Two-Line ESD Protection -ESDLC5V0APB

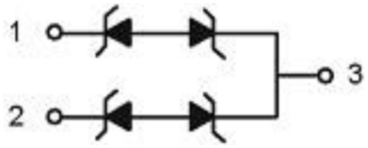
Description

ESDLC5V0APB are characterized by their high surge capability, low operating and clamping voltages, and fast response time. This makes them ideal for use as board level protection of sensitive semiconductor components. The dual-junction common-anode design allows the user to protect one bidirectional data line or two unidirectional lines. The low profile SOT23 package allows flexibility in the design of "crowded" circuit boards .

Feature

- Case :JEDEC SOT-23 package
- Low clamping voltage
- Protects two bidirectional line
- Compatible with IEC 61000-4-2(ESD) :Air 15KV , Contact 8KV
- Compatible with IEC 61000-4-4(EFT) :40A ,5/50 nS
- Compatible with IEC 61000-4-5(Surge):17A(8/20μs)

Schematic & PIN Configuration



Applications

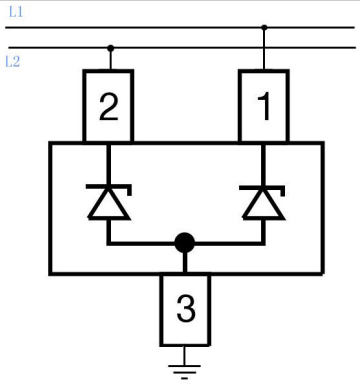
- Portable Electronics
- Industrial Controls
- Wireless systems
- Security systems

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Pulse Power (tp =8/20μs)	P_{PK}	300	W
Thermal Resistance Junction−to−Ambient	θ_{AJ}	556	℃/W
IEC61000-4-2 (Contact)	V_{ESD}	8	kV
IEC61000-4-2 (Air)	V_{ESD}	15	kV
Lead Soldering Temperature	T_L	260 (10 sec)	° C
Operating Temperature	T_J	-50 to 125	° C
Storage Temperature Range	T_{STG}	-50 to 150	° C

Electrical Characteristics (T =25° C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	It = 1mA	6.5			V
Reverse Leakage Current	I_R	V_R =V_{RWM}			10	μ A
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20μs			9.8	V
Peak pulse Current	I_{PP}	t_P = 8/20μs			17	A
Junction Capacitance	C_J	V_R=0V, f = 1MHz Between I/O pins and GND		10		pF

Mode	Pin Connection	Description
2-line protection mode		pin 3 connected to ground and pin 1 and pin 2 connected to a signal- or data-line which has to be protected. As long as the voltage level on the data- or signal-line is between 0 V (ground level) and the specified Maximum Reverse Working Voltage (V_{RWM}) the protection diode between pin 2 and pin 3 and between pin 1 and pin 3 offers a high isolation to the ground line. The protection device behaves like an open switch.

