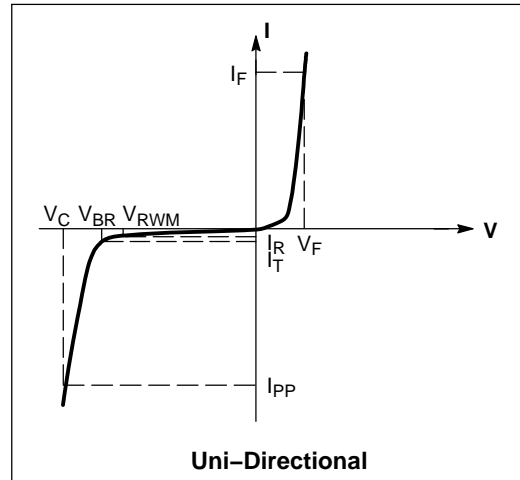


## SMS05T1 Series

### ELECTRICAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$\Theta V_{BR}$	Maximum Temperature Coefficient of $V_{BR}$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$
$Z_{ZT}$	Maximum Zener Impedance @ $I_{ZT}$
$I_{ZK}$	Reverse Current
$Z_{ZK}$	Maximum Zener Impedance @ $I_{ZK}$



### ELECTRICAL CHARACTERISTICS – UNIDIRECTIONAL

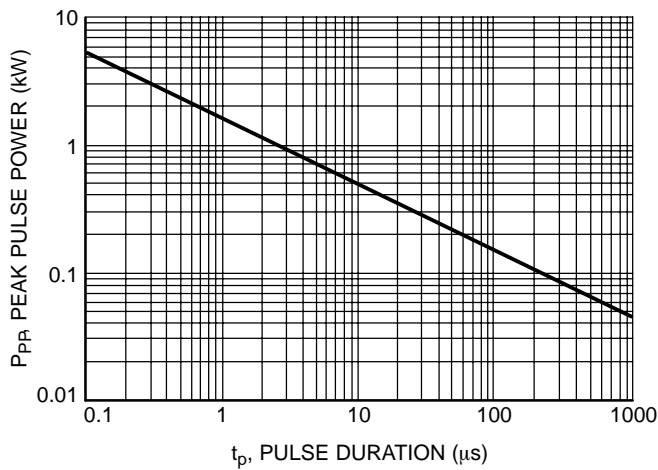
Device	Device Marking	Breakdown Voltage				Max Reverse Leakage Current		Max Reverse Voltage (Clamping Voltage) At Specified Reverse Surge Current (I <sub>RSM</sub> )		Max Reverse Voltage (Clamping Voltage) At Specified Reverse Surge Current (I <sub>RSM</sub> )		Capacitance @ 0 Volt Bias, 1 MHz	
		V <sub>BR</sub> (V)			I <sub>T</sub>	I <sub>R</sub>	V <sub>R</sub>	I <sub>RSM</sub> (8x20 μs)	V <sub>RSM</sub> (8x20 μs)	I <sub>RSM</sub> (8x20 μs)	V <sub>RSM</sub> (8x20 μs)	(pF)	
		Min	Nom	Max	(mA)	(μA)	(V)	(A)	(V)	(A)	(V)	Min	Max
SMS05T1	5V0	6.0	–	7.2	1.0	20	5.0	5.0	9.8	23	15.5	250	400
SMS12T1	12V	13.3	–	15	1.0	1.0	12	5.0	19.0	15	23.0	80	150
SMS15T1	15V	16.7	–	18.5	1.0	1.0	15	5.0	24.0	12	29.0	60	125
SMS24T1	24V	26.7	–	32	1.0	1.0	24	5.0	40.0	8	44.0	40	75

