LM-PESD5V0L6UAS

6-Line Low Capacitance TVS Diode Array

Description

The LM-PESD5V0L6UAS is a low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines.The LM-PESD5V0L6UAS has low capacitance with a typical value at 8pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into a 8-pin lead-free SO-8 package. The combination of small size, low capacitance and high level of ESD protection makes it ideal for cellular, notebooks, desktops, and other portable application.

Features

- Low capacitance: 8pF typical (I/O to GND)
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- Up to 6 lines protects
- JEDEC TTSOP-8 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)
- RoHS Compliant

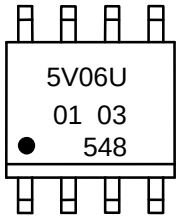
Mechanical Characteristics

- Package: TSSOP-8
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

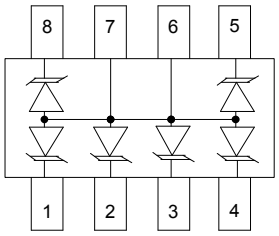
- 10/100/1000 Ethernet
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information

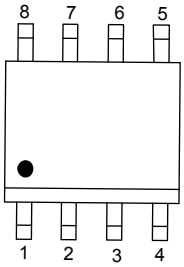


Dot indicates pin1
5V06U= device marking code

Dimensions and Pin Configuration



Circuit Schematic



Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
ESD0506M8	4000/Tape & Reel	13 inch

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	25	W
Peak Pulse Current (8/20μs)	I_{PP}	2	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±8	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

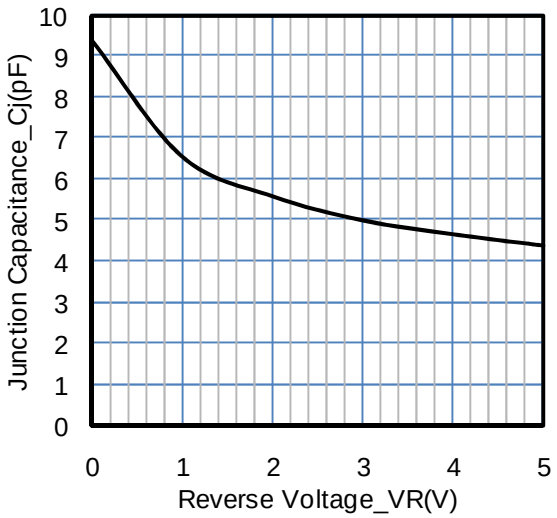
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA, any I/O to GND
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 5V
Clamping Voltage	V_C			10.5	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			12.5	V	I_{PP} = 2A (8 x 20μs pulse)
Junction Capacitance	C_J			8	pF	VR = 0V, f = 1MHz, any I/O to GND

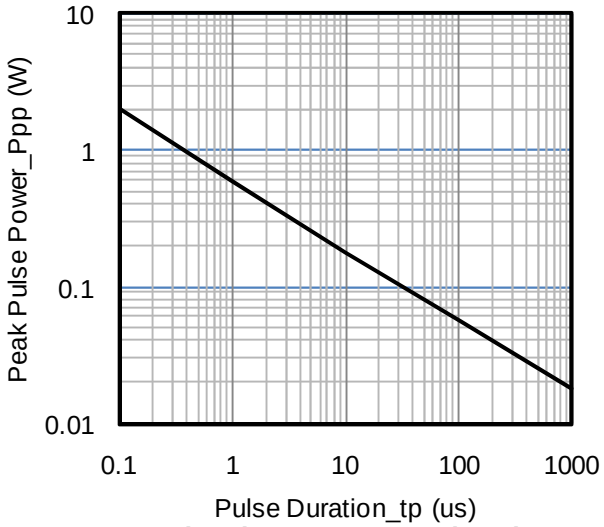
Note 1: I/O pins are 1, 2, 3, 4, 5 and 8.

GND pins are 6, 7.

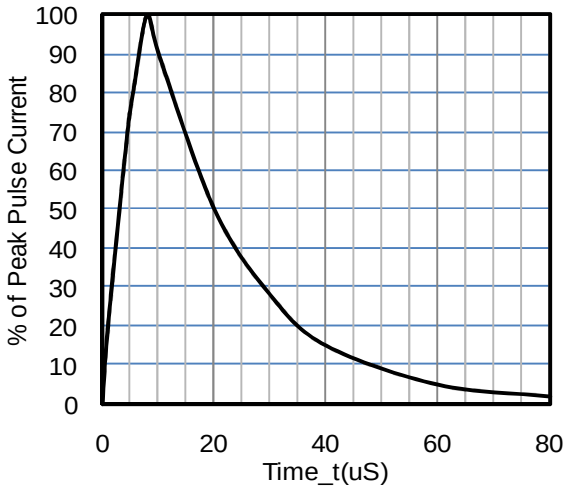
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



