

## 5.0SMCJ SERIES

### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 5000 Watt

**STAND-OFF VOLTAGE**

**20 to 250 Volt**

**SMC / DO-214AB**

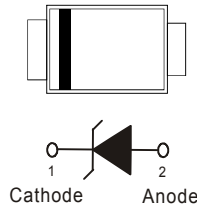
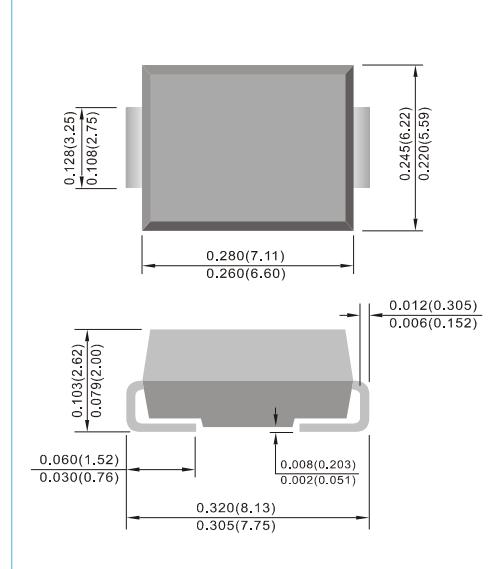
Unit : inch(mm)

#### FEATURES

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- ESD IEC-61000-4-2 Air  $\pm 30$ kV, Contact  $\pm 30$ kV
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### MECHANICAL DATA

- Case: JEDEC DO-214AB,Molded plastic over passivated junction.
- Terminals: Solder plated,solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard Packaging: 16mm tape (EIA-481)
- Weight: 0.0082 ounce, 0.232 gram



#### MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.  
For Capacitive load derate current by 20%.

Rating	Symbol	Value	Units
Peak Power Dissipation (tp=10/1000μs waveform) (Notes 1)	$P_{PP}$	5000	Watts
Peak Pulse Current on (tp=10/1000μs waveform) (Notes 1)	$I_{PPM}$	See table	Amps
Typical Thermal Resistance Junction to Air (Notes 2)	$R_{\theta JA}$	110	°C / W
ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact)	$V_{ESD}$	$\pm 30$ $\pm 30$	kV
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	300	Amps
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

#### NOTES :

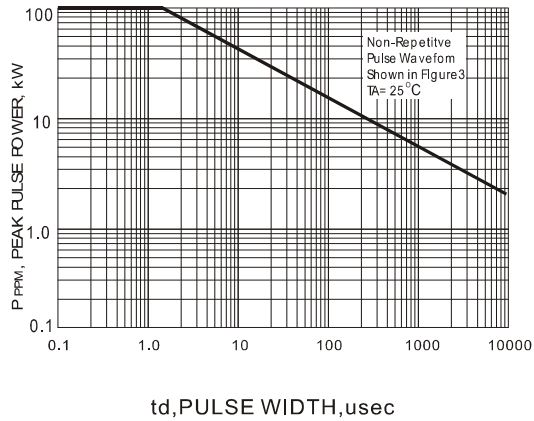
- 1.Non-repetitive current pulse.
- 2.Mounted on a FR4 PCB, single-sided copper, mini pad.
- 3.A transient suppressor is selected according to the working peak reverse voltage ( $V_{RWM}$ ), which should be equal to or greater than the DC or continuous peak operating voltage level.



