

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURES

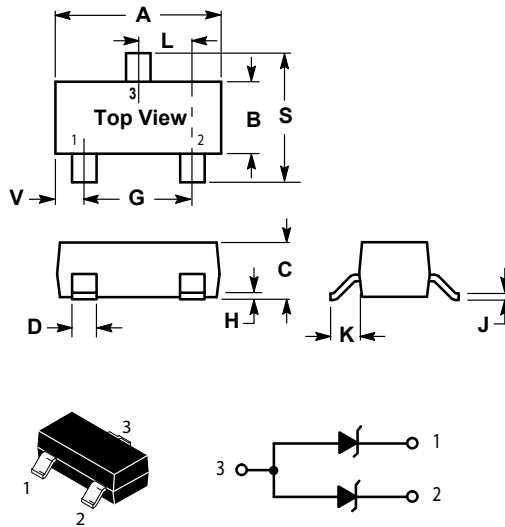
- SC59 package for surface mount application
- Protects 3.3V up through 36V components
- Protects two unidirectional line or one bidirection line
- Provides electrically isolated protection
- ESD>10KV
- 300W Peak Power Protection($t_p=8/2$ us)

MECHANICAL DATA

- Molded: SC59 Surface Mount
- Body marked with marking code.
- Mounting Position: Any
- Weight: 0.008 grams (approx.)

APPLICATIONS

- Cellular Handsets and Accessories
- Portable Electronics
- Industrial Controls
- Set -Top Box
- Servers, Notebook, and Desktop PC



SC-59(SOT-23)		
Dim	Min	Max
A	2.700	3.100
B	1.200	1.400
C	0.900	1.150
D	0.350	0.500
G	1.700	2.100
H	0.013	0.100
J	0.085	0.200
K	0.450	0.600
L	0.900	1.000
S	2.200	2.600
V	0.450	0.600
All Dimension in mm		

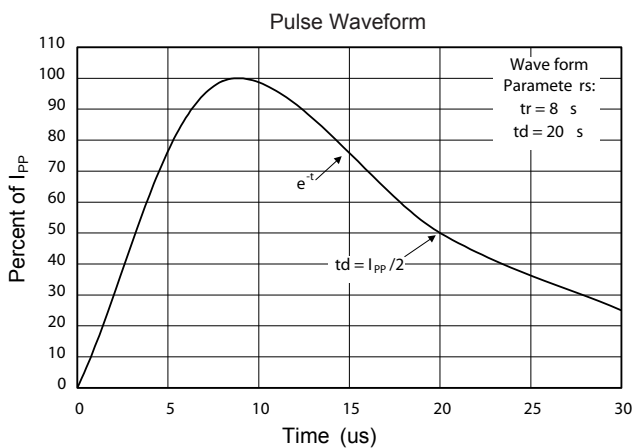
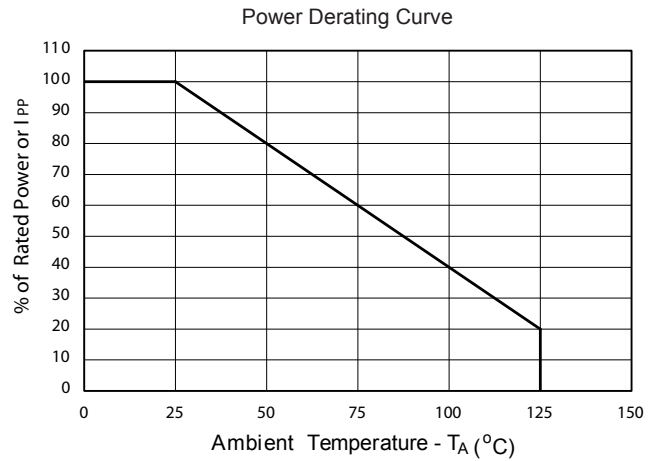
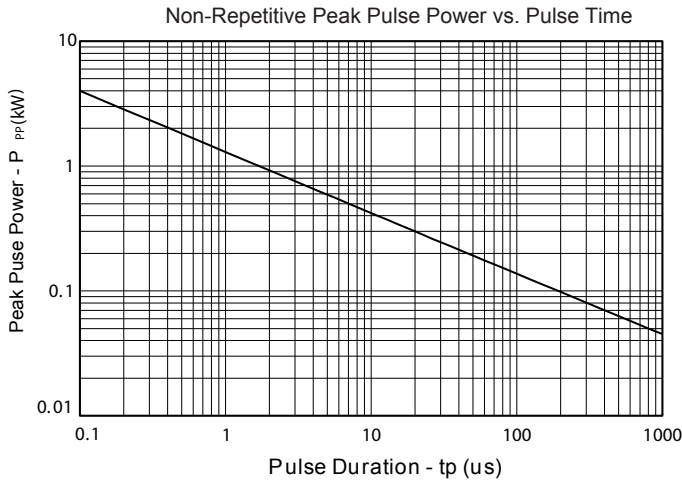
MAXIMUM RATING SAND ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20$ us)	P_{pk}	300	Watts
Thermal Resistance, Junction to Ambient	θ_{JA}	556	$^{\circ}W$
Lead Soldering Temperature	T_L	260 (10 sec.)	
Operating Temperature	T_J	-55 to +125	
Storage Temperature	T_{STG}	-55 to +150	

