



2-Line Uni-directional TVS Diode Array

DESCRIPTION

The SESD05M2T is an uni-directional TVS diode array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor components from damage. The SESD05M2T complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a lead-free SOT-23 package. It is designed to protect components which are connected to data and transmission lines from voltage surges.

FEATURES

- 300W peak pulse power(8/20 μs)
- Protects one two uni-directional line(s)
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage

APPLICATIONS

- Peripherals
- Industrial Equipment
- Notebook Computers
- Portable Instrumentation
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories
- Personal Digital Assistants(PDAs) and Pagers

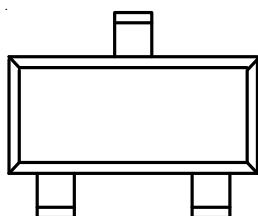
MECHANICAL DATA

- Case : Molded, plastic SOT-23
- Polarity : Shown follows
- Epoxy : UL94-V0 rated flame retardant

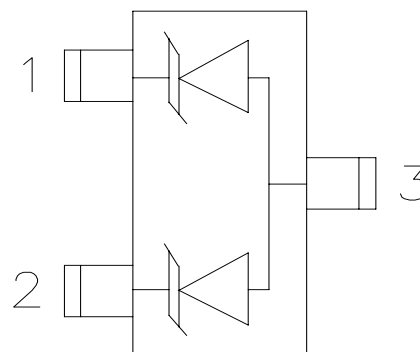
IEC COMPATIBILITY

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC61000-4-5 (Lighting) 22A (8/20 μs)

SOT-23 PACKAGE



SCHEMATIC & PIN CONFIGURATION



Circuit and Pin Schematic



2-Line Uni-directional TVS Diode Array

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

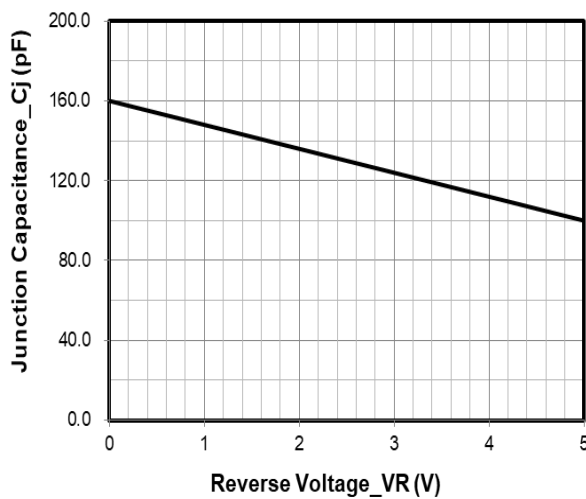
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	300	W
Peak Pulse Current (8/20 μs)	I _{PP}	22	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

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

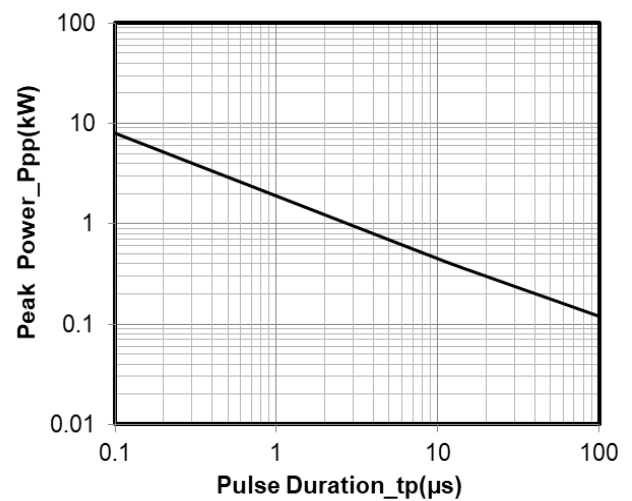
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	
Reverse Breakdown Voltage	V _{BR}	6			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V _C			8	V	I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			14	V	I _{PP} = 22A (8 x 20 μs pulse), any I/O pin to ground
Junction Capacitance	C _J		160		pF	V _R = 0V, f = 1MHz, any I/O pin to ground



