



E480232

Features

- Fully Automotive Qualified to AEC-Q101
- For Surface Mount Applications
- Excellent Clamping Capability
- High Temp Soldering: 260°C / 10 Seconds at Terminals
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, $\pm 30\text{kV(Air)}, \pm 30\text{kV (Contact)}$

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000 μs Waveform (Note 3)	I_{PPM}	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	P_{PPM}	1500	W
Power Dissipation on Infinite Heat Sink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
Peak Forward Surge Current Unidirectional Only (Note 4)	I_{FSM}	200	A

Note:

- Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
- Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig.4.
- 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.

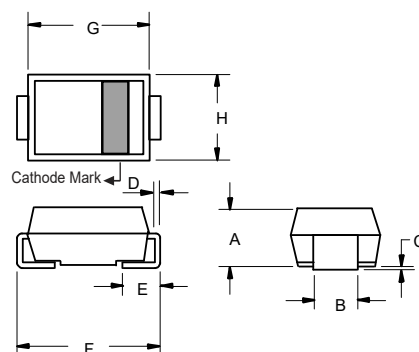
Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

1500Watt TVS
5.0 to 190
Volts

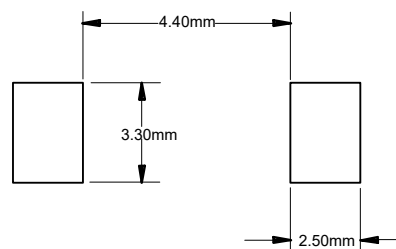
SMC (DO-214AB)
(LEAD FRAME)



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.103	2.00	2.62	
B	0.108	0.128	2.75	3.25	
C	0.002	0.008	0.051	0.203	
D	0.006	0.012	0.152	0.305	
E	0.030	0.060	0.76	1.52	
F	0.305	0.320	7.75	8.13	
G	0.260	0.280	6.60	7.11	
H	0.220	0.245	5.59	6.22	

Suggested Solder Pad Layout



Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	°C/W
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	13	°C/W

Note:

5. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal.

