General description

The PESD5V0X2UM is an uni-directional TVS diode, utilizing leading monolithic silicon technology to pr ovide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The PESD5V0X2UM has an ultra-low capacitance with a typical v alue at 0.35pF, and complies with the IEC 61000- 4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make PESD5V0X2UM an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

Features and benefits

- 2 Unidirectional transil functions
- Ultra small package: 1.0x0.6x0.5mm
- Ultra Low Capacitance 0.35pF (I/O--GND)
- Reverse stand-off voltage: 5V Max
- Low leakage current: nA Level
- Low clamping voltage
- 3-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±15kV
    Contact discharge: ±8kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 3A (8/20μs)
- RoHS Compliant
- Lead Finish: NiPdAu



DFN1006-3L

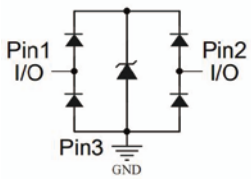
Application information

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB 2.0 and 3.0 Ports
- HDMI 1.3 and 1.4
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports
- Notebook Computer
- IEEE 1394

Ordering information

Device	Package	Reel Size	Qty(PCS)
PESD5V0X2UM	DFN1006-3L	7 Inch	10000

Ordering information

Marking	Graphic symbol
L3	

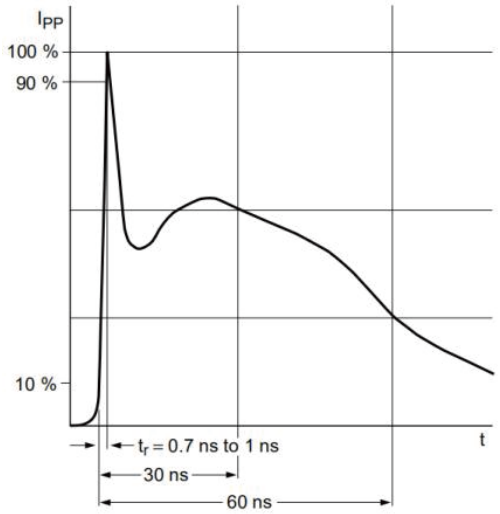
Maximum Ratings (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	60	W
Peak Pulse Current(tp = 8/20μs)	I_{PPM}	3	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
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	15	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	8	kV

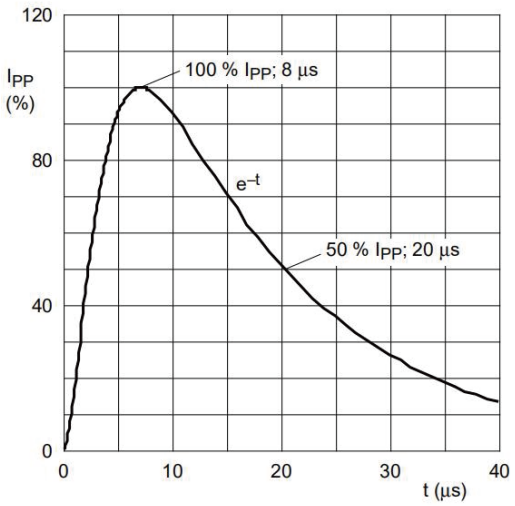
Electrical Characteristics (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.5	--	9.0	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	500	nA	V_{RWM}=5V
Clamping Voltage	V_C	--	--	21.0	V	I_{PP}=3A,Tp=8/20μs
Junction Capacitance	C_j	--	0.35	0.45	pF	V_R=0V, f=1MHz, I/O to GND
Junction Capacitance	C_j	--	0.20	0.30	pF	V_R=0V, f=1MHz, I/O to I/O

Typical Characteristics



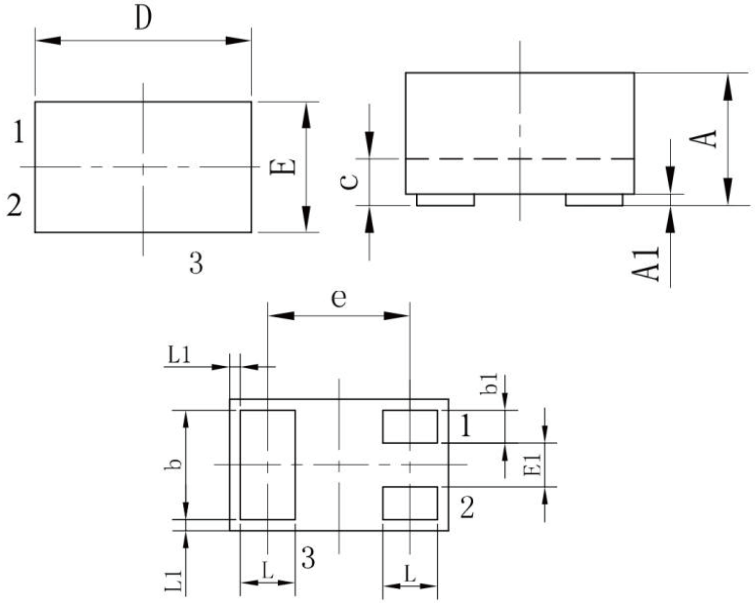
IEC61000−4−2 Waveform



IEC 61000-4-5 Waveform(8/20µs pulse)

Package Outline Dimensions

DFN1006-3L



SYMBOL	Dimensions (mm)	
	Min	Max
A	0.45	0.55
A1	0.00	0.05
b	0.45	0.55
b1	0.10	0.20
c	0.12	0.18
D	0.95	1.05
e	0.65BSC	
E	0.55	0.65
E1	0.15	0.25
L	0.20	0.30
L1	0.05REF	