Surface Mount Transient Voltage Suppressors

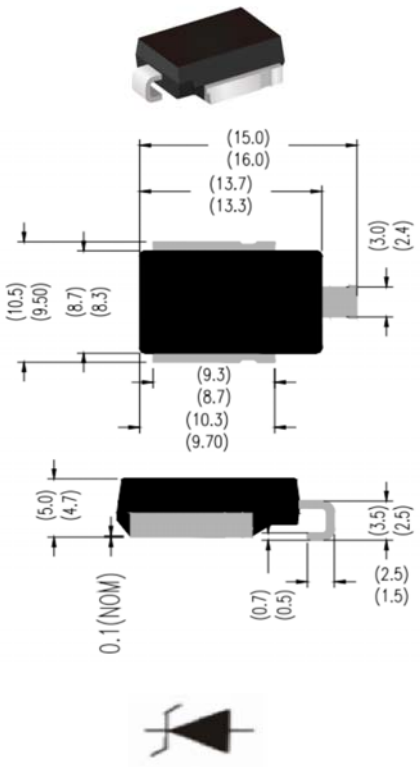
High temperature stability and high reliability conditions

FEATURES

- Junction passivation optimized design passivated anisotropic rectifier technology.
- T_J = 175℃ capability suitable for high reliability and automotive requirement.
- Available in uni-directional polarity only.
- Low leakage current.
- Low forward voltage drop.
- High surge capability.
- Meets ISO16750-2 surge specification(varied by test condition).
- Meets MSL-1, per J-STD-020, LF maximum peak of 245℃.
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC.

DO-218

Unit:mm



TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application.

MECHANICAL DATA

Case: DO-218AB

Molding compound meets UL 94V-0 flammability rating

Base P/NHE3-RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002

MAXIMUM RATINGS(T_C=25℃, RH=45%-75%, unless otherwise noted)			
Parameter	**Symbol**	**Value**	**Unit**
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	8000	Watts
Peak pulse power dissipation on 10/10000μs waveform		6000	Watts
Power dissipation on infinite heat sink at T_C=25℃	P_D	8.5	Watts
Peak pulse current with 10/1000μs waveform	I_{PPM}(1)	See next table	Amps
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	750	Amps
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to +175	℃
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.9	℃/W

Note

(1) Non-repetitive current pulse derated above T_A=25℃

ELECTRICAL CHARACTERISTICS								
Part Number	**V_R**	**I_T**	**I_R@V_R**		**V_{BR}@I_T**		**V_C@I_{PP}**	**I_{PP}**
Uni-polar	**V**	**mA**	**μA@25°C**	**μA@175°C**	**min(V)**	**max (V)**	**V**	**A**
SM8T20A	20.0	5	5	150	22.2	24.5	32.4	247
SM8T22A	22.0	5	5	150	24.4	26.9	35.5	225
SM8T24A	24.0	5	5	150	26.7	29.5	38.9	205
SM8T26A	26.0	5	5	150	28.9	31.9	42.1	190
SM8T28A	28.0	5	5	150	31.1	34.4	45.4	176
SM8T30A	30.0	5	5	150	33.3	36.8	48.4	165
SM8T32A	32.0	5	5	150	35.5	39.4	51.4	156
SM8T33A	33.0	5	5	150	36.7	40.6	53.3	150
SM8T36A	36.0	5	5	150	40.0	44.2	58.1	138
SM8T40A	40.0	5	5	150	44.4	49.1	64.5	124
SM8T43A	43.0	5	5	150	47.8	52.8	69.4	115

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.

