

# **MDE Semiconductor, Inc.**

78-150 Calle Tampico, Unit 210, La Quinta, CA. U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414  
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

## **SMDMAX6KA Series**

### **Surface Mount Transient Voltage Suppressor**

**Stand-off Voltage 58 to 76 Volts**

#### **FEATURES**

- MAX technology for superior clamping surface mounted package
- MAX-Avalanche™ technology for superior clamping
- Ideal for automatic pick and place assembly and reflow process to reduce the manufacturing cost and increase the soldering quality compared to axial lead package
- Bi-directional
- Sharp breakdown voltage
- Halogen free and RoHS Compliant
- Low clamping and slope resistance
- Plastic package has underwriters laboratory flammability classification V-O
- Operating Junction and Storage Temperature -40°C~125°C
- Meets MSL level 1, per J-STD-020, maximum peak of 260°C



#### **Physical Specifications:**

- Case: Epoxy encapsulated
- Terminal: Tin Plated lead, solderable per MIL-STD-202 Method 208
- Weight: 4.34g

#### **Applications**

- Aerospace and Defense
- RTCA/DO-160 Airborne Equipment
- Shipboard MIL-STD 1399 Section 300 B Requirements
- Railway Signal Controls
- Cell Tower Base Stations

#### **Maximum Ratings**

- 6kA surge capability at 8 x 20µsec waveform

#### **Electrical Characteristics**

Part Numbers	Standoff Voltage (V <sub>SO</sub> )	Max. Reverse Leakage (I <sub>R</sub> ) @V <sub>SO</sub>	Reverse Breakdown Voltage (V <sub>BR</sub> ) @ I <sub>T</sub>		Test Current I <sub>T</sub>	Max. Clamping Voltage V <sub>CL</sub> @ Peak Pulse Current (I <sub>PP</sub> )	Max. Temp Coefficient of V <sub>BR</sub>	Max. Capacitance 0 Bias 10kHz
	(V)	(µA)	Min Volts	Max Volts	(mA)	V <sub>CL</sub> Volts	(%/°C)	(nF)
SMDMAX6KA-058C	58	10	64	70	10	110	0.1	8.5
SMDMAX6KA-066C	66	10	72	80	10	120	0.1	7.5
SMDMAX6KA-076C	76	10	85	95	10	140	0.1	6.5

Note: Using 8/20µS wave shaped defined in IEC 61000-4-5.

SURGE RATINGS ( I <sub>PP</sub> )		
8/20µS	10/350µS	10/1000µS
A min	A min	A min
6000	900	430

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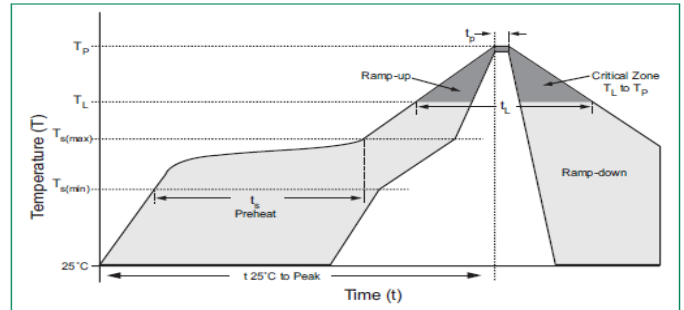
## SMDMAX6KA Series

### Surface Mount Transient Voltage Suppressor

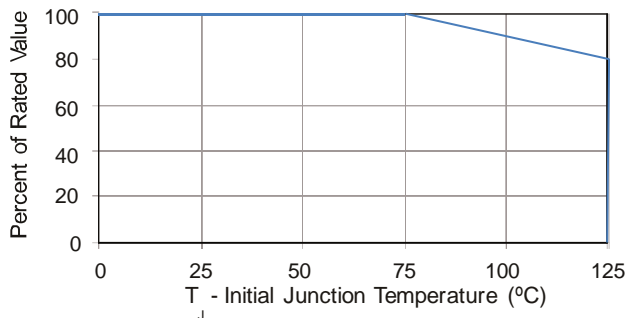
Stand-off Voltage 58 to 76 Volts

### Solder Parameters

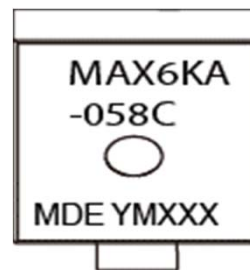
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_A$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_A$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_A$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_s$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes Max.
Do not exceed		260°C



### Peak Power Derating



### Part Marking



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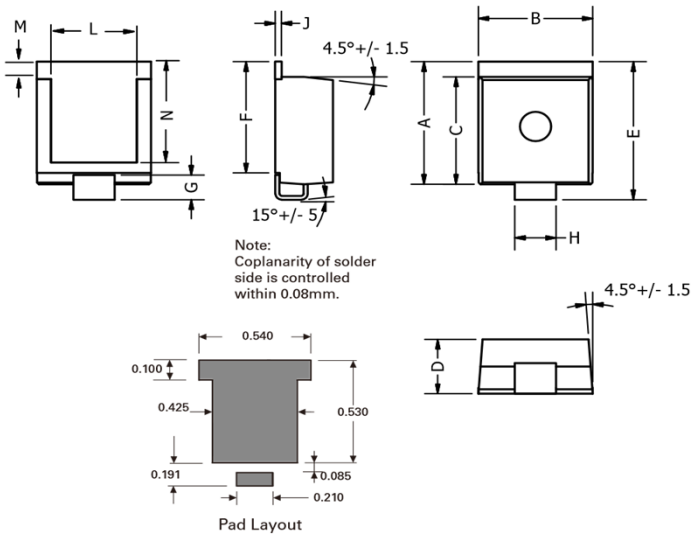
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#### Dimensions-SMTO-218



Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.621	0.655	15.78	16.63
B	0.529	0.594	13.43	15.09
C	0.544	0.561	13.83	14.24
D	0.273	0.285	6.94	7.24
E	0.702	0.737	17.82	18.72
F	0.567	0.587	14.4	14.9
G	0.087	0.126	2.2	3.2
H	0.193	0.222	4.89	5.65
J	0.028	0.033	0.72	0.85
L	0.4	0.44	10.17	11.17
M	0.073	0.112	1.85	2.85
N	0.51	0.533	12.95	13.55

#### Packaging

Part Number	Packing Mode	Base Quantity
SMDMAX6KA-xxxC	Tape & Reel – 32mm/13" tape	400
SMDMAX6KA-xxxC-TP	Tube Pack	100(25/Tube)

#### Tape and Reel Specification

