



**E480232**

## Features

For Surface Mount Applications  
 Excellent Clamping Capability  
 High Temp Soldering: 260°C / 10 Seconds At Terminals  
 Halogen Free. "Green" Device <sup>(Note 1)</sup>  
 Moisture Sensitivity Level 1  
 Epoxy Meets UL 94 V-0 Flammability Rating  
 Lead Free Finish/RoHS Compliant <sup>(Note 2)</sup> ("P" Suffix Designates  
 RoHS Compliant. See Ordering Information)  
 ESD protection of data lines in accordance with IEC 61000-4-2,  
 30kV(Air), 30kV (Contact)

**5000 Watt TVS  
 5.0 to 85  
 Volts**

## Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000μs Waveform <sup>(Note 3)</sup>	$I_{PPM}$	See Next Table	A
Peak Pulse Power Dissipation <sup>(Note 3)</sup>	$P_{PPM}$	5000	W
Power Dissipation on infinite heat sink at $T_L = 75^\circ$	$P_D$	6.5	W
Peak Forward Surge Current Unidirectional Only <sup>(Note 4)</sup>	$I_{FSM}$	300	A

### Note:

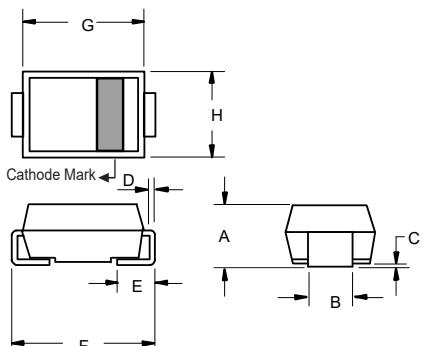
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ$  C per Fig.4.
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		

