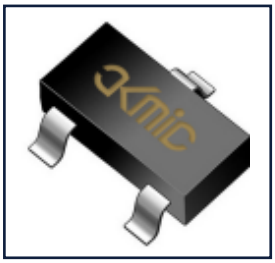
General description

These dual monolithic silicon surge protection diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment. as computers, printers, business machines, communication systems, medical equipment and other applications. Their dual junction common anode design protects two separate lines using only one package. These devices are ideal for situations where board space is at a premium.

Features and benefits

- 2 Unidirectional transil functions
- Reverse stand-off voltage: 5.0V Max
- Ultra Low Capacitance 0.5pF (Typ)
- Low leakage current: nA Level
- Response time is typically < 1 ns
- ESD Protection: 20kV(air)/ 15kV(contact) (IEC61000-4-2)

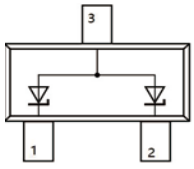


SOT23

Application information

- USB 2.0 and USB 3.0
- HDMI 1.3 and HDMI 1.4
- SATA and eSATA
- IEEE 1394
- PCI Express
- Portable Electronics

Ordering information

Marking	Graphic symbol
5ML	

Ordering information

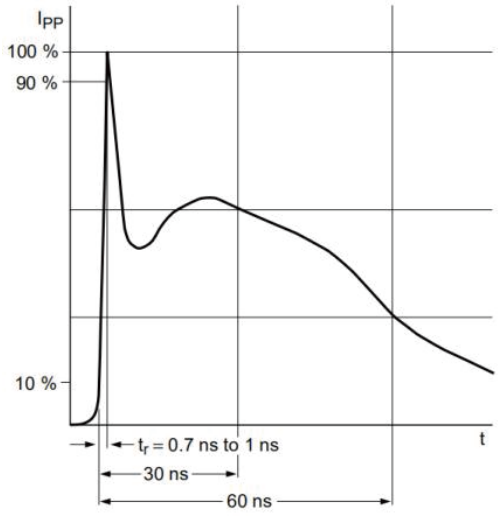
Device	Package	Reel Size	Qty(PCS)
PESD5V0X1BT	SOT23	7 Inch	3000

Electrical Characteristics (T_A = 25 °C, unless otherwise specified)

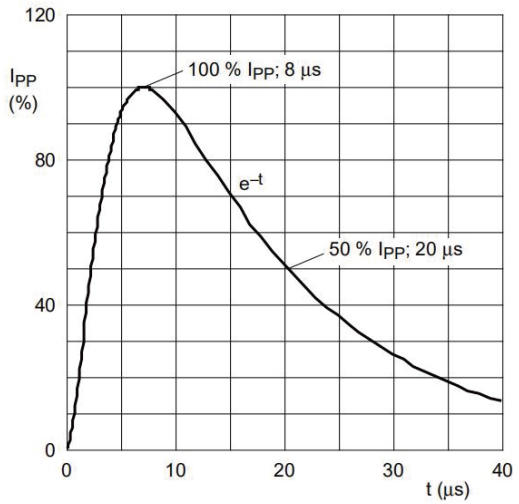
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.5	--	8.5	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage	V_C	--	10.5	12	V	I_{PP}=4A,Tp=8/20μs
Junction Capacitance	C_J	--	0.5	0.6	pF	V_R=0V, f=1MHz (Pin 1 or 2 to 3)
		--	0.25	0.3	pF	V_R=0V, f=1MHz (Pin 1 to P2 and 2 to 1)

Maximum Ratings (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	50	W
Peak Pulse Current(tp = 8/20μs)	I_{PPM}	4	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
Maximum junction temperature	T_j	150	°C
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	20	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	15	kV

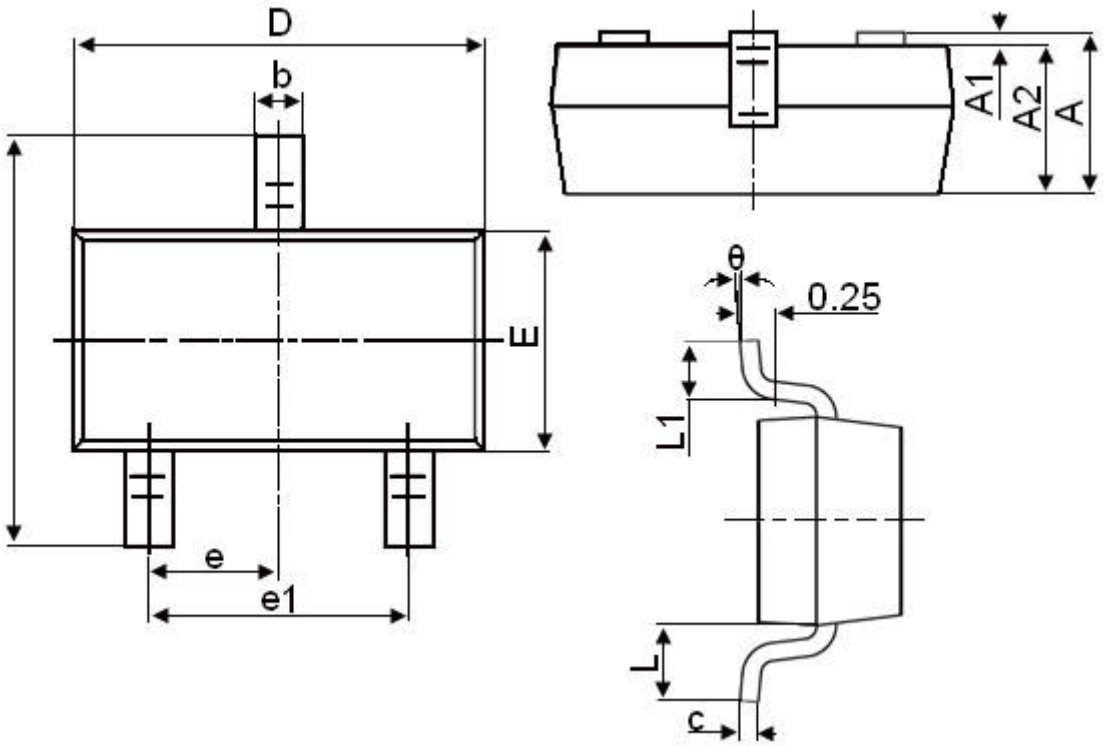


IEC61000−4−2 Waveform



IEC 61000-4-5 Waveform(8/20μs pulse)

SOT23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	mm	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°