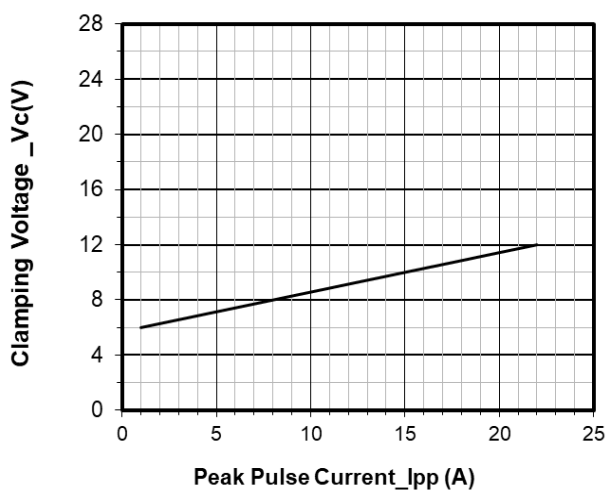
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



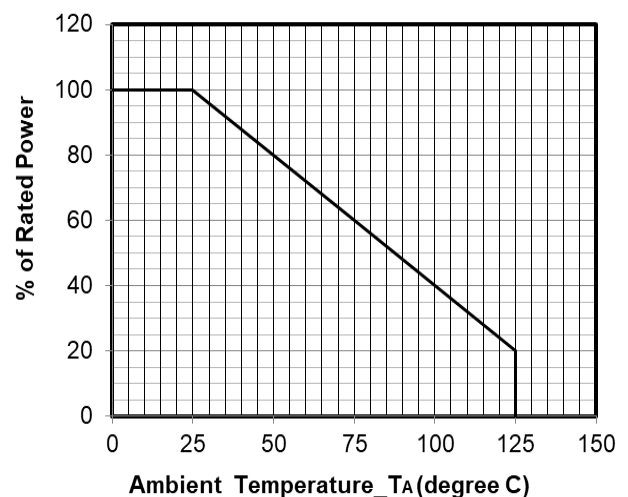
Junction Capacitance vs. Reverse Voltage



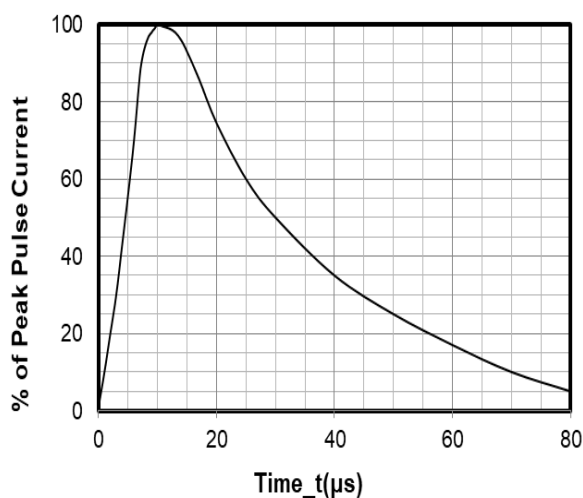
Peak Pulse Power vs. Pulse Time



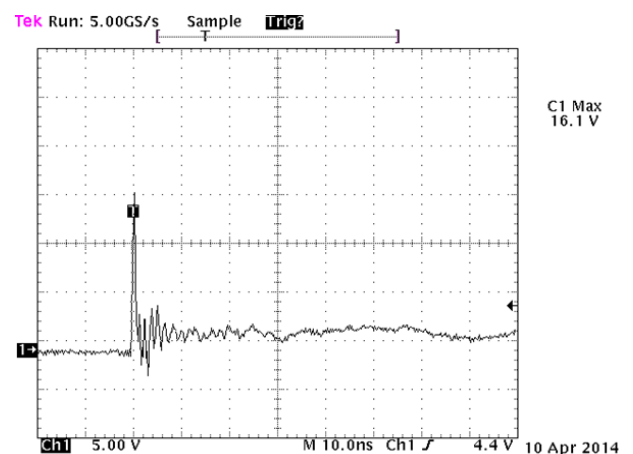
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20 μ s Pulse Waveform



