SMC3K22CA thru SMC3K78CA

Vishay General Semiconductor

Surface Mount TRANSZORB® Transient Voltage Suppressors



SMC (DO-214AB)



LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
V_{BR}	24.4 V to 95.8 V
V_{WM}	22 V to 78 V
P_{PPM}	3000 W
T_J max.	150 °C
Polarity	Bidirectional
Package	SMC (DO-214AB)

FEATURES

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE Available

- Available in bidirectional polarity only
- 3000 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
- Not recommended for PCB bottom side wave mounting
- AEC-Q101 qualified
- UL recognition for safety 497B with file number E136766
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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: SMC (DO-214AB)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade
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: no marking on bidirectional types

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse power dissipation with a 10/1000 µs waveform	P_{PPM} (1)	3000	W
Peak pulse current with a 10/1000 µs waveform	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 and derated above T_A = 25 °C

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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.**					
SMC3K22CA	3BEX	24.4	26.9	1.0	22	2.0	84.5	35.5
SMC3K24CA	3BEZ	26.7	29.5	1.0	24	2.0	77.1	38.9
SMC3K26CA	3BFE	28.9	31.9	1.0	26	2.0	71.3	42.1
SMC3K28CA	3BFG	31.1	34.4	1.0	28	2.0	66.1	45.4
SMC3K30CA	3BFK	33.3	36.8	1.0	30	2.0	62.0	48.4
SMC3K33CA	3BFM	36.7	40.6	1.0	33	2.0	56.3	53.3
SMC3K36CA	3BFP	40.0	44.2	1.0	36	2.0	51.6	58.1
SMC3K40CA	3BFR	44.4	49.1	1.0	40	2.0	46.5	64.5
SMC3K43CA	3BFT	47.8	52.8	1.0	43	2.0	43.2	69.4
SMC3K45CA	3GFV	50.0	55.3	1.0	45	2.0	41.3	72.7
SMC3K48CA	3GFX	53.3	58.9	1.0	48	2.0	38.8	77.4
SMC3K51CA	3GFZ	56.7	62.7	1.0	51	2.0	36.4	82.4
SMC3K54CA	3GGE	60.0	66.3	1.0	54	2.0	34.4	87.1
SMC3K58CA	3GGG	64.4	71.2	1.0	58	2.0	32.1	93.6
SMC3K60CA	3GGK	66.7	73.7	1.0	60	2.0	31.0	96.8
SMC3K64CA	3GGM	71.1	78.6	1.0	64	2.0	29.1	103
SMC3K70CA	3GGP	77.8	86.0	1.0	70	2.0	26.5	113
SMC3K75CA	3GGR	83.3	92.1	1.0	75	2.0	24.8	121
SMC3K78CA	3GGT	86.7	95.8	1.0	78	2.0	23.8	126

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SMC3K22CA-M3/57	0.257	57	850	7" diameter plastic tape and reel
SMC3K22CA-M3/9A	0.257	9A	3500	13" diameter plastic tape and reel
SMC3K22CAHM3/57 (1)	0.257	57	850	7" diameter plastic tape and reel
SMC3K22CAHM3/9A (1)	0.257	9A	3500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

