Elektronische Bauelemente

SM5MxxT-C Series

Voltage 10V~36V

3600W Transient Voltage Suppressors Family

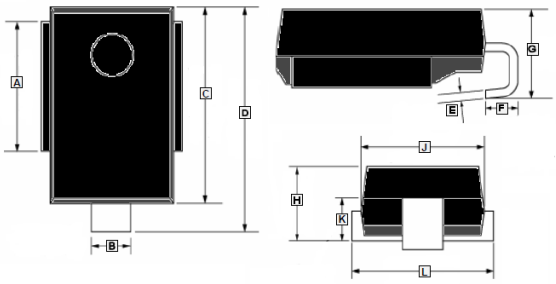
RoHS Compliant Product

A suffix of “-C” specifies halogen-free and lead-free

FEATURES

- High Current Capability
- Low Forward Voltage Drop
- Low Reverse Current
- Low Thermal Resistance
- Excellent High Temperature Stability
- Low Power Loss and High Efficiency
- High Forward Surge Capability
- Meet ISO 16750-2 Load Dump Test (Varied by Test Condition)
- Meets MSL level 1, per J-STD-020

DO-218



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	8.7	9.3	G	4.7	5.7
B	2.3	3	H	4.7	5.25
C	13.2	13.8	J	8.2	8.8
D	15	16	K	2.65	3.55
E	0.45	0.9	L	9.5	10.5
F	1.5	2.7			

MECHANICAL DATE

- Terminals: Matte tin plated, solderable per MIL-STD-750, Method 2026, J-STD-002 and JESD 22-B102
- Molding Compound Flammability Rating:UL94-0
- HE3 suffix meets JESD 201 class 2 whisker test
- Polarity: Heatsink is anode

APPLICATION

- High Peak Power
- High-Temperature
- Clamping Diode
- Load Switching and Lighting

PACKAGE INFORMATION

Package	MPQ	Leader Size
DO-218	0.75K	13 inch

ORDER INFORMATION

Part Number	Type
SM5MxxT-C Series	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter		Symbol	Ratings	Unit
Peak Pulse Power Dissipation	10/1000μs waveform	P_{PPM}	3600	W
	10/10000μs waveform		2800	
Power Dissipation on Infinite Heatsink @T_C=25℃		P_D	5	W
Peak Forward Surge Current, 8.3ms single half sine-wave		I_{FSM}	500	A
Typical Thermal Resistance, Junction-Case		$R_{\theta JC}$	1.1	℃/W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~175	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Part Number	Breakdown Voltage V_{BR}(V)		Test Current I_T(mA)	Stand-off Voltage V_{RWM}(V)	Maximum Reverse Leakage @V_{RWM} I_D (μA)	Maximum Leakage @V_{RWM} T_J=175ºC I_D (μA)	Maximum Peak Pulse Current @10/1000μs Waveform (A)	Maximum Clamping Voltage @I_{PP} V_C (V)
	Min.	Max.						
SM5M10T-C	11.1	13.6	5	10	15	250	191	18.8
SM5M10AT-C		12.3	5	10	15	250	211	17
SM5M11T-C	12.2	14.9	5	11	10	150	179	20.1
SM5M11AT-C		13.5	5	11	10	150	198	18.2
SM5M12T-C	13.3	16.3	5	12	10	150	164	22
SM5M12AT-C		14.7	5	12	10	150	181	19.9
SM5M13T-C	14.4	17.6	5	13	10	150	151	23.8
SM5M13AT-C		15.9	5	13	10	150	167	21.5
SM5M14T-C	15.6	19.1	5	14	10	150	140	25.8
SM5M14AT-C		17.2	5	14	10	150	155	23.2
SM5M15T-C	16.7	20.4	5	15	10	150	134	26.9
SM5M15AT-C		18.5	5	15	10	150	148	24.4
SM5M16T-C	17.8	21.8	5	16	10	150	125	28.8
SM5M16AT-C		19.7	5	16	10	150	138	26
SM5M17T-C	18.9	23.1	5	17	10	150	118	30.5
SM5M17AT-C		20.9	5	17	10	150	130	27.6
SM5M18T-C	20	24.4	5	18	10	150	112	32.2
SM5M18AT-C		22.1	5	18	10	150	123	29.2
SM5M20T-C	22.2	27.1	5	20	10	150	101	35.8
SM5M20AT-C		24.5	5	20	10	150	111	32.4
SM5M22T-C	24.4	29.8	5	22	10	150	91	39.4
SM5M22AT-C		26.9	5	22	10	150	101	35.5
SM5M24T-C	26.7	32.6	5	24	10	150	84	43
SM5M24AT-C		29.5	5	24	10	150	93	38.9
SM5M26T-C	28.9	35.3	5	26	10	150	77	46.6
SM5M26AT-C		31.9	5	26	10	150	86	42.1
SM5M27T-C	24	30	10	22	0.2	10	55	40
SM5M28T-C	31.1	38	5	28	10	150	72	50.1
SM5M28AT-C		34.4	5	28	10	150	79	45.4
SM5M30T-C	33.3	40.7	5	30	10	150	67	53.5
SM5M30AT-C		36.8	5	30	10	150	74	48.4
SM5M33T-C	36.7	44.9	5	33	10	150	61	59
SM5M33AT-C		40.6	5	33	10	150	68	53.3
SM5M36T-C	40	48.9	5	36	10	150	56	64.3
SM5M36AT-C		44.2	5	36	10	150	62	58.1

