Surface Mount TRANSZORB® Transient Voltage Suppressors

DO-214AB (SMC J-Bend)

FEATURES

- Available in uni-directional polarity only
- 5000 W peak pulse power capability with a 10/1000 µs waveform
- 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

  - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

PRIMARY CHARACTERISTICS	
V_{BR}	11.1 V to 24.5 V
V_{WM}	10 V to 20 V
P_{PPM}	5000 W
T_J max.	150 °C
Polarity	Uni-directional
Package	DO-214AB (SMCJ)

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.

MECHANICAL DATA

Case: DO-214AB (SMCJ)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant
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
M3 suffix meets JESD 201 class 2 whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: for uni-directional types the band denoted cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 µs waveform (fig. 1)	P_{PPM} (1)	5000	W
Peak pulse current with a 10/1000 µs waveform (fig 3.)	I_{PPM} (1)	See next table	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Note

(1) Non-repetitive current pulse, per fig. 3 and derated above T_A = 25 °C, per fig. 2

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

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} (1) (V) AT I_T		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA)	MAX. PEAK PULSE SURGE CURRENT I_{PPM} (2) (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
SMC5K10A	5GDX	11.1	12.3	1.0	10	10.0	294.1	17.0
SMC5K12A	5GEE	13.3	14.7	1.0	12	10.0	251.3	19.9
SMC5K13A	5GEG	14.4	15.9	1.0	13	10.0	232.6	21.5
SMC5K16A	5GEP	17.8	19.7	1.0	16	2.0	192.3	26.0
SMC5K17A	5GER	18.9	20.9	1.0	17	2.0	181.2	27.6
SMC5K18A	5GET	20.0	22.1	1.0	18	2.0	171.2	29.2
SMC5K20A	5GEV	22.2	24.5	1.0	20	2.0	154.3	32.4

Notes

(1) Pulse test: $t_p \leq 50$ ms
(2) Surge current waveform per fig. 3 and derated per fig.2
(3) All terms and symbols are consistent with ANSI/IEEE C62.35

For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com
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ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMC5K10A-M3/H	0.257	H	850	7" diameter plastic tape and reel
SMC5K10A-M3/I	0.257	I	3500	13" diameter plastic tape and reel
SMC5K10AHM3/H (1)	0.257	H	850	7" diameter plastic tape and reel
SMC5K10AHM3/I (1)	0.257	I	3500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