Note: Data is taken with a 10x attenuator

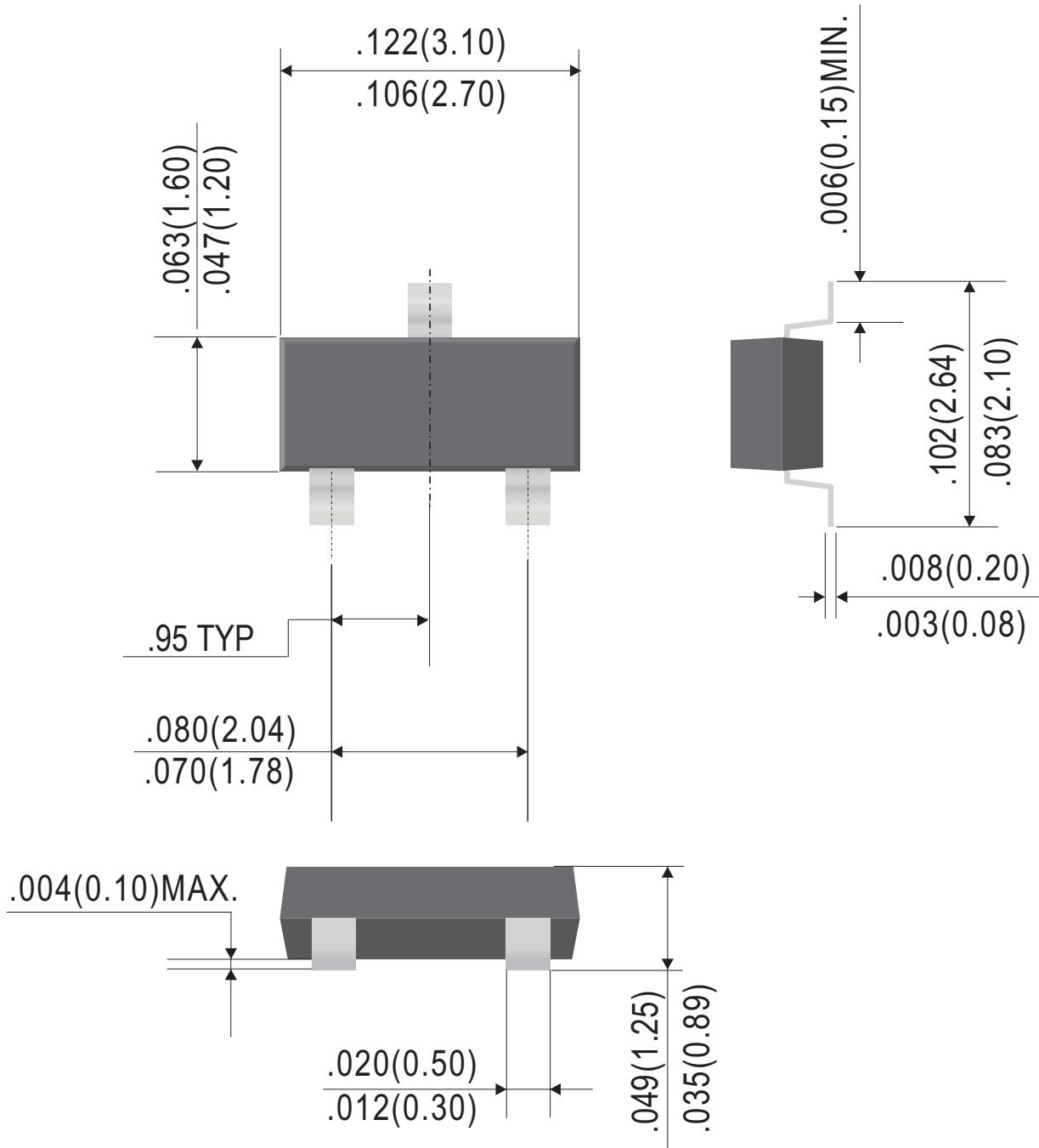
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



