

# SMD03 THRU SMD36

## 300W TVS DIODE

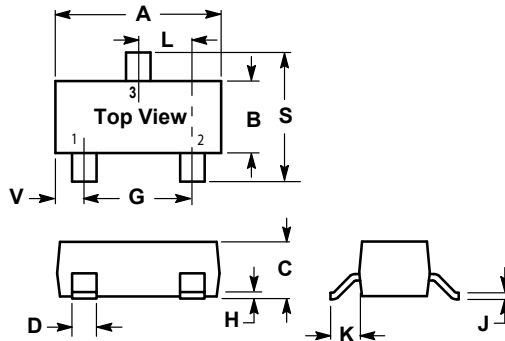
RoHS Compliant Product

### 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

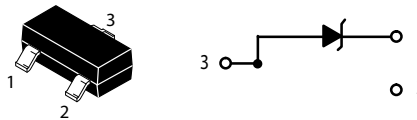
- Molded: SC59 Surface Mount
- Body marked with marking code.
- Mounting Position: Any
- Weight: 0.008 grams (approx.)



SC-59		
Dim	Min	Max
A	2.700	3.100
B	1.500	1.700
C	0.900	1.150
D	0.350	0.500
G	1.700	2.100
H	0.013	0.100
J	0.100	0.200
K	0.350	0.550
L	0.900	1.000
S	2.600	3.000
V	0.500	0.600
All Dimension in mm		

### APPLICATIONS

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



## MAXIMUM RATING SAND ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Units
Peak ulse Power ( $t_p=8/20$ us)	$P_{pk}$	300	Watts
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}C/W$
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

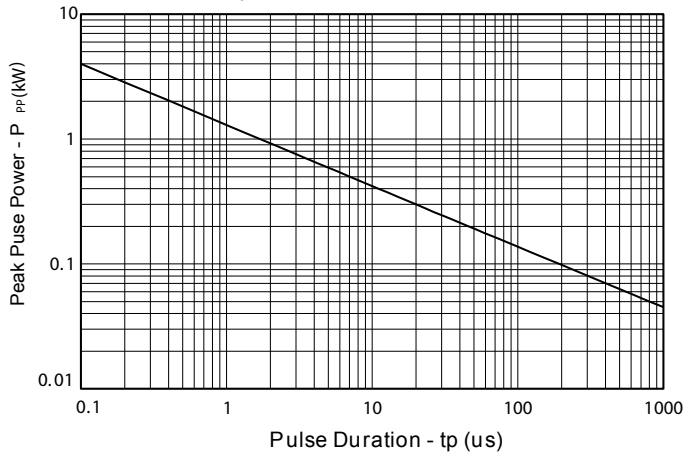
PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{BR}$ @1 mA	CLAMPING VOLTAGE $V_C$ @ 1 Amp (FIGURE 2)	CLAMPING VOLTAGE $V_C$ @ 5 Amp (FIGURE 2)	LEAKAGE CURRENT $I_p$ @ $V_{WM}$	CAPACITANCE @0V, 1 MHz C Pin 1-3
		VOLTS	VOLTS	VOLTS	VOLTS	$\mu A$	pF
		MIN	MIN	MAX	MAX	MAX	MAX
SMD03	X03	3.3	4-5	7	8.5	100	350
SMD05	X05	5.0	6.1-7.4	9.8	11	12	210
SMD12	X12	12.0	13.3-16.3	19	24	0.5	75
SMD15	X15	15.0	16.7-20.4	24	30	0.5	50
SMD24	X24	24.0	26.7-32.6	43	55	0.5	30
SMD36	X36	36.0	40.0-47.0	60	75	0.5	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.

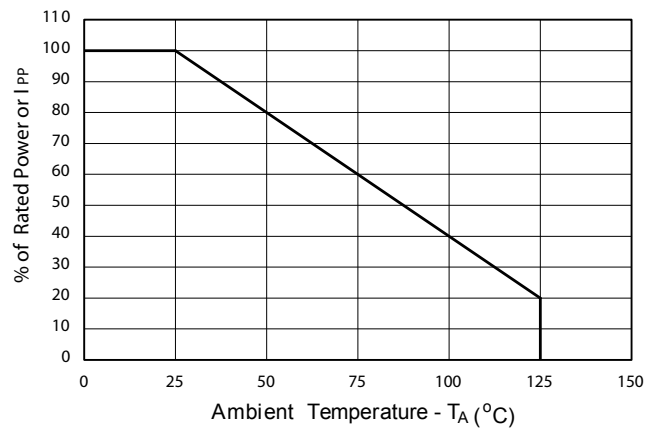
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## 300W TVS DIODE

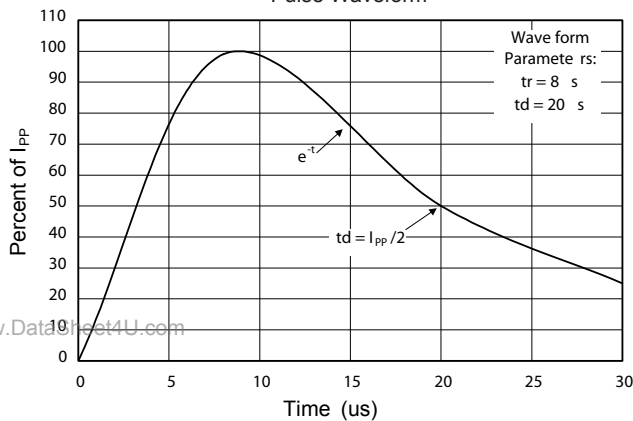
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



Pulse Waveform



### Applications Information

#### Device Connection Options

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

- Unidirectional: Data lines are connected to pin 1 and 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.