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified

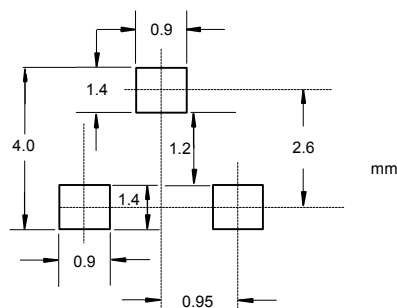
PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE V_{BR} @1 mA	CLAMPING VOLTAGE V_C @ 1 Amp (FIGURE 2)	CLAMPING VOLTAGE V_C @ 5 Amp (FIGURE 2)	LEAKAGE CURRENT I_p @ V_{WM}	CAPACITANCE @0V, 1 MHz C Pin 1-3 or 2-3	CAPACITANCE @0V, 1 MHz C Pin 1-2
		VOLTS	VOLTS	VOLTS	VOLTS	μA	pF	pF
			MIN	MAX	MAX	MAX	MAX	MAX
SMD03C	M03	3.3	4	7	8.5	100	700	350
SMD05C	M05	5.0	6.1	9.8	11	12	420	210
SMD12C	M12	12.0	13.3	19	24	0.5	150	75
SMD15C	M15	15.0	16.7	24	30	0.5	100	50
SMD24C	M24	24.0	26.7	43	55	0.5	60	30
SMD36C	M36	36.0	40.0	60	75	0.5	60	30

NOTE: Transient Voltage Suppression (TVS) product is normally selected based on its stand off Voltage V_{WM} . Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.



Part Number	Marking Code
SMD05C	M05
SMD12C	M12
SMD15C	M15
SMD24C	M24
SMD36C	M36

Suggested Solder Pad Layout



Applications Information

Device Connection Options

The SM series is designed to protect one bidirectional or two unidirectional data or I/O lines operating at 5 to 36 volts. Connection options are as follows:

Bidirectional: Pin 1 is connected to the data line and pin 2 is connected to ground (Since the device is symmetrical, these connections may be reversed). For best results, the ground connection should be made directly to a ground plane on the board. The path length should be kept as short as possible to minimize parasitic inductance. Pin 3 is not connected.

Unidirectional: Data lines are connected to pin 1 and pin 2. Pin 3 is connected to ground. For best results, this pin should be connected directly to a ground plane on the board. The path length should be kept as short as possible to minimize parasitic inductance.

Circuit Board Layout Recommendations for suppression of ESD.

Good circuit board layout is critical for the suppression of fast rise-time transients such as ESD. The following guidelines are recommended (Refer to application note SI99.01 for more detailed information):

Place the TVS near the input terminals or connectors to restrict transient coupling.

Minimize the path length between the TVS and the protected line.

Minimize all conductive loops including power and ground loops.

The ESD transient return path to ground should be kept as short as possible.

Never run critical signals near board edges

Use ground planes whenever possible.