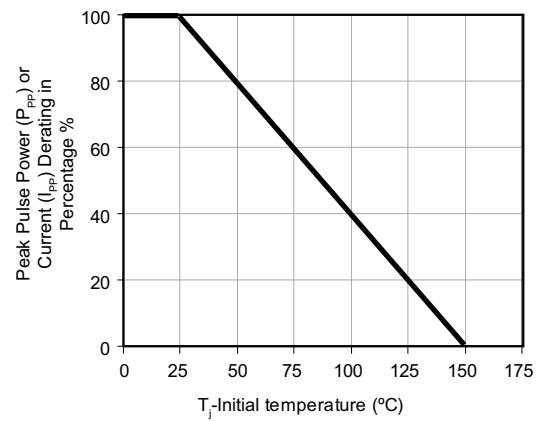
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Part Number	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max.Clamp Voltage 10/1000µs	Peak Pulse Current 10/1000µs	Marking Code
	V <sub>RWM</sub> (Notes 3)	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub>	I <sub>R</sub> @ V <sub>RWM</sub>	V <sub>C</sub> @ I <sub>PP</sub>	I <sub>PP</sub>	
		Min.	Max.					
	V	V	V	mA	µA	V	A	
5.0SMCJ20A	20	22.2	25.5	1	3	32.4	155	5HEV
5.0SMCJ22A	22	24.4	28	1	3	35.5	141	5HEX
5.0SMCJ24A	24	26.7	30.7	1	3	38.9	129	5HEZ
5.0SMCJ26A	26	28.9	33.2	1	3	42.1	119	5HFE
5.0SMCJ28A	28	31.1	35.8	1	3	45.4	110	5HFG
5.0SMCJ30A	30	33.3	38.3	1	3	48.4	103	5HFK
5.0SMCJ33A	33	36.7	42.2	1	3	53.3	93.9	5HFM
5.0SMCJ36A	36	40	46	1	3	58.1	86.1	5HFP
5.0SMCJ40A	40	44.4	51.1	1	3	64.5	77.6	5HFR
5.0SMCJ43A	43	47.8	54.9	1	3	69.4	72.1	5HFT
5.0SMCJ45A	45	50	57.5	1	3	72.7	68.8	5HFV
5.0SMCJ48A	48	53.3	61.3	1	3	77.4	64.7	5HFX
5.0SMCJ51A	51	56.7	65.2	1	3	82.4	60.7	5HFZ
5.0SMCJ54A	54	60	69	1	3	87.1	57.5	5HGE
5.0SMCJ58A	58	64.4	74.1	1	3	93.6	53.5	5HGG
5.0SMCJ60A	60	66.7	76.7	1	3	96.8	51.7	5HGK
5.0SMCJ64A	64	71.1	81.8	1	3	103	48.6	5HGM
5.0SMCJ70A	70	77.8	89.5	1	3	113	44.3	5HGP
5.0SMCJ75A	75	83.3	95.8	1	3	121	41.4	5HGR
5.0SMCJ78A	78	86.7	99.7	1	3	126	39.7	5HGT
5.0SMCJ85A	85	94.4	108.2	1	3	137	36.5	5HGV
5.0SMCJ90A	90	100	115.5	1	3	146	34.3	5HGX
5.0SMCJ100A	100	111	128	1	3	162	30.9	5HGZ
5.0SMCJ110A	110	122	135	1	3	177	28.8	5HHE
5.0SMCJ120A	120	133	147	1	3	193	26.4	5HHG
5.0SMCJ130A	130	144	159	1	3	209	24.4	5HHK
5.0SMCJ150A	150	167	185	1	3	243	21	5HHM
5.0SMCJ160A	160	178	197	1	3	259	19.7	5HHP
5.0SMCJ170A	170	189	209	1	3	275	18.5	5HHR
5.0SMCJ180A	180	200	221	1	3	292	17.5	5HHT
5.0SMCJ190A	190	211	233	1	3	310	16.5	5HHV
5.0SMCJ200A	200	222	246	1	3	329.2	15.5	5HHX
5.0SMCJ210A	210	233	258	1	3	349.5	14.6	5HHZ
5.0SMCJ220A	220	244	270	1	3	371.1	13.7	5HIE
5.0SMCJ250A	250	277	306	1	3	400	12.5	5HIG