Note:

1. For all types maximum V_F=1.8V at I_F=100A measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

RATINGS AND CHARACTERISTIC CURVES

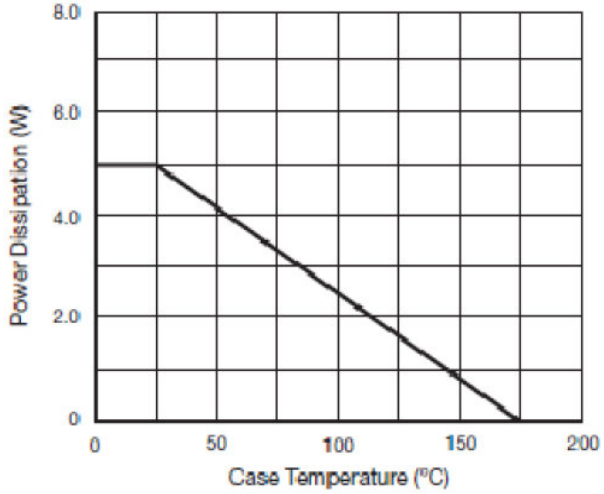


Fig. 1 - Power Derating Curve

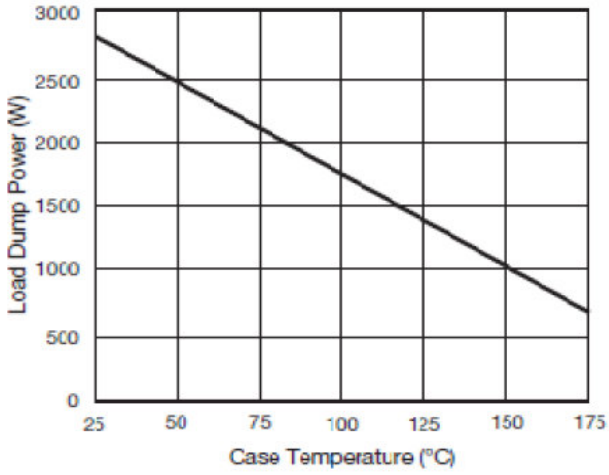


Fig. 2 - Load Dump Power Characteristics
(10 ms Exponential Waveform)

