



HF-SMAJ6.0AV01

6.0V TVS (Transient Voltage Suppressors)

瀚飞科技

Preliminary

2018.10.10

Version 1.0



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PRIMARY CHARACTERISTICS	
V_{BR} uni-directional	6.67 V to 7.37 V
V_{WM}	6.0 V
P_{PPM}	200 W
I_{FSM}	40 A
T_J max.	150°C
Polarity	Uni-directional
Package	SMA (DO-214AC)

1. FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- 200 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01 % (150 W above 78 V)
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 or P/NHM3

2. TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

3. MECHANICAL DATA

- Case: SMA (DO-214AC)
- Molding compound meets UL 94 V-0 flammability rating
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade
- Base P/NHE3 - RoHS-compliant and AEC-Q101 qualified
- Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified
- Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102 E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test
- Polarity: for uni-directional types the band denotes cathode end, no marking on bi-directional types

MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform	P_{PPM}	400	W
Peak pulse current with a waveform	I_{PPM}	See next table	A
Peak forward surge current 8.3 ms single half sine-wave uni-directional only	I_{FSM}	40	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C



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ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

DEVICE TYPE	DEVICE MARKING CODE		BREAKDOWN VOLTAGE V _{BR} AT I _T (1)		TEST CURRENT I _T (mA)	STAND-OFF VOLTAGE V _{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V _{WM} I _D (μA)(3)	MAXIMUM PEAK PULSE SURGE CURRENT I _{PPM} (A)(2)	MAXIMUM CLAMPING VOLTAGE AT I _{PPM} V _C (V)
	UNI	BI	MIN.	MAX.					
SMAJ6.0A	AG	WG	6.67	7.37	10	6.0	800	38.8	10.3

Notes

- (1) Pulse test: $t_p \leq 50$ ms
- (2) Surge current waveform per fig. 3 and derate per fig. 2
- (3) For bi-directional types having V_{WM} of 10 V and less, the I_D limit is doubled
- (4) All terms and symbols are consistent with ANSI/IEEE C62.35

THERMAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to ambient (1)	R _{θJA}	120	°C/W
Typical thermal resistance, junction to lead	R _{θJL}	30	°C/W

Note

- (1) Mounted on minimum recommended pad layout

4. RATINGS AND CHARACTERISTICS CURVES (TA = 25 °C unless otherwise noted)

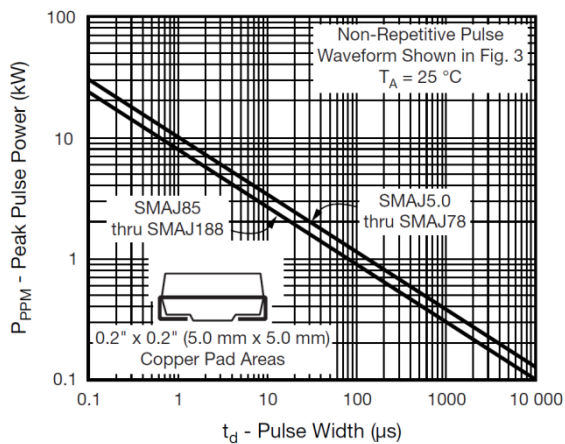


Fig. 1 - Peak Pulse Power Rating Curve

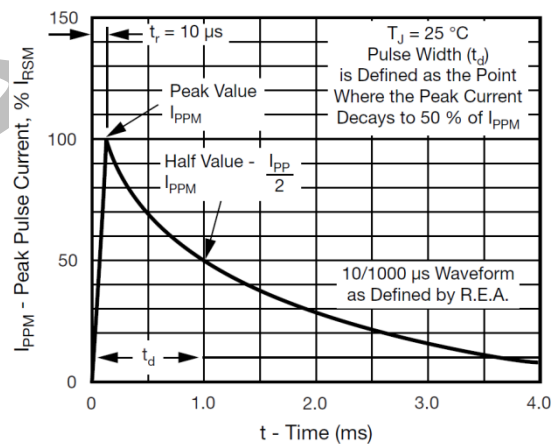


Fig. 3 - Pulse Waveform



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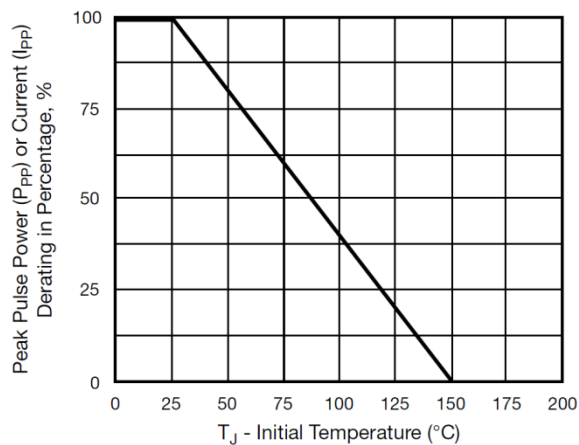