Outline Drawing

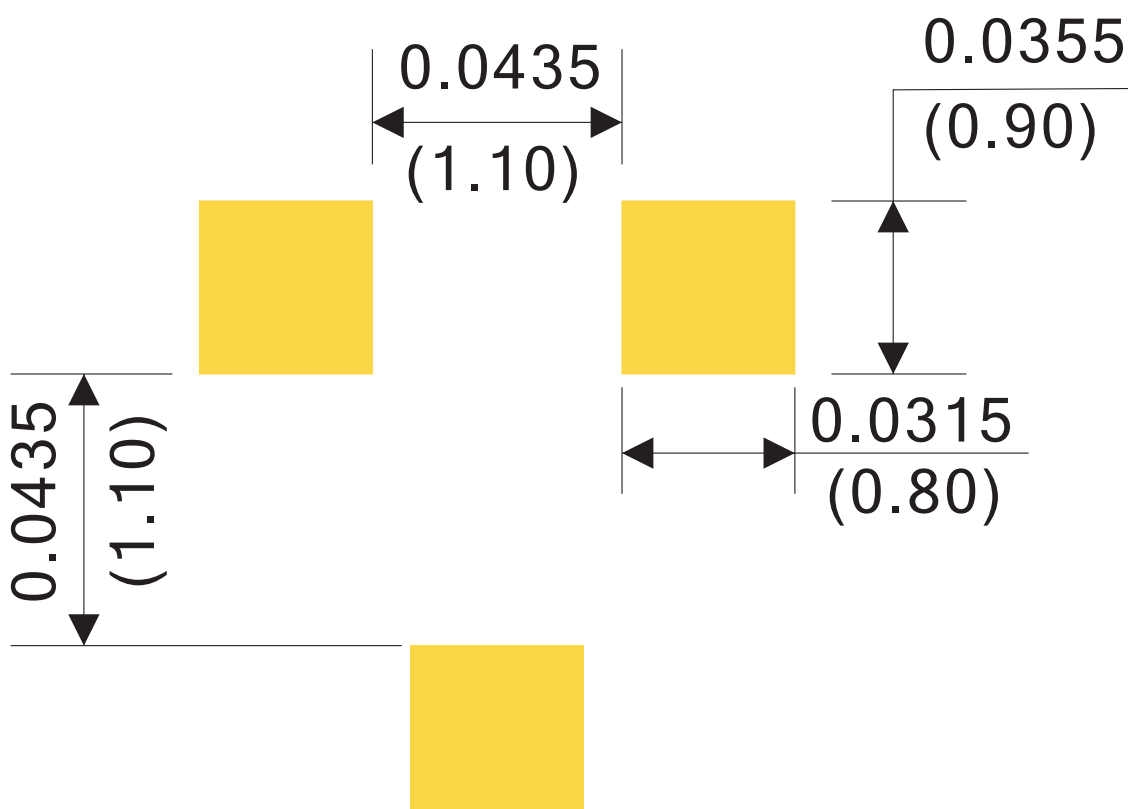
SOT-23



Dimensions in inches and (millimeters)

Rev.E



Suggested Soldering Pad Layout	SOT-23
 The diagram illustrates the suggested soldering pad layout for an SOT-23 package. It features three yellow rectangular pads arranged in a triangular pattern. The dimensions are specified in inches and millimeters (in parentheses): - Left pad width: 0.0435 (1.10) - Right pad width: 0.0435 (1.10) - Distance between the inner corners of the left and right pads: 0.0355 (0.90) - Distance between the inner corners of the top and bottom pads: 0.0315 (0.80)	
Dimensions in inches and (millimeters)	
RevA	

**2-Line Uni-directional TVS Diode Array****Ordering Information:**

Device PN	Marking	Packing
SESD05M2T-T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	S05	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Packing code Suffix"H" for halogen free product.

All materials and products supplied comply with the U.S. Toxic Substances Control Act statement, PBT Chemicals.

(3) Willas brand abbreviation, Label Type does not display.

(4) There may be additional marking, which relates to the lot trace code information (data code and vendor code), the logo or the environmental category on the device.

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