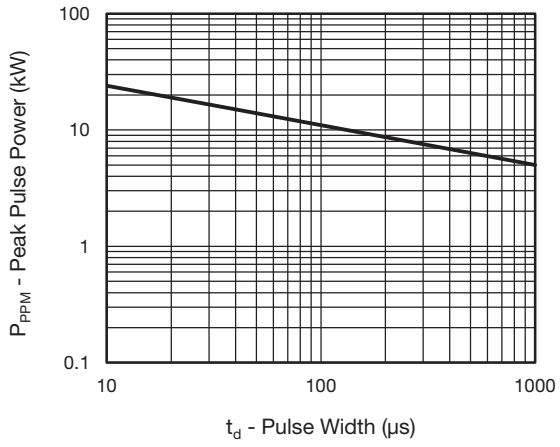

Fig. 1 - Peak Pulse Power Derating Curve

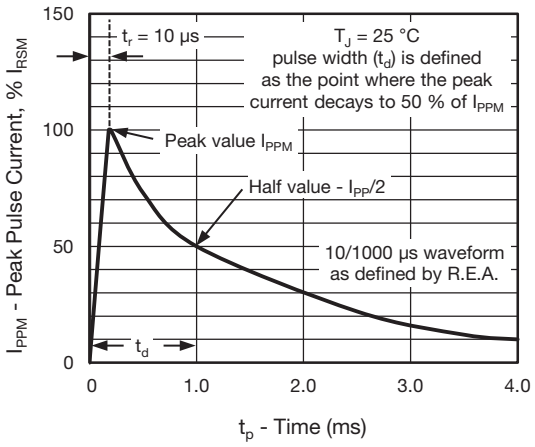

Fig. 3 - Pulse Waveform

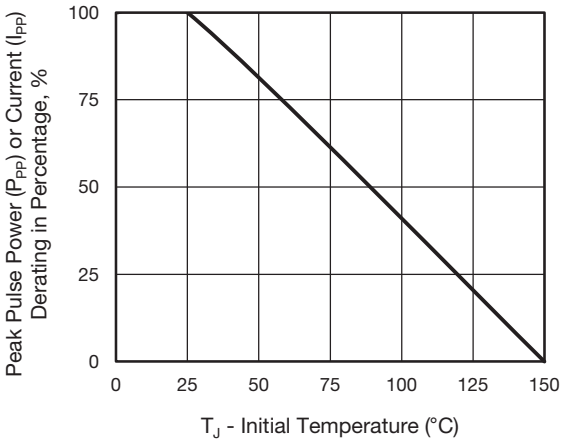

Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

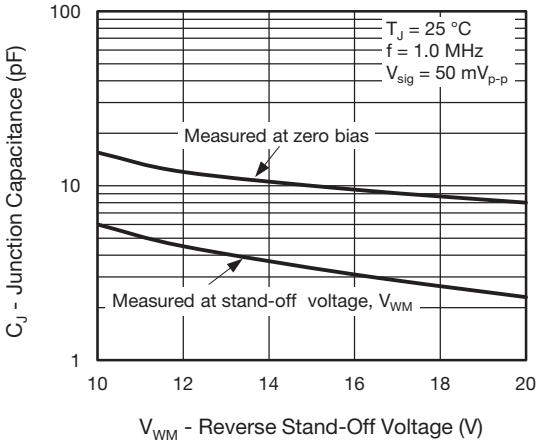

Fig. 4 - Typical Junction Capacitance

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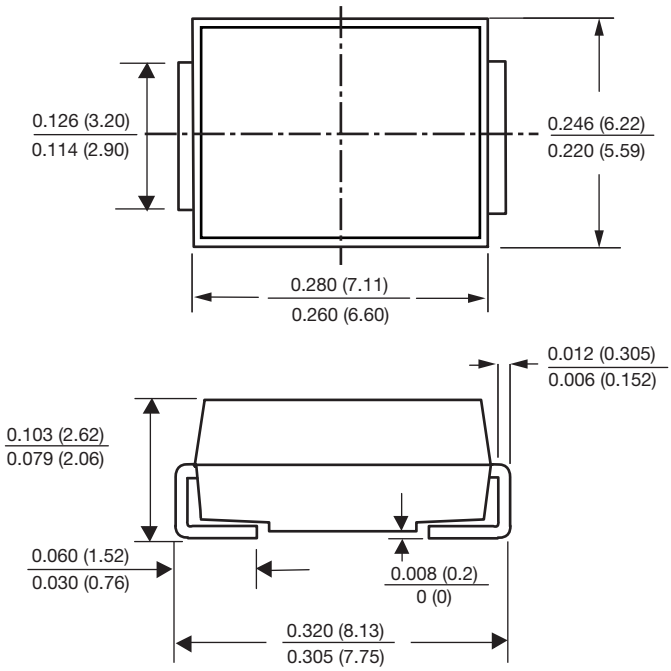
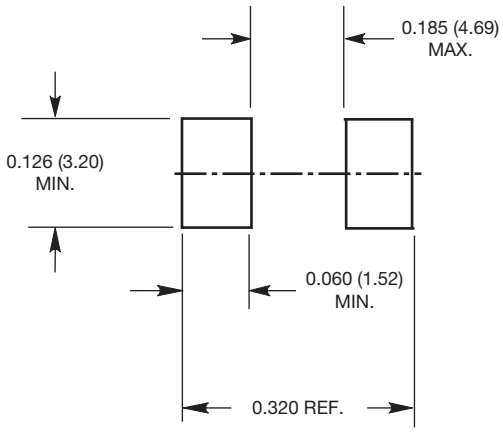
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AB (SMC J-Bend)



Mounting Pad Layout



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