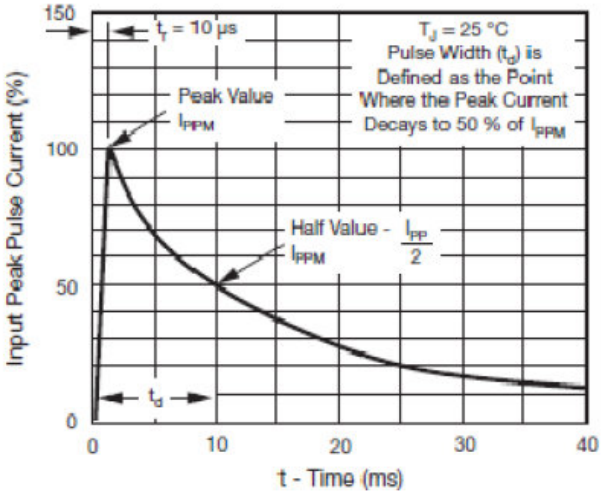


Fig. 3 - Pulse Waveform

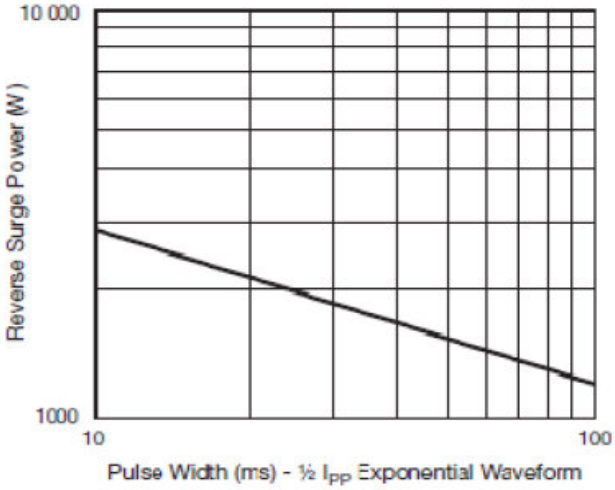


Fig. 4 - Reverse Power Capability

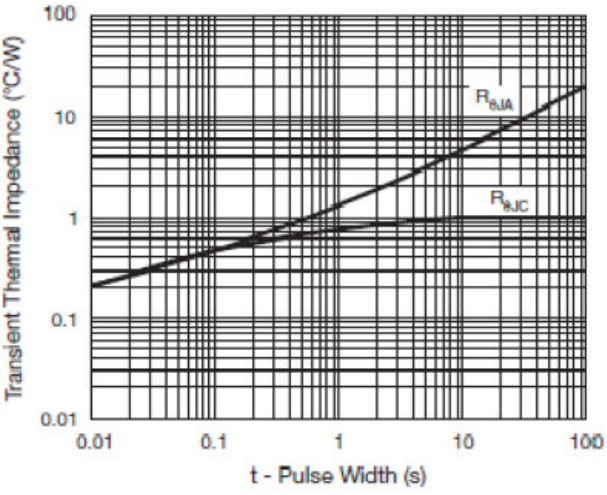


Fig. 5 - Typical Transient Thermal Impedance

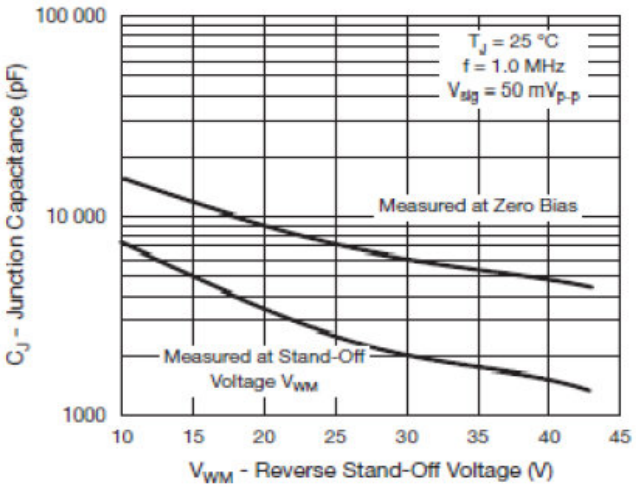


Fig. 6 - Typical Junction Capacitance