40 ~ 125 °C)
Temp resolution (Max)(bits)	12	12	12	11
Operating temperature range °C	-40 to 125	-40 to 125	-40 to 125	-40 to 125
I2C Address	DIO1412A/D:1001100 DIO1412C:上拉电阻可选	1001100	1001100	EMC1412-A:上拉电阻可选 EMC1412-1:1001100 EMC1412-2:1001101
Package	DFN2*2-8,MSOP-8	MSOP-8	DFN2*2-8	MSOP-8



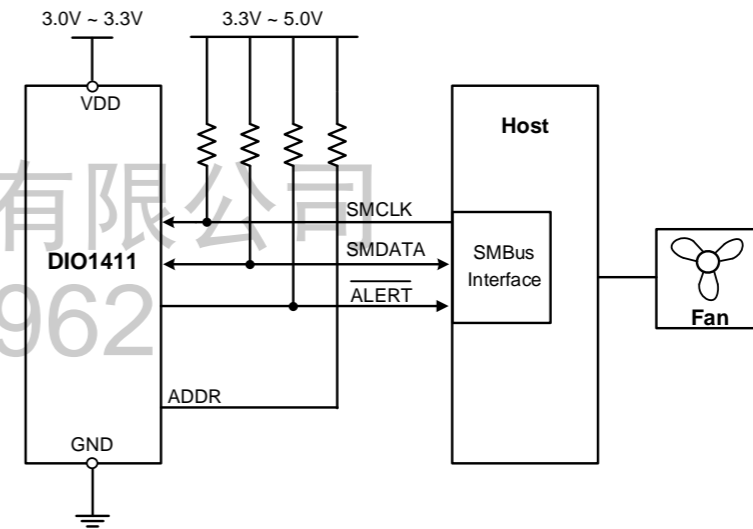
# ±1°C Temperature Sensor With I2C and SMBus Interface in Industry—DIO1411

## Feature

- Wide supply voltage range: 3.0V to 3.6V
- One Local temperature monitors
- Inaccuracy:
  - ±0.25°C (Typ.) from -40 to 125 °C
  - ±1°C (Max.) from 20 to 110 °C
  - ±2°C (Max.) from -40 to 125 °C
- 12-bit resolution: 0.0625°C
- Programmable High Limit and Low Limit (*ALERT* pin)
- Programmable SMBus (or I2C) address: Selectable by ADDR pull-up resistance(6 Addresses)
- Operating temperature range: -40°C to 125°C

## Application

- Industrial
- Server
- Notebook Computers



### 产品优势:

- ±1°C高精度, 线性度好
- I2C地址可选 (通过ADDR上拉电阻)



# DIO1411 VS TMP75/LM75



Part Number	DIO1411	TMP75	LM75A
Company	DIOO	TI	NXP
Supply voltage(V)	3-3.6V	2.7~5.5V	2.8~5.5V
number of channels	Local Channel: 1	Local Channel: 1	Local Channel: 1
Inaccuracy (Max) (+/- °C)	Local Channel: ±0.25°C (Typ.) from -40 to 125 °C ±1°C (Max.) from 20 to 110 °C ±2°C (Max.) from -40 to 125 °C	Local Channel: ±1°C (Typ.) from -40 to 125 °C ±2°C (Max.) from -40 to 125 °C	Local Channel: ±2 °C from -25 °C to +100 °C ±3 °C from -55 °C to +125 °C
Temp resolution (Max)(bits)	12	12	12
Operating temperature range °C	-40 to 125	-40 to 125	-40 to 125
I2C Address	ADDR上拉电阻可选	A0~2地址可选	A0~2地址可选
Package	MSOP-8	SOIC-8/VSSOP-8	MSOP-8/TSSOP-8



# Temperature Sensor With I2C and SMBus Interface in Industry– DIO1475



## Feature

- Wide supply voltage range: 1.62 V to 5.5 V
- One Local temperature monitors
- Inaccuracy:
  - $\pm 1^{\circ}\text{C}$  (Max.) from  $-40$  to  $110^{\circ}\text{C}$
  - $\pm 2^{\circ}\text{C}$  (Max.) from  $-55$  to  $125^{\circ}\text{C}$
- 12-bit resolution:  $0.0625^{\circ}\text{C}$
- Low power consumption:
  - 10/20 $\mu\text{A}$  Average current
  - 0.37/3.5 $\mu\text{A}$  Shutdown current
- Temperature independent of supply
- Digital interface: SMBus, I2C
- Resolution: 12 Bits
- Supports up to 75 I2C addresses
- ALERT pin function
- MSOP-8;SOIC-8;WSON-8;SOT563;WSON-6;SOT23-6;SOT23-5