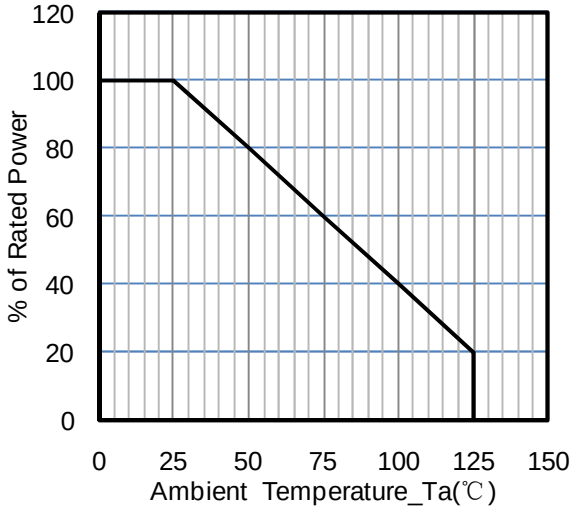
Junction Capacitance vs. Reverse Voltage



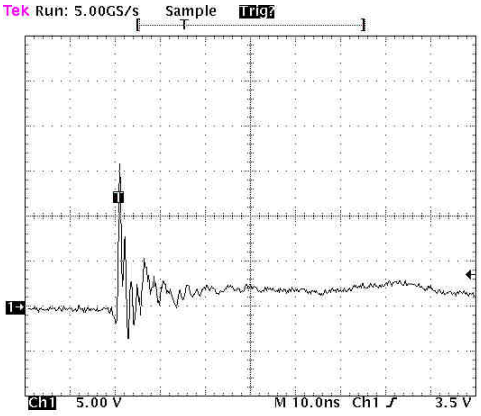
Peak Pulse Power vs. Pulse Time



8 X 20uS Pulse Waveform



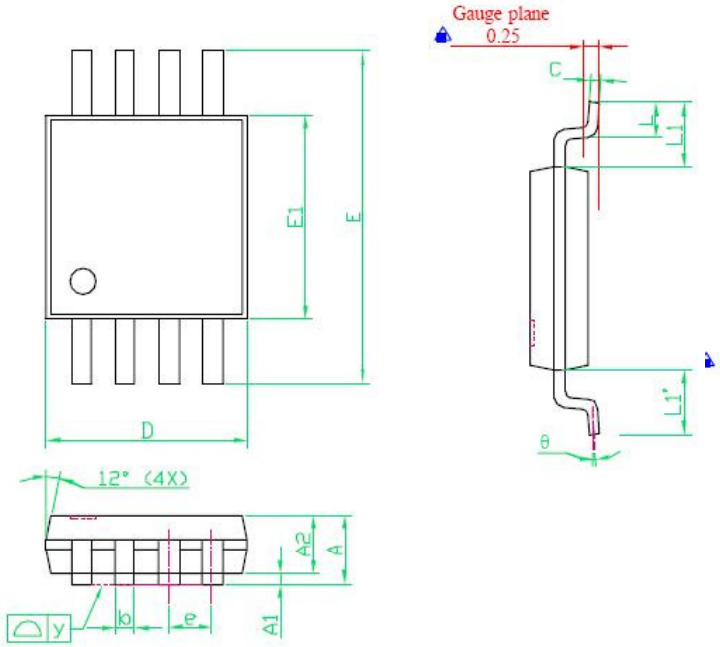
Power Derating Curve



ESD Clamping Voltage

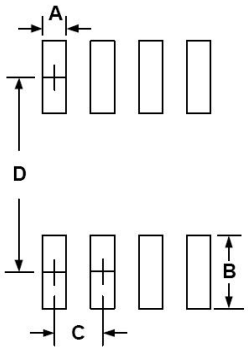
8 kV Contact per IEC61000−4−2

TSSOP-8 Package Outline Drawing



SYMBOLS	DIMENSIONS IN MILLIMETER		
	MIN	NOM	MAX
A	---	---	1.10
A1	0.00	---	0.10
A2	0.75	0.85	0.95
b	0.22	0.30	0.38
C	0.13	0.15	0.23
D	---	3.00BSC	---
E	---	4.90BSC	---
E1	---	3.00BSC	---
e	---	0.65BSC	---
L	0.40	0.53	0.66
y	---	---	0.10
θ	0°	---	6°
L1	---	0.95(REF)	---
|L1-L1'|	---	---	0.12

Suggested Land Pattern



Dimensions		
Index	Millimeter	Inches
A	0.41	0.016
B	1.02	0.040
C	0.65	0.023
D	4.8	0.189

NOTICE
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