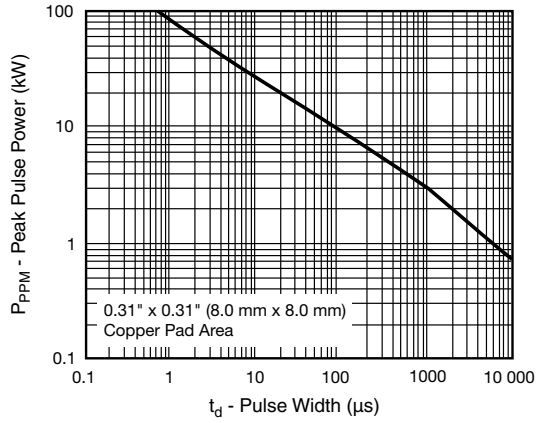


Fig. 1 - Peak Pulse Power Derating Curve

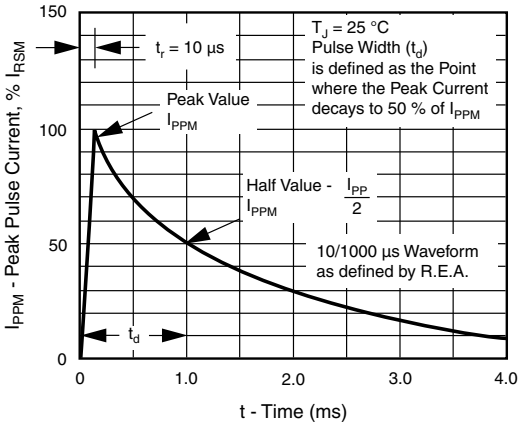


Fig. 3 - Pulse Waveform

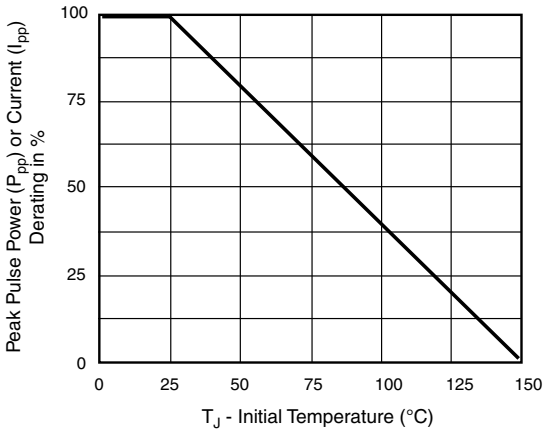


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

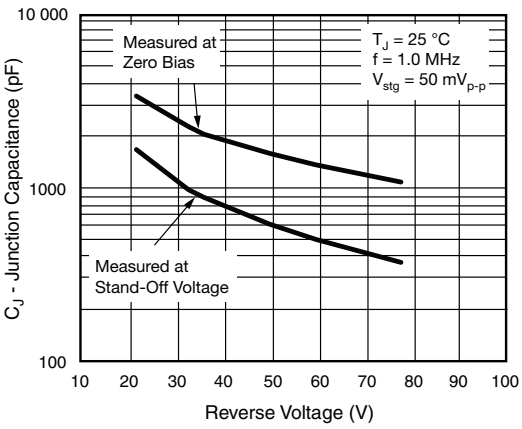


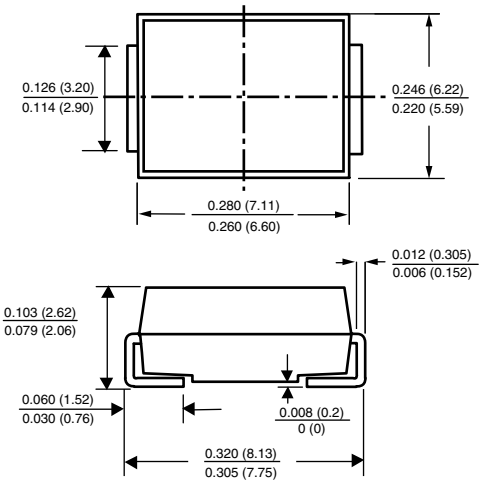
Fig. 4 - Typical Junction Capacitance

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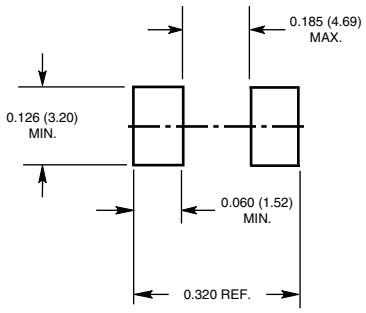
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



Mounting Pad Layout



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