



Surface Mount Automotive Transient Voltage Suppressors

SM8A27

FEATURES

- Junction passivation optimized design passivated
- anisotropic rectifier technology
- $T_J = 175\text{ }^{\circ}\text{C}$ capability suitable for high reliability
- and automotive requirement
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge spec.
- Low forward voltage drop

MECHANICAL DATA

- Case: Molded plastic body, surface mount with heatsink integrally mounted in the encapsulation
- Terminals: Plated, solderable per MIL-STD-750, Method 2026
- Polarity: Heatsink is anode
- Mounting Position: Any

Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Value	Unit
Peak pulse power dissipation with 10/1000 μs waveform	P_{PPM}	6600	W
Steady state power dissipation	P_D	8.0	W
Non-repetitive peak reverse surge current for 10 μs /10 ms exponentially decaying waveform	I_{RSM}	130	A
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	700	A
Maximum working stand-off voltage	V_{WM}	22	V
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.9	$^{\circ}\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55---+175	$^{\circ}\text{C}$

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ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

PARAMETER	TEST CONDITIONS		SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse Zener voltage	I _Z = 10 mA		V _Z	24.0		30	V
Zener voltage temperature coefficient	I _Z = 10 mA		V _{ZTC}	-		36	mV/°C
Instantaneous forward voltage	I _{PP} = 75 A		V _C	-		40	V
Reverse leakage current	I _F = 6.0 A		V _F (1)	-		0.98	V
	I _F = 100 A			-	0.93	-	
Reverse leakage current	Rated V _{WM}	T _J = 25 °C	I _R	-	-	1.0	μA
		T _J = 175 °C		-	-	50	

Note

(1) Measured on a 300 μs square pulse width

RATINGS AND CHARACTERISTICS CURVES

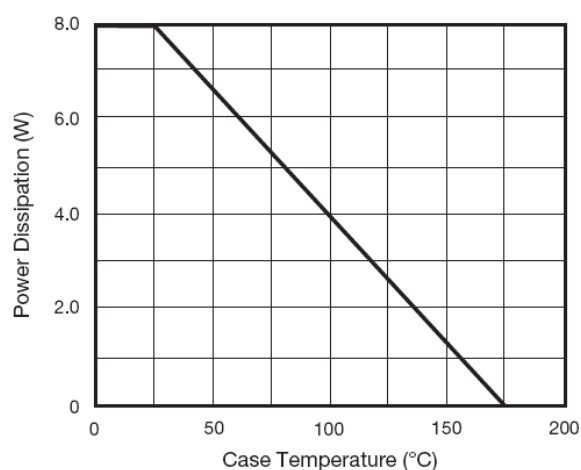


Fig. 1 - Power Derating Curve

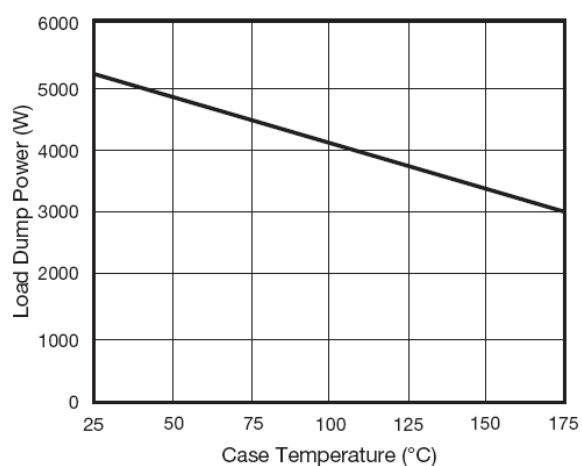


Fig. 2 - Load Dump Power Characteristics
(10 ms Exponential Waveform)

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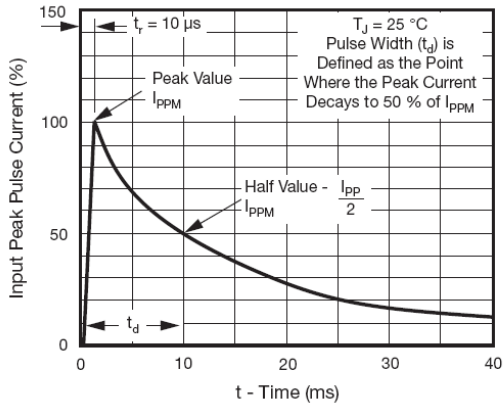


