AU0506M8
6-Line Low Capacitance TVS Diode Array

Description

The AU0506M8 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 AU0506M8 has low capacitance with a typical value at 8pF, and complies with the IEC 61000-4-2 (ESD) with ±15kV air and ±8kV contact discharge. It is assembled into a 8-pin lead-free MSOP-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: 3pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- Up to 6 lines protects
- JEDEC SO-8 package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±15kV
    - Contact discharge: ±8kV
- RoHS Compliant

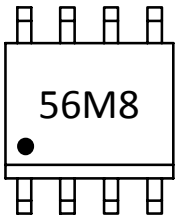
Mechanical Characteristics

- Package: MSOP-8
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

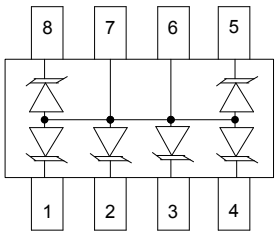
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information

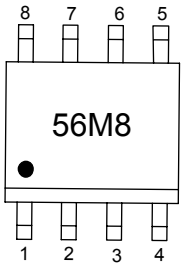


Dot indicates pin1
56M8 = device marking code

Dimensions and Pin Configuration



Circuit Schematic



Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU0506M8	2500/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

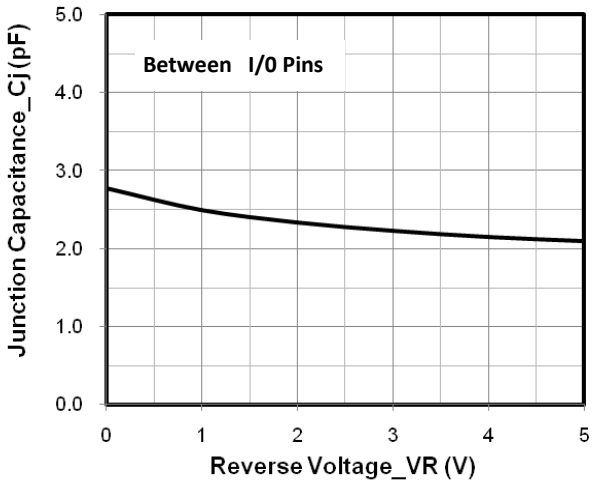
Electrical Characteristics (T_A=25°C unless otherwise specified)

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			0.02	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			10	pF	VR = 0V, f = 1MHz, any I/O to GND

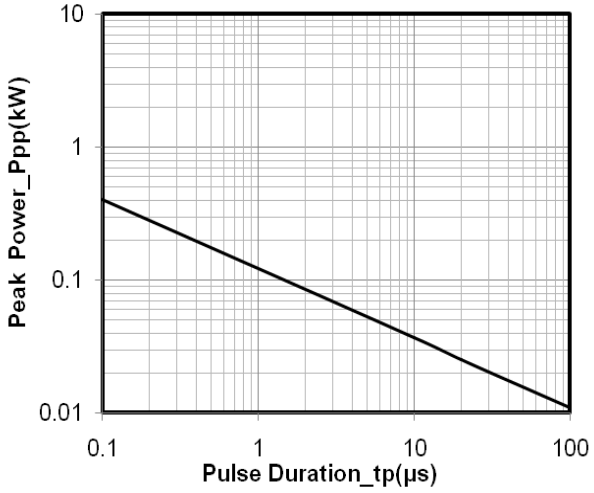
Note 1: I/O pins are 1, 2, 3, 4, 5 and 8.

GND pins are 6, 7.

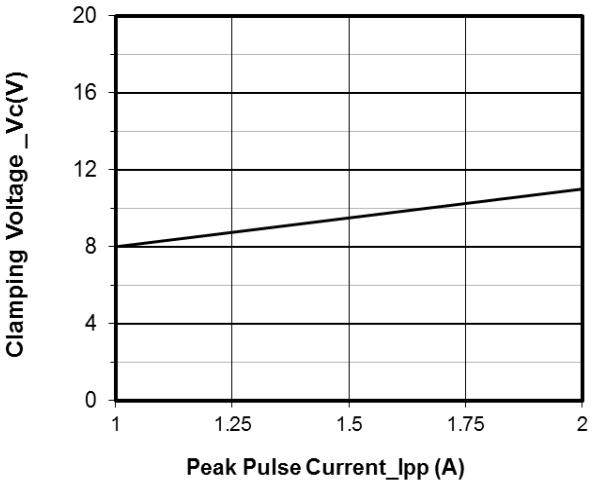
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



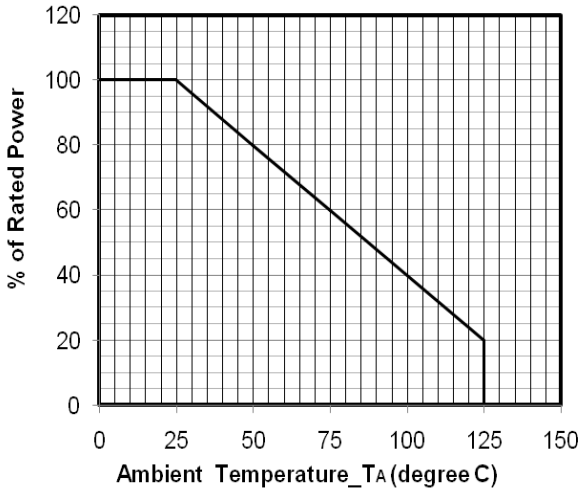
Junction Capacitance vs. Reverse Voltage