### ORDERING INFORMATION

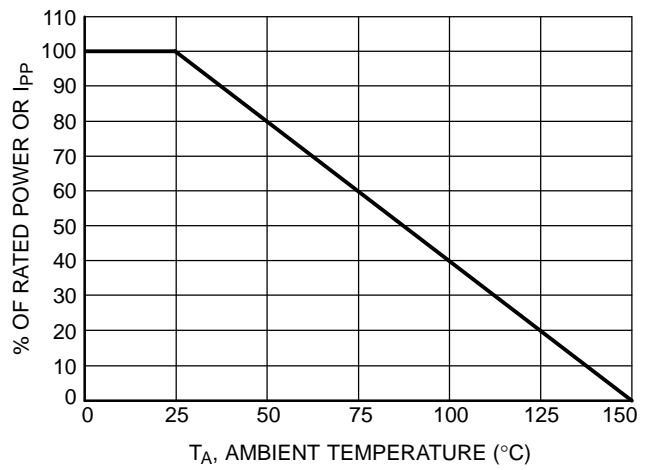
Device	Package	Shipping <sup>†</sup>
SMS05T1	SC-74	3000 / Tape & Reel
SMS05T1G	SC-74 (Pb-Free)	
SMS12T1	SC-74	3000 / Tape & Reel
SMS12T1G	SC-74 (Pb-Free)	
SMS15T1	SC-74	3000 / Tape & Reel
SMS15T1G	SC-74 (Pb-Free)	
SMS24T1	SC-74	3000 / Tape & Reel
SMS24T1G	SC-74 (Pb-Free)	

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

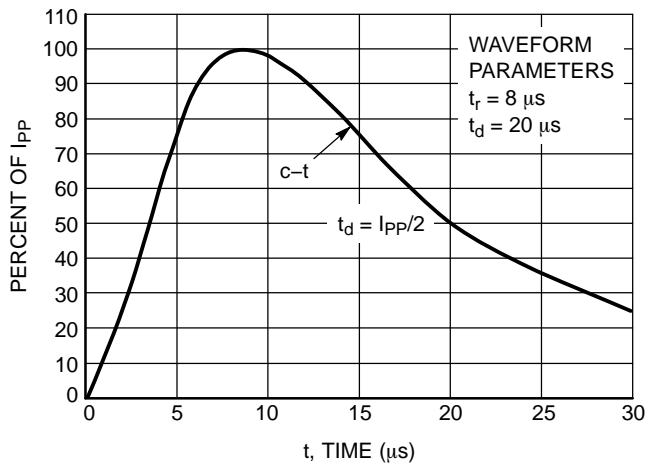
## SMS05T1 Series



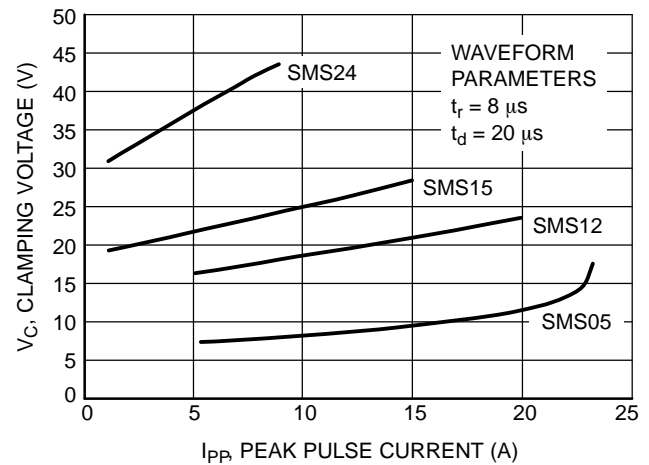
**Figure 1. Non-Repetitive Peak Pulse Power versus Pulse Time**