Rating & Characteristic Curves

Figure 1- Power Derating Curve

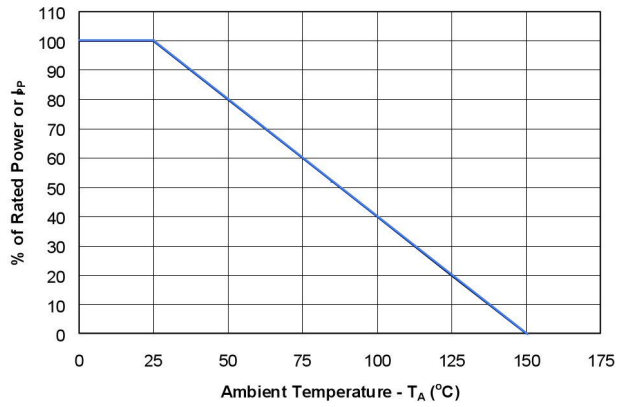


Figure 2- Pulse Waveform

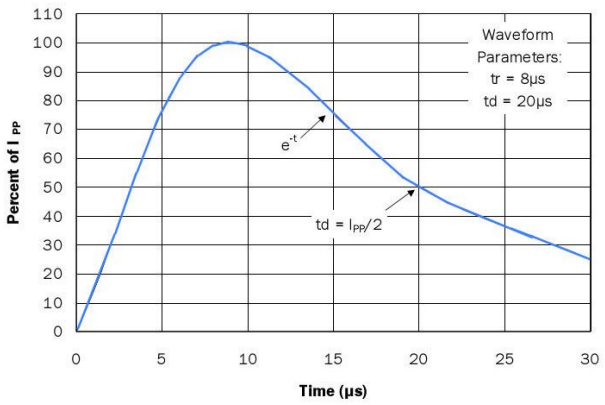
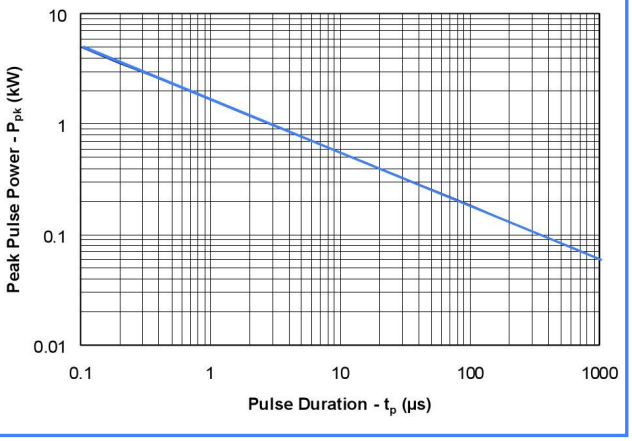
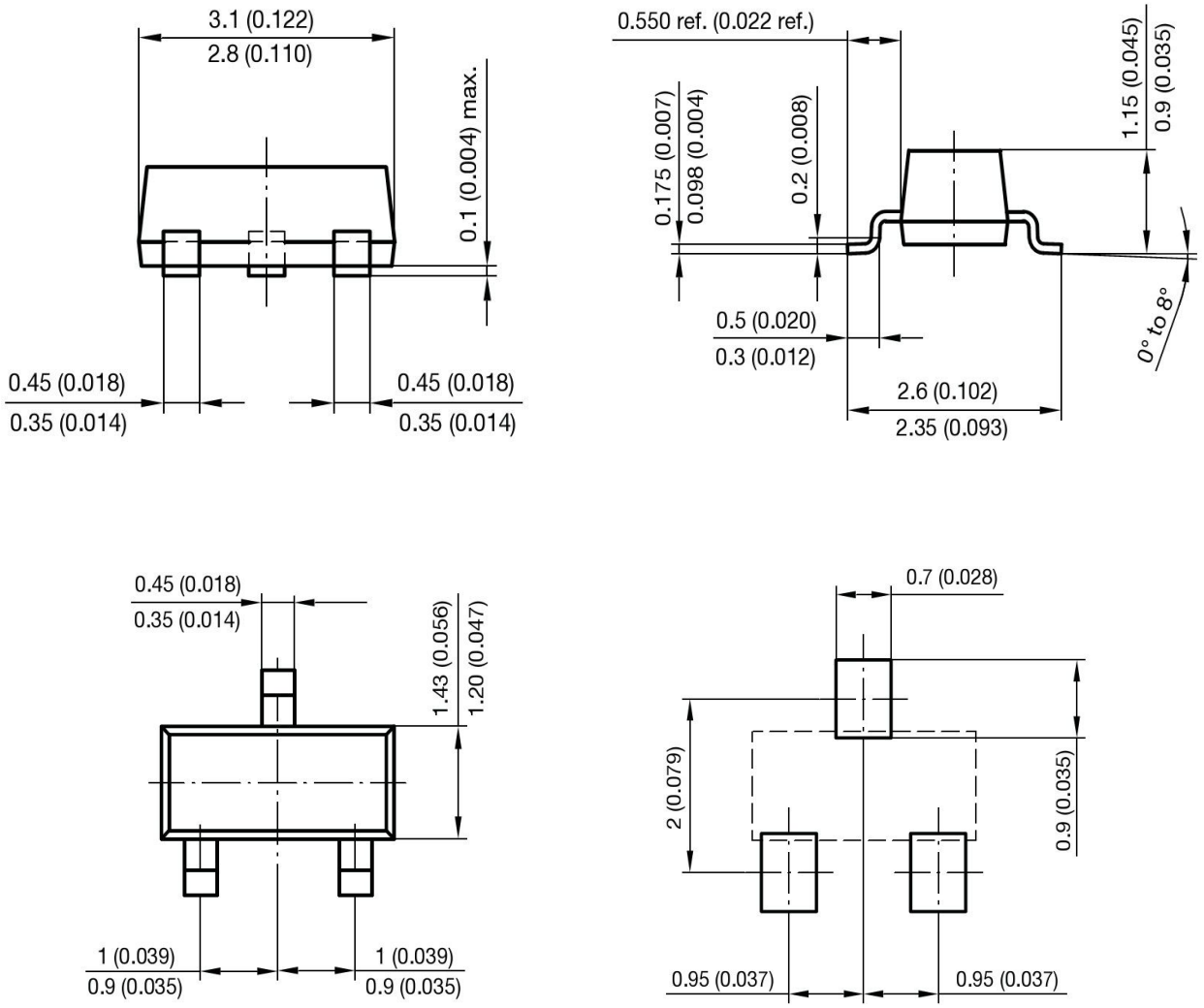


Figure 3- Peak Power Derating Curve



PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :**SOT - 23**



Mounting Pad Layout

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.