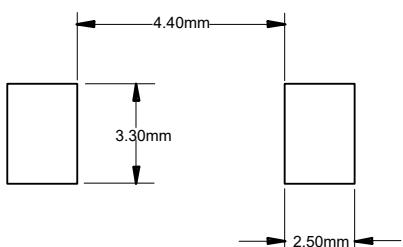
XXXX = Marking code   YYWW = Date Code

## SMC (DO-214AB) (LEAD FRAME)



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	MCC Part Number	Reverse Stand-Off Voltage	Breakdown Voltage VBR(V)		Test Current	Max. Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage Current@V RWM	Marking Code	
Uni-directional	Bi-directional	$V_{RWM}(V)$	Min (V)	Max (V)	$I_T$ (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	Uni	Bi
5.0SMLJ5.0AL	5.0SMLJ5.0CAL	5.0	6.40	7.00	10	9.2	543.6	1000	5PDE	5BDE
5.0SMLJ6.0AL	5.0SMLJ6.0CAL	6.0	6.67	7.37	10	10.3	485.5	1000	5PDG	5BDG
5.0SMLJ6.5AL	5.0SMLJ6.5CAL	6.5	7.22	7.98	10	11.2	446.5	800	5PDK	5BDK
5.0SMLJ7.0AL	5.0SMLJ7.0CAL	7.0	7.78	8.60	10	12.0	416.8	800	5PDP	5BDB
5.0SMLJ7.5AL	5.0SMLJ7.5CAL	7.5	8.33	9.21	5	12.9	387.7	800	5PDR	5BDR
5.0SMLJ8.0AL	5.0SMLJ8.0CAL	8.0	8.89	9.83	5	13.6	367.7	800	5PDT	5BDT
5.0SMLJ8.5AL	5.0SMLJ8.5CAL	8.5	9.44	10.40	5	14.4	347.3	800	5PDV	5BDV
5.0SMLJ9.0AL	5.0SMLJ9.0CAL	9.0	10.00	11.10	5	15.4	324.8	800	5PDX	5BDX
5.0SMLJ10AL	5.0SMLJ10CAL	10.0	11.	12.30	1	17.0	294.1	5	5SAE	5DAE
5.0SMLJ11AL	5.0SMLJ11CAL	11.0	12.20	13.50	1	18.2	275.0	2	5SAF	5DAF
5.0SMLJ12AL	5.0SMLJ12CAL	12.0	13.30	14.70	1	19.9	252.0	2	5SAG	5DAG
5.0SMLJ13AL	5.0SMLJ13CAL	13.0	14.40	15.90	1	21.5	233.0	2	5SAK	5DAK
5.0SMLJ14AL	5.0SMLJ14CAL	14.0	15.60	17.20	1	23.2	216.0	2	5SAM	5DAM
5.0SMLJ15AL	5.0SMLJ15CAL	15.0	16.70	18.50	1	24.4	205.0	2	5SAP	5DAP
5.0SMLJ16AL	5.0SMLJ16CAL	16.0	17.80	19.70	1	26.0	193.0	2	5SAR	5DAR
5.0SMLJ17AL	5.0SMLJ17CAL	17.0	18.90	20.90	1	27.6	181.0	2	5SAT	5DAT
5.0SMLJ18AL	5.0SMLJ18CAL	18.0	20.00	22.10	1	29.2	172.0	2	5SAV	5DAV
5.0SMLJ19AL	5.0SMLJ19CAL	19.0	21.10	23.30	1	30.8	162.4	2	5SAX	5DAX
5.0SMLJ20AL	5.0SMLJ20CAL	20.0	22.20	24.50	1	32.4	155.0	2	5SAZ	5DAZ
5.0SMLJ22AL	5.0SMLJ22CAL	22.0	24.40	26.90	1	35.5	141.0	2	5SBE	5DBE
5.0SMLJ24AL	5.0SMLJ24CAL	24.0	26.70	29.50	1	38.9	129.0	2	5SBF	5DBF
5.0SMLJ26AL	5.0SMLJ26CAL	26.0	28.90	31.90	1	42.1	119.0	2	5SBG	5DBG
5.0SMLJ28AL	5.0SMLJ28CAL	28.0	31.10	34.40	1	45.4	110.0	2	5SBK	5DBK
5.0SMLJ30AL	5.0SMLJ30CAL	30.0	33.30	36.80	1	48.4	103.0	2	5SBM	5DBM
5.0SMLJ33AL	5.0SMLJ33CAL	33.0	36.70	40.60	1	53.3	93.9	2	5SBP	5DBP
5.0SMLJ36AL	5.0SMLJ36CAL	36.0	40.00	44.20	1	58.1	86.1	2	5SBR	5DBR
5.0SMLJ40AL	5.0SMLJ40CAL	40.0	44.40	49.10	1	64.5	77.6	2	5SBT	5DBT
5.0SMLJ43AL	5.0SMLJ43CAL	43.0	47.80	52.80	1	69.4	72.1	2	5SBV	5DBV
5.0SMLJ45AL	5.0SMLJ45CAL	45.0	50.00	55.30	1	72.7	68.8	2	5SBX	5DBX
5.0SMLJ48AL	5.0SMLJ48CAL	48.0	53.30	58.90	1	77.4	64.7	2	5SBZ	5DBZ
5.0SMLJ51AL	5.0SMLJ51CAL	51.0	56.70	62.70	1	82.4	60.7	2	5SCF	5DCF
5.0SMLJ54AL	5.0SMLJ54CAL	54.0	60.00	66.30	1	87.1	57.5	2	5SCG	5DCG
5.0SMLJ58AL	5.0SMLJ58CAL	58.0	64.40	71.20	1	93.6	53.5	2	5PGK	5BGK
5.0SMLJ60AL	5.0SMLJ60CAL	60.0	66.70	73.70	1	96.8	51.7	2	5PGM	5BGM
5.0SMLJ64AL	5.0SMLJ64CAL	64.0	71.10	78.60	1	103.0	48.5	2	5PGP	5BGP
5.0SMLJ70AL	5.0SMLJ70CAL	70.0	77.80	86.00	1	113.0	44.2	2	5PGT	5BGT
5.0SMLJ75AL	5.0SMLJ75CAL	75.0	83.30	92.10	1	121.0	41.3	2	5PGU	5BGU
5.0SMLJ78AL	5.0SMLJ78CAL	78.0	86.70	95.80	1	126.0	39.7	2	5PGV	5BGV
5.0SMLJ80AL	5.0SMLJ80CAL	80.0	88.90	97.60	1	129.6	38.6	2		
5.0SMLJ85AL	5.0SMLJ85CAL	85.0	94.40	104.00	1	137.0	36.5	2		

Note:

4. Add suffix 'C' after part number to specify Bi-directional devices
5. For Bi-Directional devices having  $V_R$  of 10 volts, the  $I_R$  limit is double

## Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

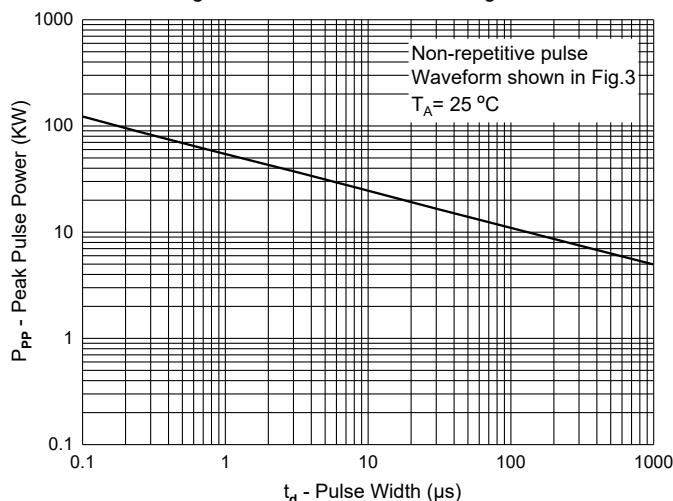


Fig. 2 - Typical Junction Capacitance

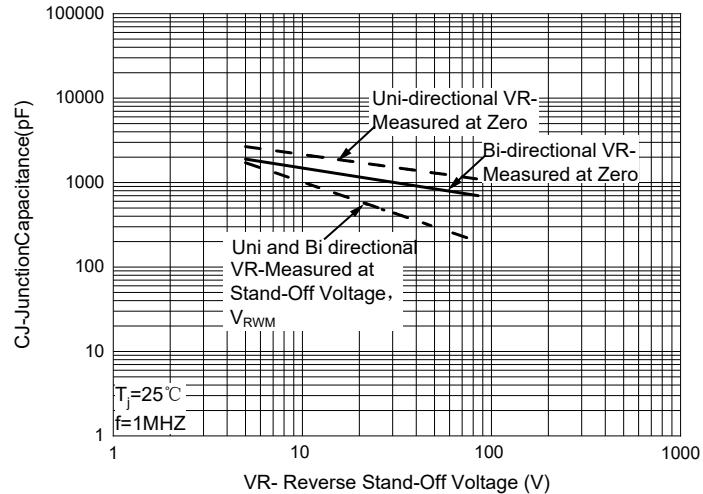


Fig. 3 - Pulse Waveform

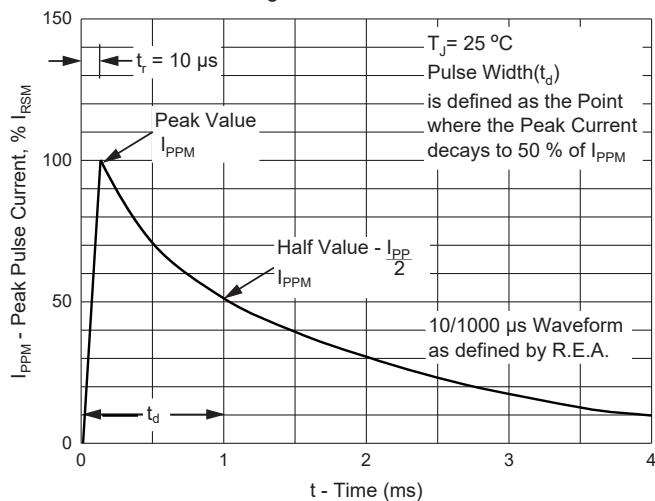
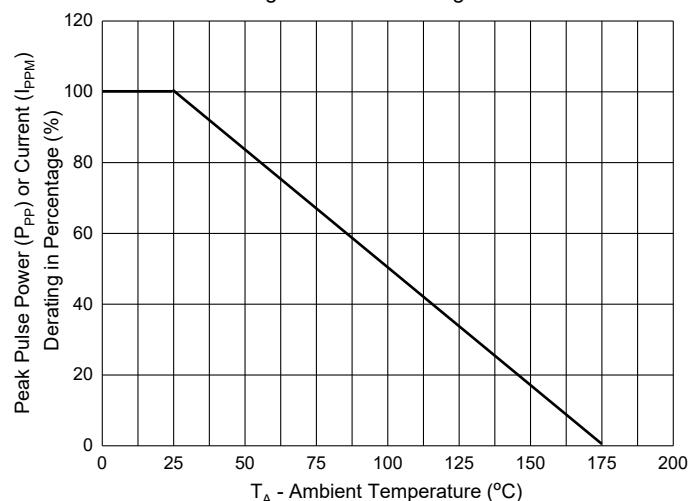


Fig. 4 - Pulse Derating Curve



## Ordering Information

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

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