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage V_{BR} @ I_T			Maximum Clamping Voltage @ I_{PP}	Maximum Reverse Surge Current	Maximum Reverse Leakage @ V_{RWM}	Device Marking Code	
(Uni)	(Bi)	$V_{RWM}(V)$	Min (V)	Max (V)	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	Uni	Bi
SMCJ5.0AQ	SMCJ5.0CAQ	5.0	6.40	7.07	10	9.2	163.0	1000	GDE	BDE
SMCJ6.0AQ	SMCJ6.0CAQ	6.0	6.67	7.37	10	10.3	145.6	1000	GDG	BDG
SMCJ6.5AQ	SMCJ6.5CAQ	6.5	7.22	7.98	10	11.2	133.9	500	GDK	BDK
SMCJ7.0AQ	SMCJ7.0CAQ	7.0	7.78	8.60	10	12.0	125.0	200	GDM	BDM
SMCJ7.5AQ	SMCJ7.5CAQ	7.5	8.33	9.21	1	12.9	116.3	100	GDP	BDP
SMCJ8.0AQ	SMCJ8.0CAQ	8.0	8.89	9.83	1	13.6	110.3	50	GDR	BDR
SMCJ8.5AQ	SMCJ8.5CAQ	8.5	9.44	10.40	1	14.4	104.2	20	GDT	BDT
SMCJ9.0AQ	SMCJ9.0CAQ	9.0	10.00	11.10	1	15.4	97.4	10	GDV	BDV
SMCJ10AQ	SMCJ10CAQ	10.0	11.10	12.30	1	17.0	88.2	5	GDX	BDX
SMCJ11AQ	SMCJ11CAQ	11.0	12.20	13.50	1	18.2	82.4	5	GDZ	BDZ
SMCJ12AQ	SMCJ12CAQ	12.0	13.30	14.70	1	19.9	75.4	5	GEE	BEE
SMCJ13AQ	SMCJ13CAQ	13.0	14.40	15.90	1	21.5	69.8	1	GEG	BEG
SMCJ14AQ	SMCJ14CAQ	14.0	15.60	17.20	1	23.2	64.7	1	GEK	BEK
SMCJ15AQ	SMCJ15CAQ	15.0	16.70	18.50	1	24.4	61.5	1	GEM	BEM
SMCJ16AQ	SMCJ16CAQ	16.0	17.80	19.70	1	26.0	57.7	1	GEP	BEP
SMCJ17AQ	SMCJ17CAQ	17.0	18.90	20.90	1	27.6	54.4	1	GER	BER
SMCJ18AQ	SMCJ18CAQ	18.0	20.00	22.10	1	29.2	51.4	1	GET	BET
SMCJ19AQ	SMCJ19CAQ	19.0	21.10	23.30	1	30.8	48.7	1	GEU	BEU
SMCJ20AQ	SMCJ20CAQ	20.0	22.20	24.50	1	32.4	46.3	1	GEV	BEV
SMCJ22AQ	SMCJ22CAQ	22.0	24.40	26.90	1	35.5	42.3	1	GEX	BEX
SMCJ24AQ	SMCJ24CAQ	24.0	26.70	29.50	1	38.9	38.6	1	GEZ	BEZ
SMCJ26AQ	SMCJ26CAQ	26.0	28.90	31.90	1	42.1	35.6	1	GFE	BFE
SMCJ28AQ	SMCJ28CAQ	28.0	31.10	34.40	1	45.4	33.0	1	GFG	BFG
SMCJ30AQ	SMCJ30CAQ	30.0	33.30	36.80	1	48.4	31.0	1	GFK	BFK
SMCJ33AQ	SMCJ33CAQ	33.0	36.70	40.60	1	53.3	28.1	1	GFM	BFM
SMCJ36AQ	SMCJ36CAQ	36.0	40.00	44.20	1	58.1	25.8	1	GFP	BFP
SMCJ40AQ	SMCJ40CAQ	40.0	44.40	49.10	1	64.5	23.3	1	GFR	BFR
SMCJ43AQ	SMCJ43CAQ	43.0	47.80	52.80	1	69.4	21.6	1	GFT	BFT
SMCJ45AQ	SMCJ45CAQ	45.0	50.00	55.30	1	72.7	20.6	1	GFV	BFV
SMCJ48AQ	SMCJ48CAQ	48.0	53.30	58.90	1	77.4	19.4	1	GFX	BFX
SMCJ51AQ	SMCJ51CAQ	51.0	56.70	62.70	1	82.4	18.2	1	GFZ	BFZ
SMCJ54AQ	SMCJ54CAQ	54.0	60.00	66.30	1	87.1	17.2	1	GGE	BGE
SMCJ58AQ	SMCJ58CAQ	58.0	64.40	71.20	1	93.6	16.0	1	GGG	BGG
SMCJ60AQ	SMCJ60CAQ	60.0	66.70	73.70	1	96.8	15.5	1	GGK	BGK
SMCJ64AQ	SMCJ64CAQ	64.0	71.10	78.60	1	103.0	14.6	1	GGM	BGM
SMCJ70AQ	SMCJ70CAQ	70.0	77.80	86.00	1	113.0	13.3	1	GGP	BGP
SMCJ75AQ	SMCJ75CAQ	75.0	83.30	92.10	1	121.0	12.4	1	GGR	BGR
SMCJ78AQ	SMCJ78CAQ	78.0	86.70	95.80	1	126.0	11.9	1	GGT	BGT
SMCJ80AQ	SMCJ80CAQ	80.0	88.80	97.60	1	129.6	11.6	1	GGU	BGU
SMCJ85AQ	SMCJ85CAQ	85.0	94.40	104.00	1	137.0	10.9	1	GGV	BGV
SMCJ90AQ	SMCJ90CAQ	90.0	100.00	111.00	1	146.0	10.3	1	GGX	BGX
SMCJ100AQ	SMCJ100CAQ	100.0	111.00	123.00	1	162.0	9.3	1	GGZ	BGZ
SMCJ110AQ	SMCJ110CAQ	110.0	122.00	135.00	1	177.0	8.5	1	GHE	BHE
SMCJ120AQ	SMCJ120CAQ	120.0	133.00	147.00	1	193.0	7.8	1	GHG	BHG
SMCJ130AQ	SMCJ130CAQ	130.0	144.00	159.00	1	209.0	7.2	1	GHK	BHK
SMCJ140AQ	SMCJ140CAQ	140.0	155.00	171.00	1	226.8	6.6	1	GHL	BHL
SMCJ150AQ	SMCJ150CAQ	150.0	167.00	185.00	1	243.0	6.2	1	GHM	BHM
SMCJ160AQ	SMCJ160CAQ	160.0	178.00	197.00	1	259.0	5.8	1	GHP	BHP
SMCJ170AQ	SMCJ170CAQ	170.0	189.00	209.00	1	275.0	5.5	1	GHR	BHR
SMCJ180AQ	SMCJ180CAQ	180.0	200.00	220.00	1	291.6	5.1	1	GHT	BHT
SMCJ190AQ	SMCJ190CAQ	190.0	211.00	232.00	1	307.8	4.9	1	GHX	BHX