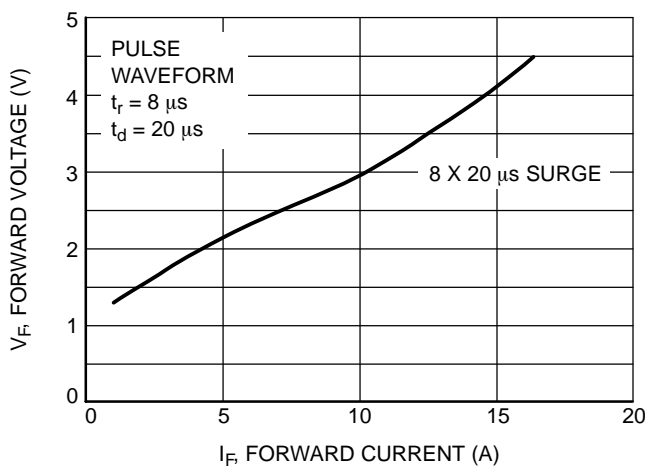
**Figure 2. Power Derating Curve**



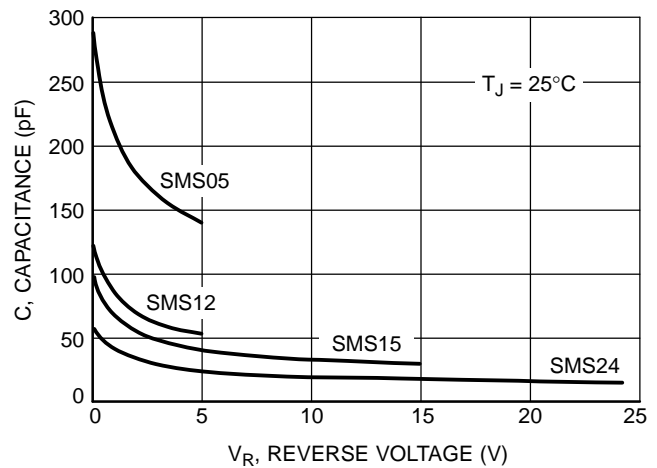
**Figure 3. Pulse Waveform**



**Figure 4. Clamping Voltage versus Peak Pulse Current**



**Figure 5. 8 x 20  $\mu s$   $V_F$**

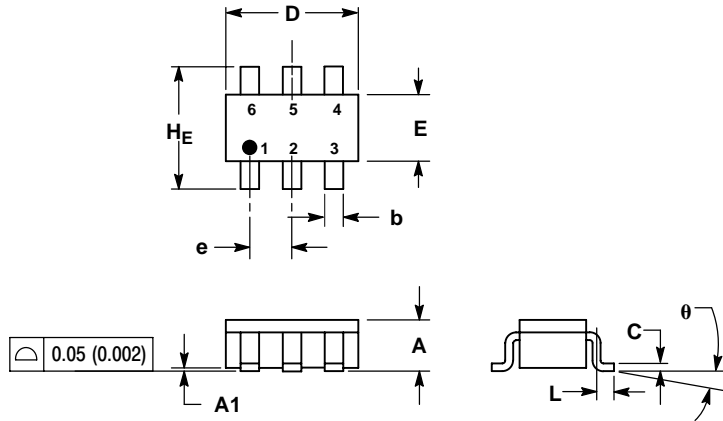


**Figure 6. Typical Capacitance (SMS05 Series)**

# SMS05T1 Series

## PACKAGE DIMENSIONS

### SC-74 (SC-59ML) CASE 318F-05 ISSUE M



#### NOTES:

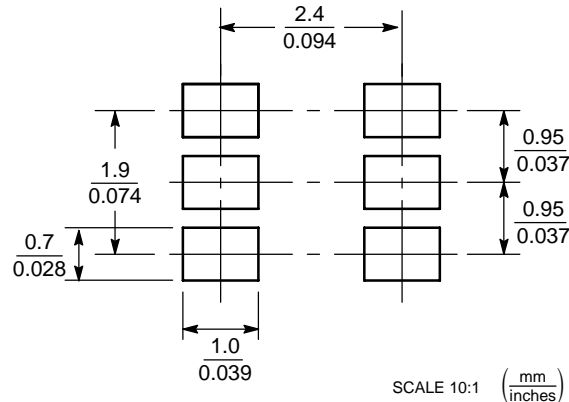
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318F-01, -02, -03, -04 OBSOLETE. NEW STANDARD 318F-05.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	1.00	1.10	0.035	0.039	0.043
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.25	0.37	0.50	0.010	0.015	0.020
c	0.10	0.18	0.26	0.004	0.007	0.010
D	2.90	3.00	3.10	0.114	0.118	0.122
E	1.30	1.50	1.70	0.051	0.059	0.067
e	0.85	0.95	1.05	0.034	0.037	0.041
L	0.20	0.40	0.60	0.008	0.016	0.024
HE	2.50	2.75	3.00	0.099	0.108	0.118
θ	0°	—	10°	0°	—	10°


#### STYLE 1:

- PIN 1. CATHODE
- 2. ANODE
- 3. CATHODE
- 4. CATHODE
- 5. ANODE
- 6. CATHODE

### SOLDERING FOOTPRINT\*



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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