Fig. 3 - Pulse Waveform

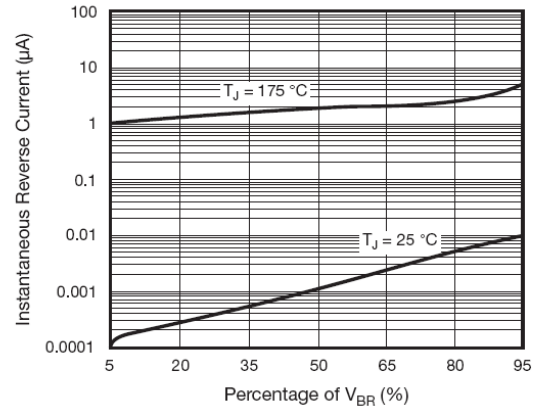


Fig. 6 - Typical Reverse Characteristics

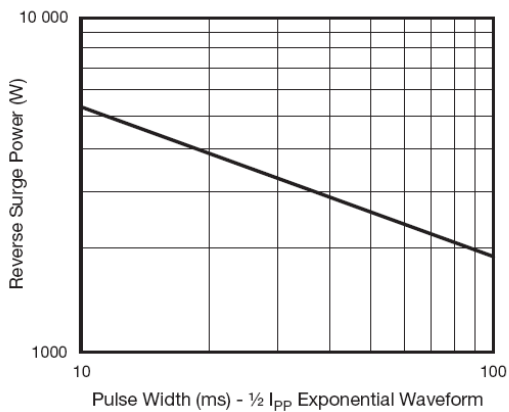


Fig. 4 - Reverse Power Capability

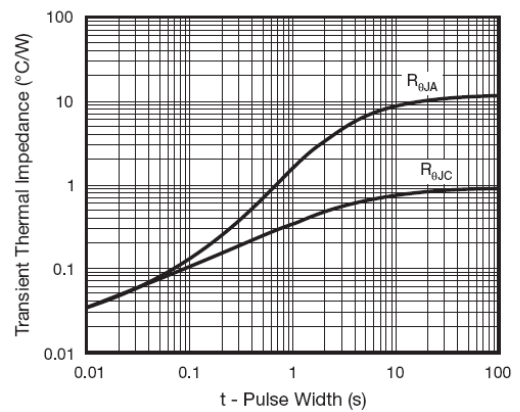


Fig. 7 - Typical Transient Thermal Impedance

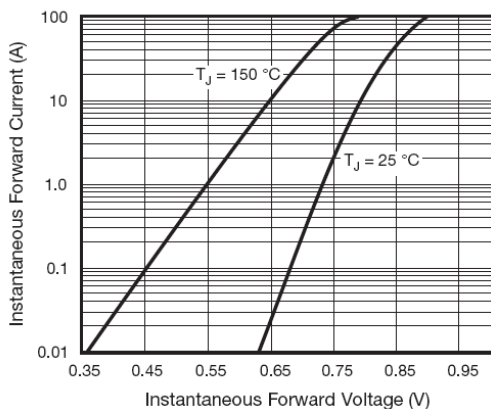
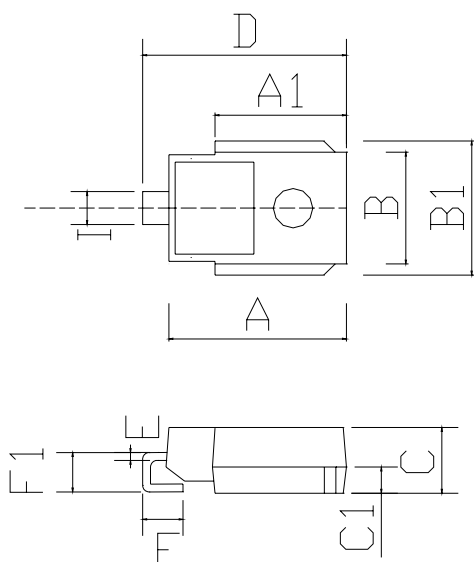


Fig. 5 - Typical Instantaneous Forward Characteristics

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PACKAGE OUTLINE DIMENSIONS



SZQB		
Dim	Min	Max
A	13.00	13.70
A1	9.80	10.50
B	8.20	8.70
B1	9.80	10.50
C	4.85	5.15
D	15.50	16.50
E	0.50	0.70
F	1.70	2.50
F1	3.00	4.00
I	3.20	3.80
All Dimensions in mm		

PACKAGE INFORMATION

Device	Package	Shipping
SM8A27	SZQB	500Units/Box