## Application

- Industrial
- Server
- Notebook Computers

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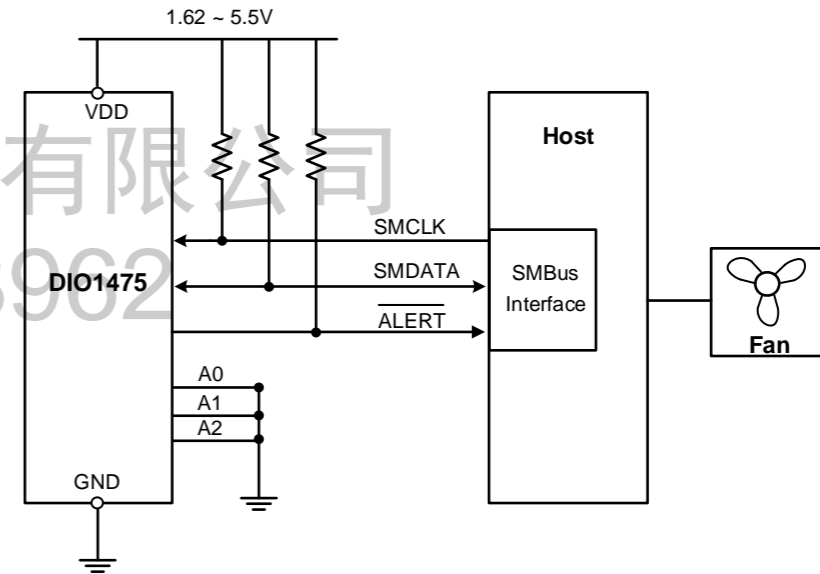


图 7-2. DGK Package 8-Pin VSSOP Top View

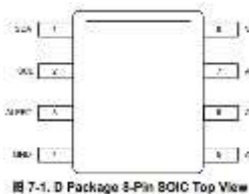
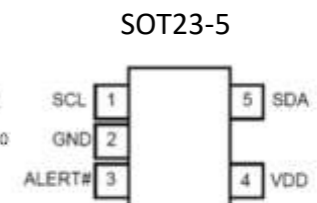
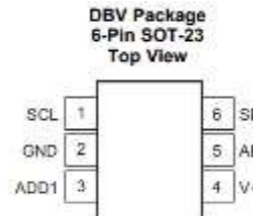
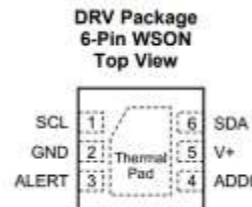
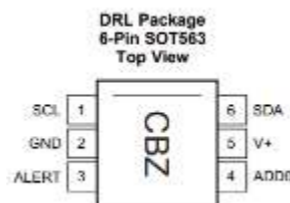


图 7-1. D Package 8-Pin SOIC Top View



图 7-3. DGK Package 8-Pin WSON Top View



# Temperature Sensor With I2C and SMBus Interface in Industry– DIO1475



## Feature

- Wide supply voltage range: 1.62 V to 5.5 V
- One Local temperature monitors
- Inaccuracy:
  - $\pm 1^{\circ}\text{C}$  (Max.) from  $-40$  to  $110^{\circ}\text{C}$
  - $\pm 2^{\circ}\text{C}$  (Max.) from  $-55$  to  $125^{\circ}\text{C}$
- 12-bit resolution:  $0.0625^{\circ}\text{C}$
- Low power consumption:
  - $10/20\mu\text{A}$  Average current
  - $0.37/3.5\mu\text{A}$  Shutdown current
- Temperature independent of supply
- Digital interface: SMBus, I2C
- Resolution: 12 Bits
- Supports up to 75 I2C addresses
- ALERT pin function
- MSOP-8;SOIC-8;WSON-8;SOT563;WSON-6;SOT23-6;SOT23-5

## Application

- Industrial
- Server
- Notebook Computers

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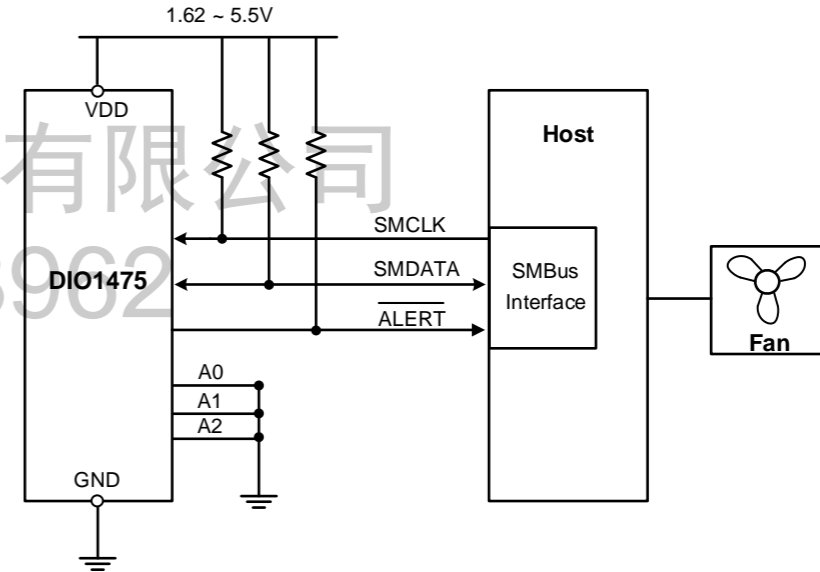