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

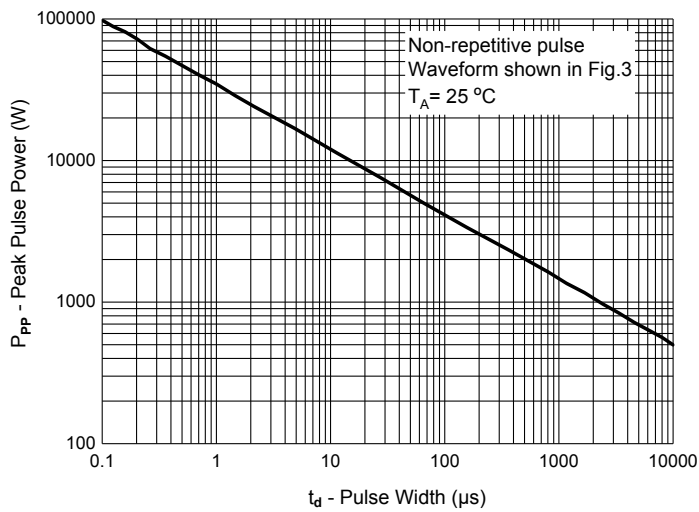


Fig. 2 - Typical Junction Capacitance

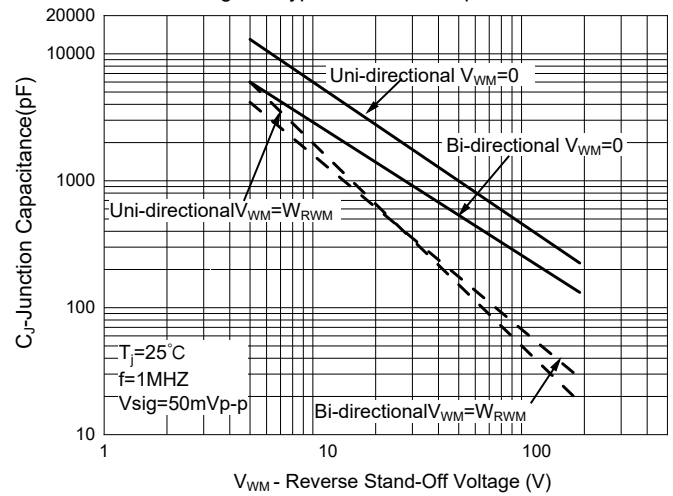


Fig. 3 - Pulse Waveform

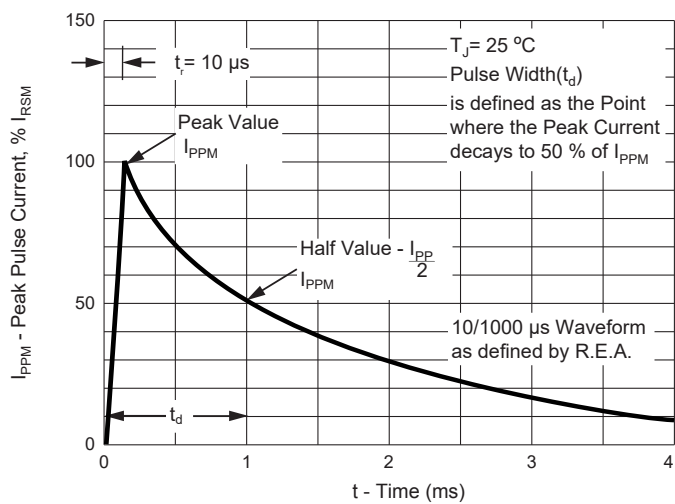
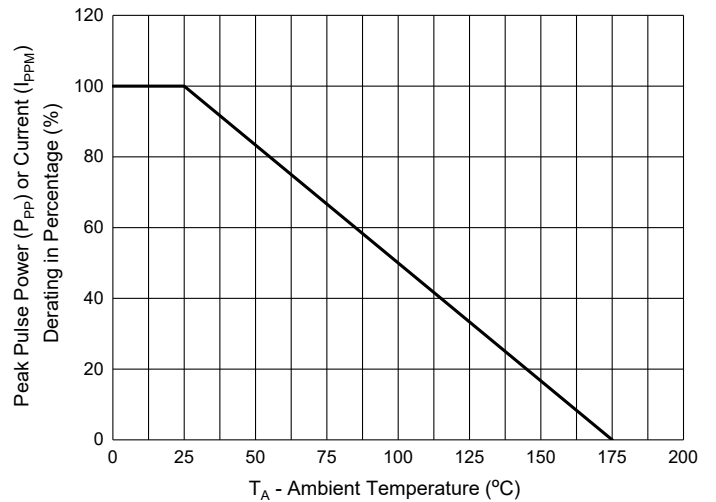


Fig. 4 - Pulse Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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