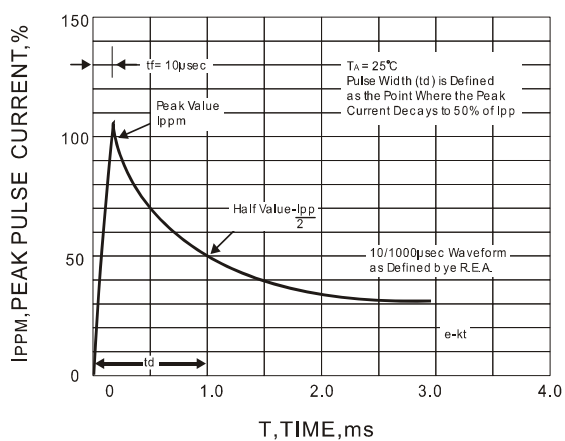
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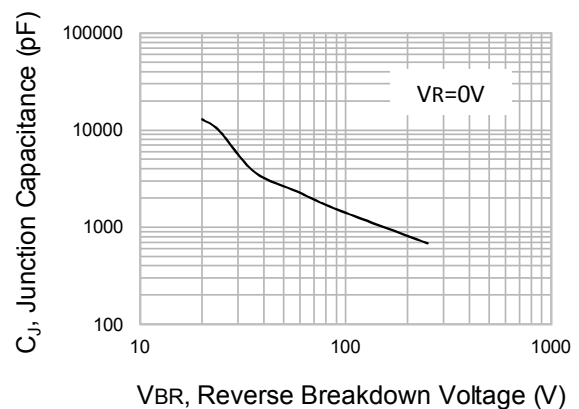
**Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE**



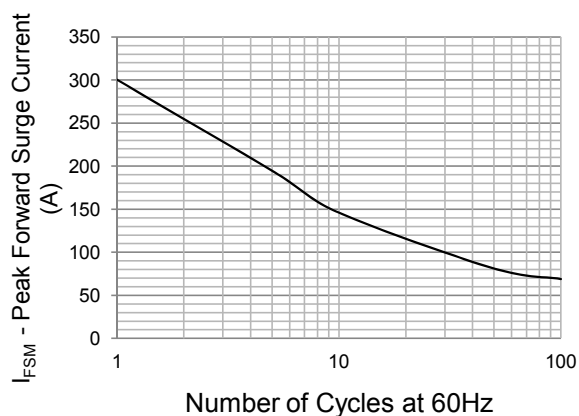
**Fig.2 PEAK PULSE POWER OR CURRENT DERATING CURVE**



**Fig.3 PULSE WAVEFORM**



**Fig.4 TYPICAL JUNCTION CAPACITANCE**



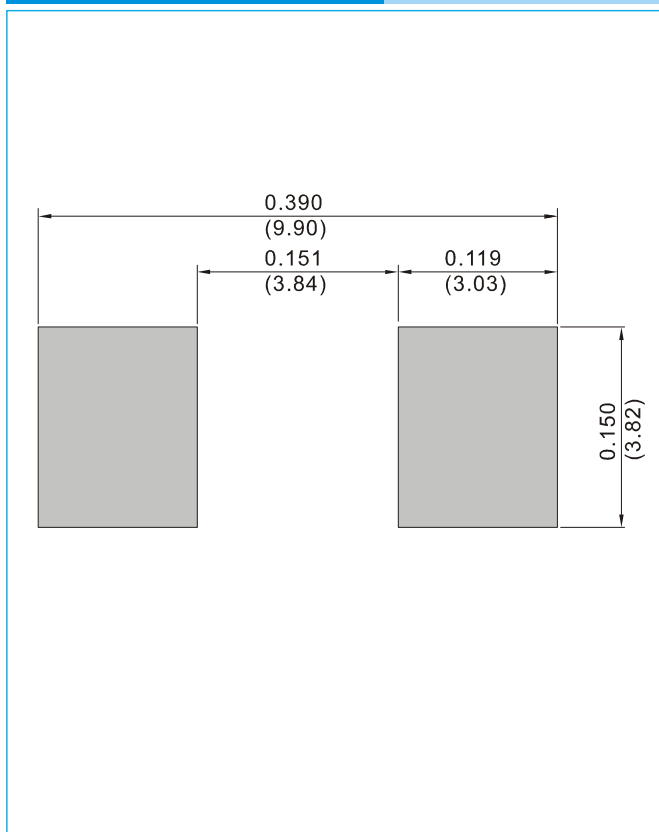
**Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

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### MOUNTING PAD LAYOUT

**SMC / DO-214AB**

Unit : inch(mm)



### ORDER INFORMATION

- Packing information
  - T/R - 3K per 13" plastic Reel
  - T/R - 0.8K per 7" plastic Reel

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### Part No\_packing code\_Version

5.0SMCJ20A\_R1\_00001

5.0SMCJ20A\_R2\_00001

For example :

RB500V-40\_R2\_00001

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code XX				Version Code XXXXX		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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