图 7-2. DGK Package 8-Pin VSSOP Top View

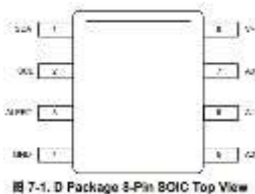
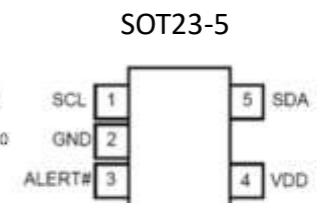
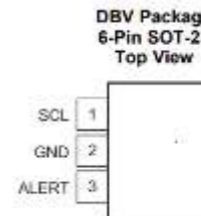
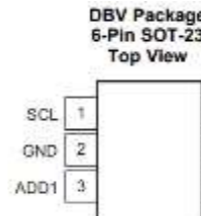
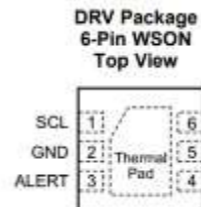


图 7-1. D Package 8-Pin SOIC Top View



图 7-3. DGK Package 8-Pin WSON Top View



# Temperature Sensor With I2C and SMBus Interface in Industry– DIO1475



Part Number	TMP1075	TMP1075N	TMP275	TMP175(-Q1)	TMP75(-Q1)	TMP75B(-Q1)	TMP75C(-Q1)	LM75A	LM75B/C	DIO1475(-Q1)
Supply Voltage	1.62V to 5.5V	1.62V to 3.6V	2.7V to 5.5V	2.7V to 5.5V	2.7V to 5.5V	1.4V to 3.6V (1.8V Supply)	1.4V to 3.6V (1.8V Supply)	2.7V to 5.5 V	3 V to 5.5 V	1.62V to 5.5V
Quiescent Current(Typ/Max)	10/20uA	10/20uA	50/85uA	50/80uA	50/80uA	45/89uA	SMBus: 15/37uA 400KHz:25(Typ.) 3MHz:95(Typ.)	280uA/500uA	250uA/500uA	10/20uA
Shutdown current(Typ/Max)	0.37/3.5uA	0.37/3.5uA	0.1/3uA	0.1/3uA	0.1/3uA	0.3/8uA	0.1/8uA	4uA (Typ)	4uA (Typ)	0.37/3.5uA
Temperature Resolution	12Bit	12Bit	9~12Bit	9~12Bit	9~12Bit	12Bit	12Bit	9Bit	9Bit	12Bit
Temperature Inaccuracy Max	-40°C to +110°C: ±1°C -55°C to +125°C: ±2°C	-55°C to +125°C: ±2°C	-40°C to +125°C: ±1°C	-40°C to +125°C: ±2°C	-40°C to +125°C: ±3°C	-40°C to +125°C: ±3°C	-40°C to +125°C: ±3°C	-55°C to +125°C: ±3°C	-55°C to +125°C: ±3°C	-40°C to +110°C: ±1°C -55°C to +125°C: ±2°C
Operating Temperature Range	-55°C to +125°C	-55°C to +125°C	-55°C to +127°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C
I2C VIH/VIL	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	0.7(V+)/0.3(V+)	兼容1.8V/3.3V I2C
Conversion rate	27.5ms/55ms/110ms/220ms	27.5ms/55ms/110ms/220ms	9~12bit: 27.5ms/55ms/110ms/220ms	27.5ms/55ms/110ms/20ms	27.5ms/55ms/110ms/220ms	37Hz/18Hz/9Hz/4Hz	27ms,80ms(12Hz)	100ms/300ms	100ms/300ms	27.5ms/55ms/110ms/220ms
SCL operating frequency(Max)	2.56MHz	2.56MHz	3MHz	3MHz	3MHz	3MHz	3/2.5MHz	400KHz	400KHz	3MHz
I2C Addresses	32(兼容支持I3C总线) (A0/1:0,1,SDA,SCL; A2:0,1)	4(可以兼容支持I3C总线) (A0:0,1,SDA,SCL)	8(A0/1/2: 0,1)	27(A0/1/2: 0,1,Float)	8(A0/1/2: 0,1)	8(A0/1/2: 0,1)	8(A0/1/2: 0,1)	8(A0/1/2: 0,1)	8(A0/1/2: 0,1)	75(A0/1:0,1,SDA,SCL,Float; A2:0,1,Float)
Register	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11) Device ID register	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11) One-Shot register(100)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11) Device ID register(111)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11)	Temperature result register(00) Configuration register(01) Low limit register(10) High limit register(11) Device ID register
Package	VSSOP-8/SOIC-8/WSON-8	SOT563	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	VSSOP-8/SOIC-8	MSOP-8/SOIC-8/WSON-8



# Thank you

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DIOO Microcircuit Co., Ltd., Jiangsu