

## 6-Line Low Capacitance TVS Diode Array

### Description

The ESD0506M8 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 ESD0506M8 has low capacitance with a typical value at 8pF, and complies with the IEC 61000-4-2 (ESD) standard with  $\pm 15\text{kV}$  air and  $\pm 8\text{kV}$  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:  $\pm 15\text{kV}$   
Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

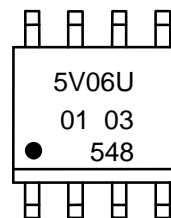
### Mechanical Characteristics

- 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

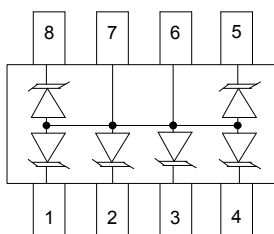
- 10/100/1000 Ethernet
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

### Marking Information

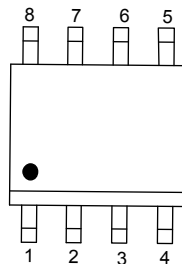


Dot indicates pin1  
5V06U= device marking code

### Dimensions and Pin Configuration



Circuit Schematic



Pin Schematic

### Ordering Information

Part Number	Packaging	Reel Size
ESD0506M8	2500/Tape & Reel	13 inch

**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	25	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	2	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 15$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 8$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	$^{\circ}\text{C}$

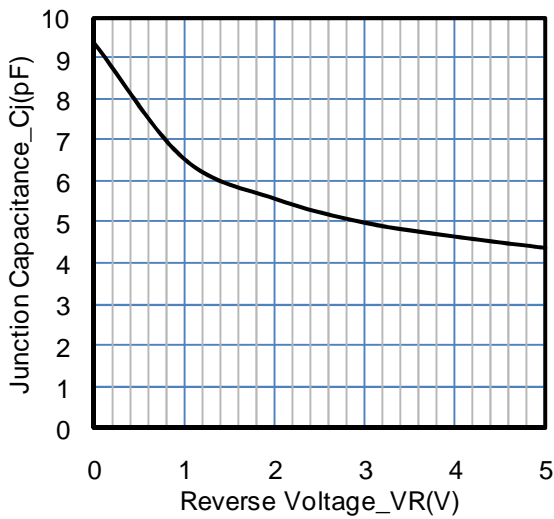
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	6			V	I <sub>T</sub> = 1mA, any I/O to GND
Reverse Leakage Current	I <sub>R</sub>			0.1	$\mu\text{A}$	V <sub>RWM</sub> = 5V
Clamping Voltage	V <sub>C</sub>			10.5	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			12.5	V	I <sub>PP</sub> = 2A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>			8	pF	V <sub>R</sub> = 0V, f = 1MHz, any I/O to GND

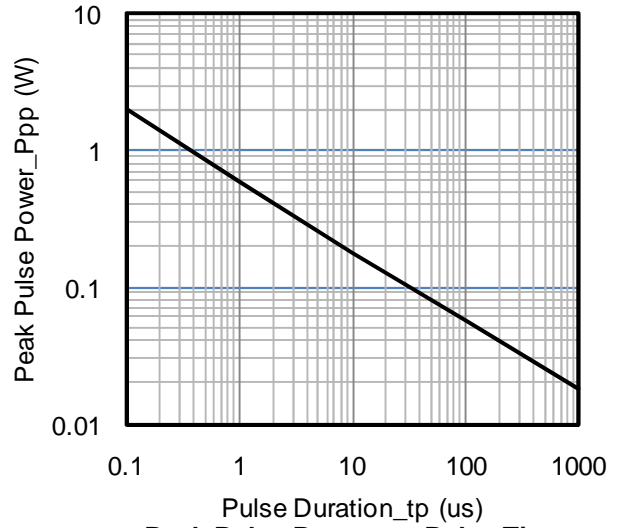
Note 1: I/O pins are 1, 2, 3, 4, 5 and 8.

GND pins are 6, 7.

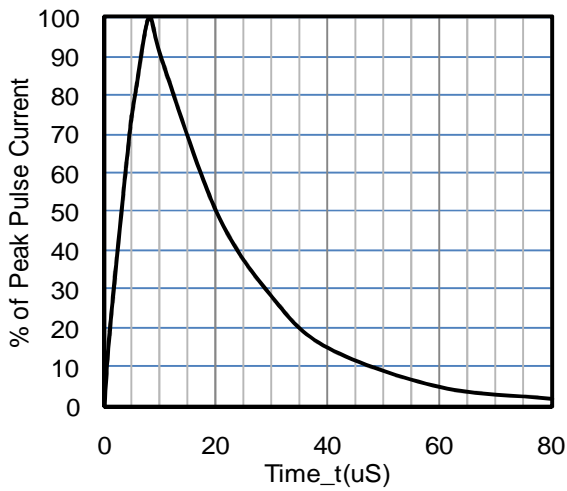
**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**