②. Surge waveform: 10/1000μs

V_R: Stand-off voltage -- Maximum voltage that can be applied

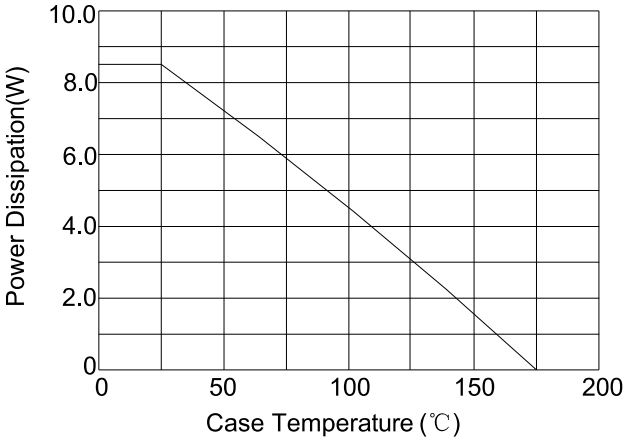
V_{BR}: Breakdown voltage

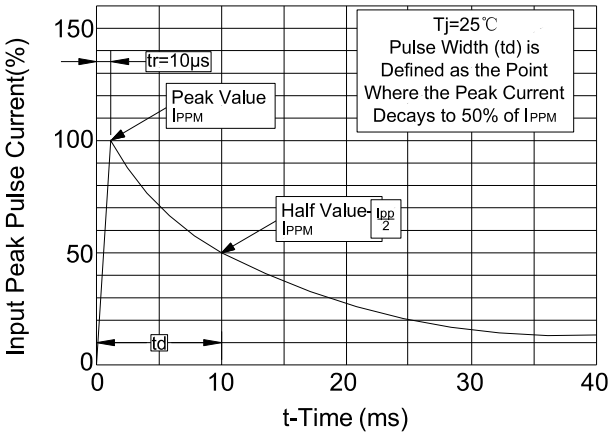
V_C: Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R: Reverse leakage current

I_T: Test current

RATINGS AND CHARACTERISTICS CURVES (T_A=25℃, unless otherwise noted)





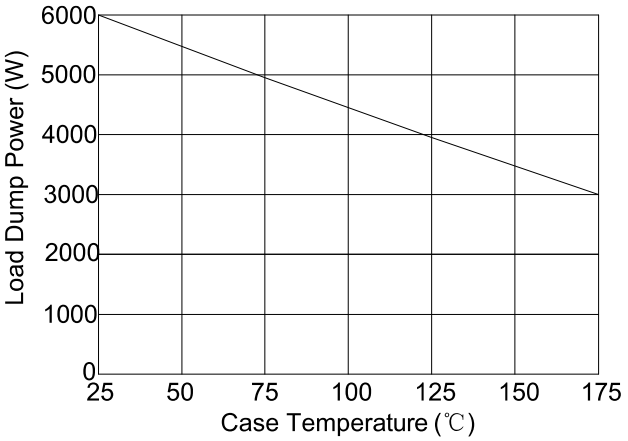


FIG.3: Load Dump Power Characteristics (10ms Exponential Waveform)

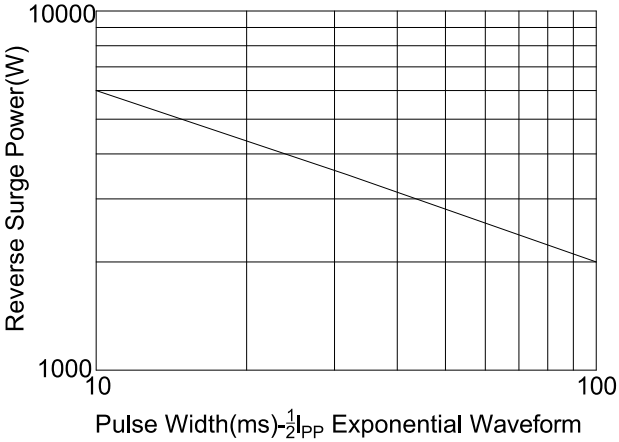


FIG.4: Reverse Power Capability

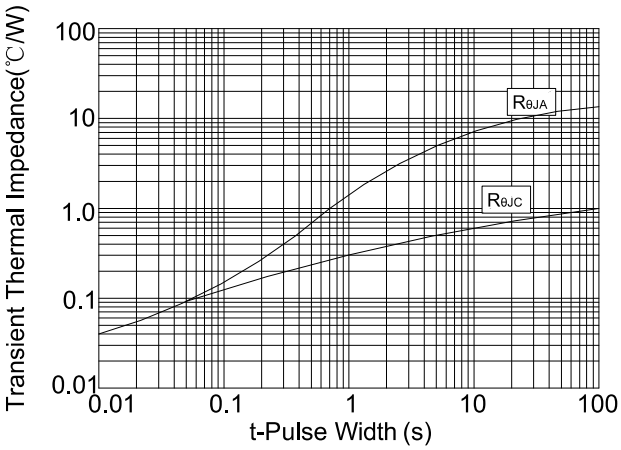


FIG.5: Typical Transient Thermal Impedance