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

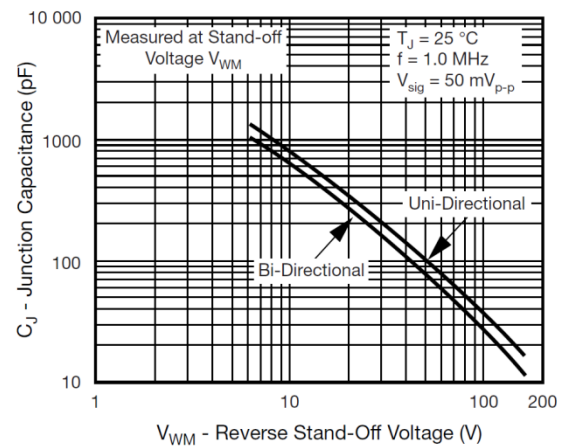


Fig. 4 - Typical Junction Capacitance

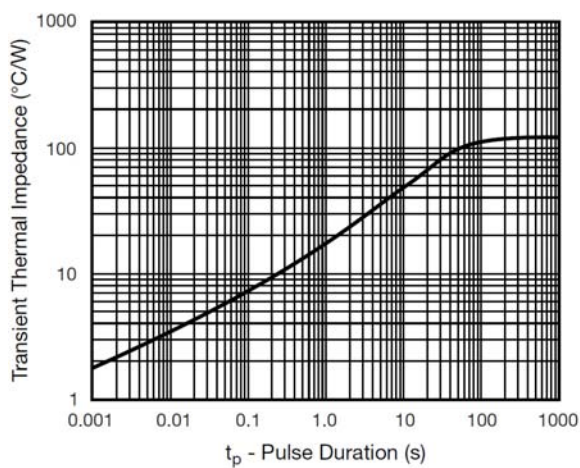


Fig. 5 - Typical Transient Thermal Impedance

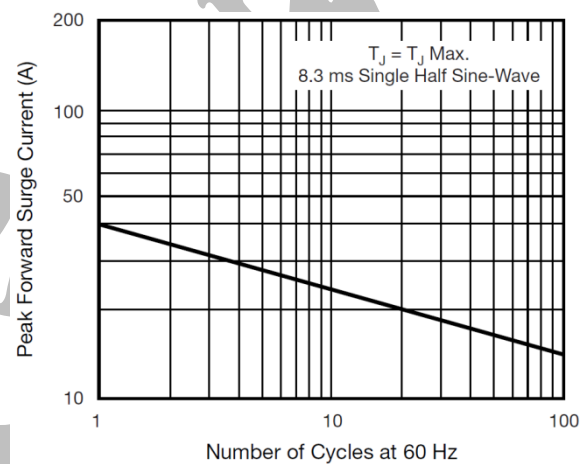


Fig. 6 - Maximum Non-Repetitive Forward Surge Current
Uni-Directional Only

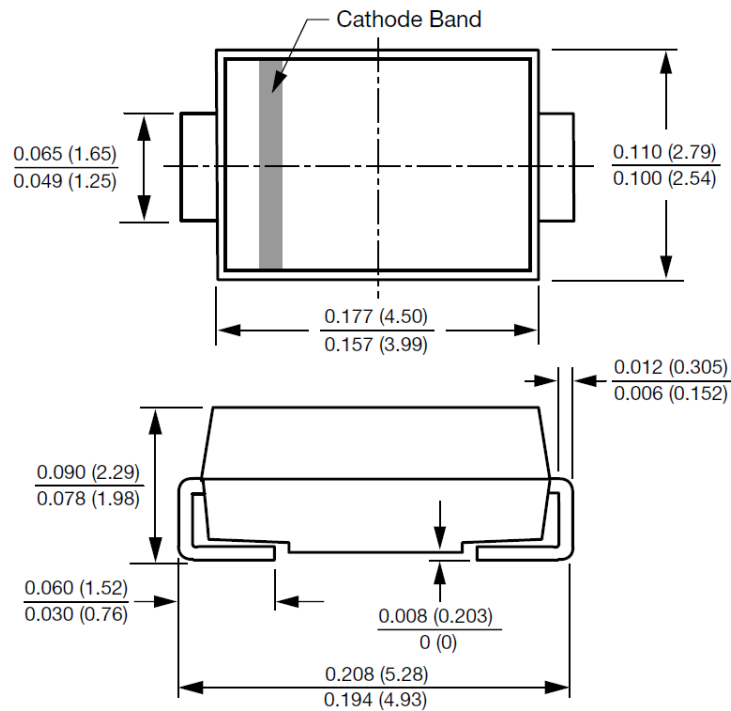
5. PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



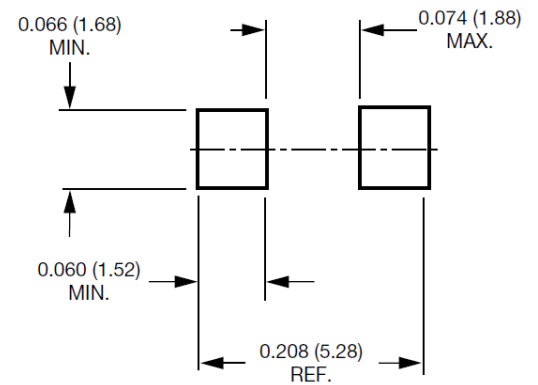
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SMA (DO-214AC)



Mounting Pad Layout



6. Version History

Date	Version number	Introduce	Number Of Pages
2018.10.10	1.0	Initial document;	5