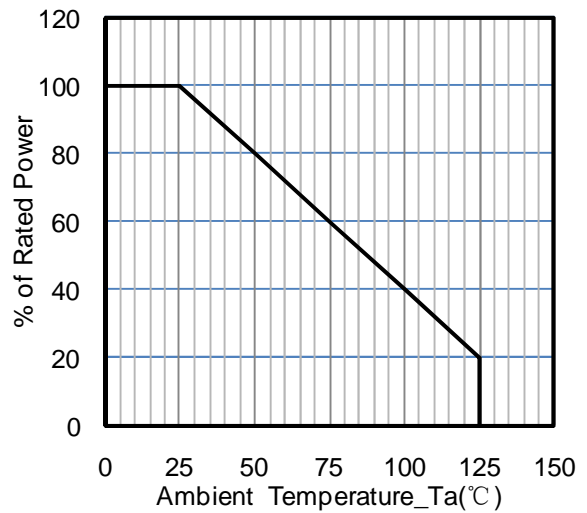
**Junction Capacitance vs. Reverse Voltage**



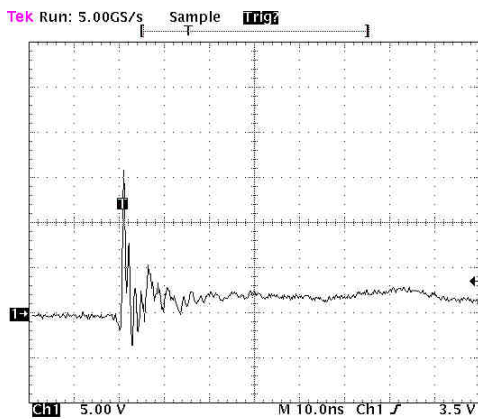
**Peak Pulse Power vs. Pulse Time**



**8 X 20uS Pulse Waveform**



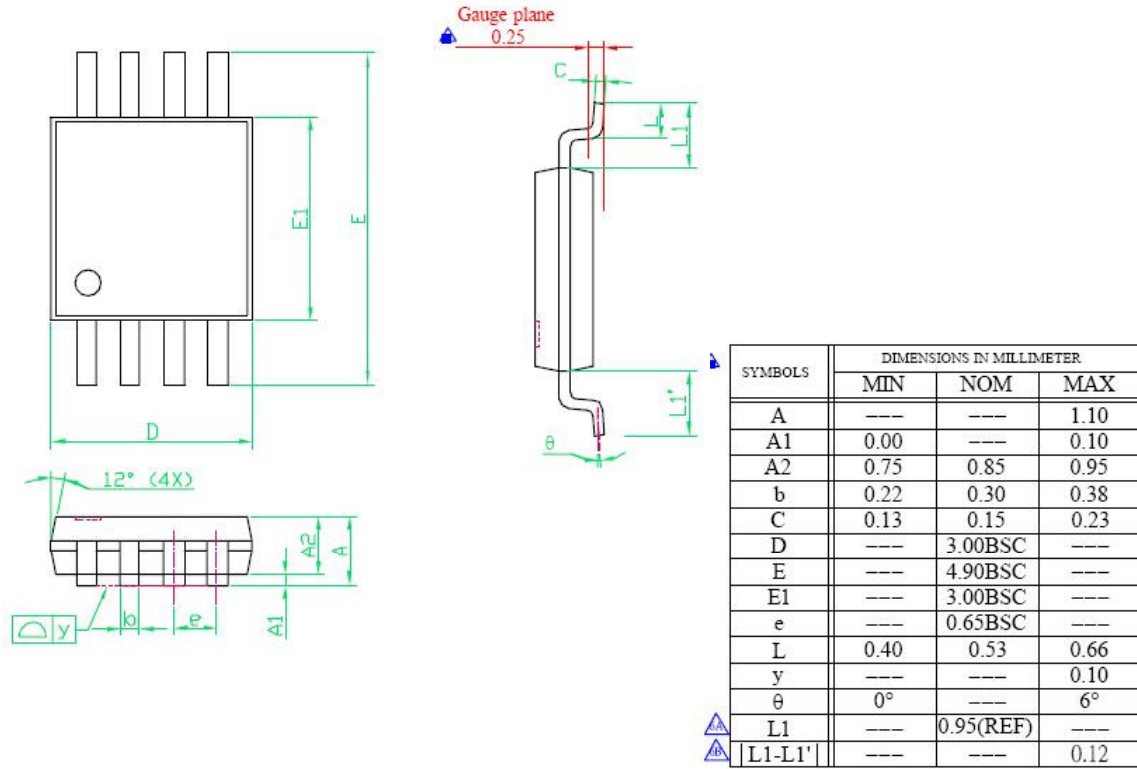
**Power Derating Curve**



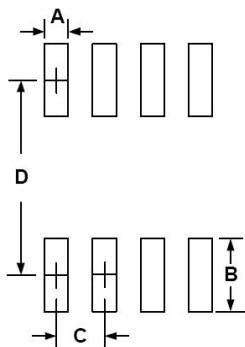
**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**

**TSSOP-8 Package Outline Drawing**



**\* SOLDERING FOOTPRINT**



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

**Contact Information**

Shanghai Leiditech Electronic Co.,Ltd  
 Email: sale1@leiditech.com  
 Tel : +86- 021 50828806  
 Fax : +86- 021 50477059

单击下面可查看定价，库存，交付和生命周期等信息

[>>Leiditech\(雷卯电子\)](#)