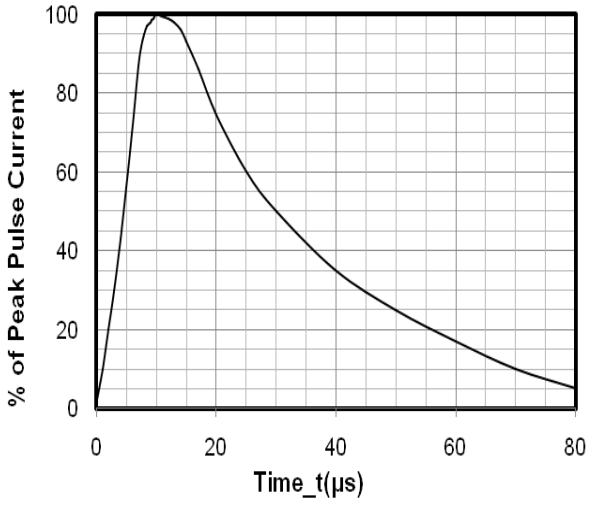
Peak Pulse Power vs. Pulse Time



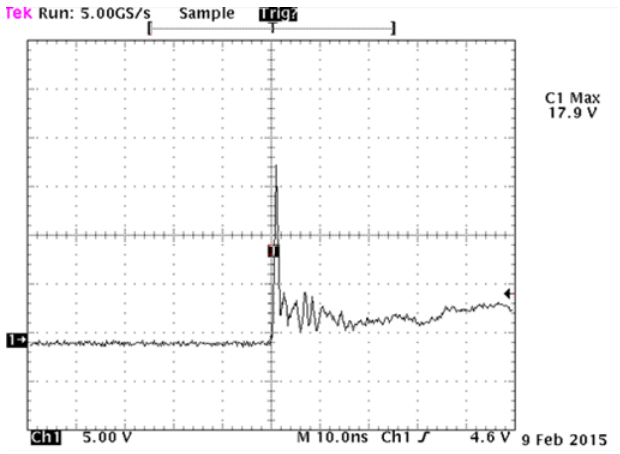
Clamping Voltage vs. Peak Pulse Current (tp = 8/20us)



Power Derating Curve



8 X 20μs Pulse Waveform

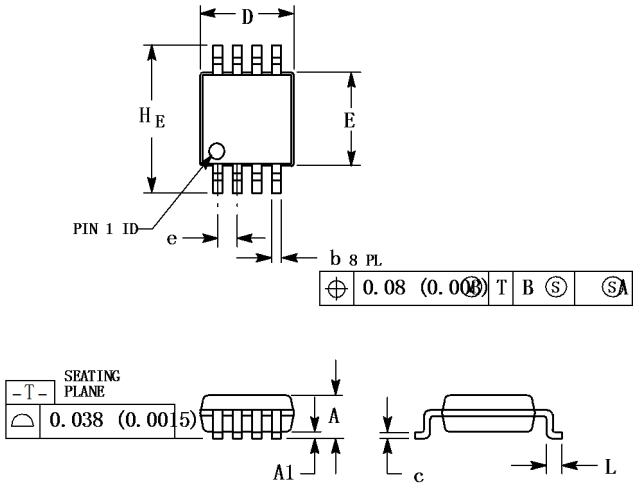


Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

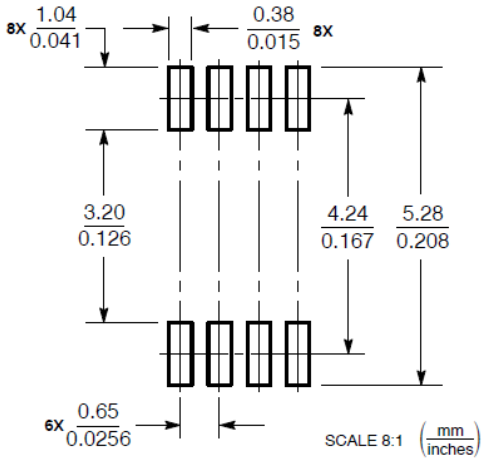
+8 kV Contact per IEC61000−4−2

MSOP-8 Package Outline Drawing



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	— —	— —	1.10	— —	— —	0.043
A1	0.05	0.08	0.15	0.002	0.003	0.006
b	0.25	0.33	0.40	0.010	0.013	0.016
c	0.13	0.18	0.23	0.005	0.007	0.009
D	2.90	3.00	3.10	0.114	0.118	0.122
E	2.90	3.00	3.10	0.114	0.118	0.122
e	0.65 BSC			0.026 BSC		
L	0.40	0.55	0.70	0.016	0.021	0.028
H E	4.75	4.90	5.05	0.187	0.193	0.199

Suggested Land Pattern



Contact Information

Applied Power Microelectronics Co., Ltd.

Website: http://www.appliedpowermicro.com

Email: sales@appliedpowermicro.com

Phone: +86 (0519) 8399 3606