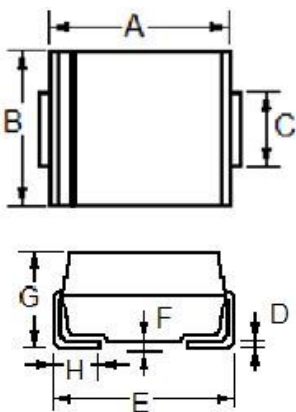


# SMCJ5.0 -- SMCJ220CA

## 1500W Surface Mount TVS Diode

### Features

- \* Working peak reverse voltage range – 5.0V to 440V.
- \* Peak power dissipation 1500W @10 x 1000 us Pulse
- \* Low profile package.
- \* Excellent clamping capability.
- \* Glass passivated junction.
- \* Fast response time: typically less than 1 ns for Uni-direction.
- \* Less than 5 ns for Bi-direction, from 0 Volts to BV min
- \* Typical IR less than 1uA above 10V
- \* Plastic material has UL flammability classification 94V-O
- \* Terminal: Solder plated, solderable per MIL-STD-750
- \* RoHS, Reach Compliant



DO-214AB (SMC)

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	6.600	7.110	0.260	0.280
B	5.590	6.220	0.220	0.245
C	2.900	3.200	0.114	0.126
D	0.125	0.305	0.006	0.012
E	7.750	8.130	0.305	0.320
F	-	0.203	-	0.008
G	2.060	2.620	0.079	0.103
H	0.760	1.520	0.030	0.060

Polarity: by cathode band denotes uni-directional device  
None cathode band denotes bi-directional device.

### Maximum Ratings And Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P <sub>PPM</sub>	Min 1500	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I <sub>PPM</sub>	See Table 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method) (Note 2. 3)	I <sub>FSM</sub>	200	Amps
Operating Junction Temperature Range	T <sub>J</sub>	-55 to 150	°C
Operating & Storage Temperature Range	T <sub>STG</sub>	-55 to 150	°C

#### Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2.
2. Mounted on 5.0mm<sup>2</sup> (0.03mm thick) Copper Pads to each terminal.
3. 8.3 ms single half sine-wave, or equivalent square wave, Duty cycle=4 pluses per minute maximum.

# SMCJ5.0 -- SMCJ220CA

## 1500W Surface Mount TVS Diode

### Electrical Specification @ Tamb 25°C

Part Number	Part Number	Device Marking Code		Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (µA)
		UNI	BI		MIN	MAX				
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5	6.40	7.07	10	9.6	163.0	500
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6	6.67	7.37	10	10.3	145.6	500
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	133.9	300
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.40	1	14.4	104.2	30
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9	10.00	11.10	1	15.4	97.4	30
SMCJ10A	SMCJ10CA	GDX	BDX	10	11.10	12.30	1	17.0	88.2	5
SMCJ11A	SMCJ11CA	GDZ	BDZ	11	12.20	13.50	1	18.2	82.4	1
SMCJ12A	SMCJ12CA	GEE	BEE	12	13.30	14.70	1	19.9	75.4	1
SMCJ13A	SMCJ13CA	GEG	BEG	13	14.40	15.90	1	21.5	69.8	1
SMCJ14A	SMCJ14CA	GEK	BEK	14	15.60	17.20	1	23.2	64.7	1
SMCJ15A	SMCJ15CA	GEM	BEM	15	16.70	18.50	1	24.4	61.5	1
SMCJ16A	SMCJ16CA	GEP	BEP	16	17.80	19.70	1	26.0	57.7	1
SMCJ17A	SMCJ17CA	GER	BER	17	18.90	20.90	1	27.6	54.3	1
SMCJ18A	SMCJ18CA	GET	BET	18	20.00	22.10	1	29.2	51.4	1
SMCJ20A	SMCJ20CA	GEV	BEV	20	22.20	24.50	1	32.4	46.3	1
SMCJ22A	SMCJ22CA	GEX	BEX	22	24.40	26.90	1	35.5	42.3	1
SMCJ24A	SMCJ24CA	GEZ	BEZ	24	26.70	29.50	1	38.9	38.6	1
SMCJ26A	SMCJ26CA	GFE	BFE	26	28.90	31.90	1	42.1	35.6	1
SMCJ28A	SMCJ28CA	GFG	BFG	28	31.10	34.40	1	45.4	33.0	1
SMCJ30A	SMCJ30CA	GFK	BFK	30	33.30	36.80	1	48.4	31.0	1
SMCJ33A	SMCJ33CA	GFM	BFM	33	36.70	40.60	1	53.3	28.1	1
SMCJ36A	SMCJ36CA	GFP	BFP	36	40.00	44.20	1	58.1	25.8	1
SMCJ40A	SMCJ40CA	GFR	BFR	40	44.40	49.10	1	64.5	23.3	1
SMCJ43A	SMCJ43CA	GFT	BFT	43	47.80	52.80	1	69.4	21.6	1
SMCJ45A	SMCJ45CA	GFV	BFV	45	50.00	55.30	1	72.7	20.6	1
SMCJ48A	SMCJ48CA	GJT	BJT	48	53.30	58.90	1	77.4	19.4	1
SMCJ51A	SMCJ51CA	GJV	BJV	51	56.70	62.70	1	82.4	18.2	1
SMCJ54A	SMCJ54CA	GFX	BFX	54	60.00	66.30	1	87.1	17.2	1
SMCJ58A	SMCJ58CA	GFZ	BFZ	58	64.40	71.20	1	93.6	16.0	1
SMCJ60A	SMCJ60CA	GGE	BGE	60	66.70	73.70	1	96.8	15.5	1
SMCJ64A	SMCJ64CA	GGG	BGG	64	71.10	78.60	1	103.0	14.6	1
SMCJ70A	SMCJ70CA	GGK	BGK	70	77.80	86.00	1	113.0	13.3	1
SMCJ75A	SMCJ75CA	GGM	BGM	75	83.30	92.10	1	121.0	12.4	1

## SMCJ5.0 -- SMCJ220CA 1500W Surface Mount TVS Diode

Part Number	Part Number	Device Marking Code		Reverse Stand off Voltage VR (Volts)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (µA)
		UNI	BI		MIN	MAX				
SMCJ78A	SMCJ78CA	GGP	BGP	78	86.70	95.80	1	126.0	11.9	1
SMCJ85A	SMCJ85CA	GGR	BGR	85	94.40	104.00	1	137.0	10.9	1
SMCJ90A	SMCJ90CA	GGT	BGT	90	100.0	111.00	1	146.0	10.3	1
SMCJ100A	SMCJ100CA	GGV	BGV	100	111.0	123.00	1	162.0	9.3	1
SMCJ110A	SMCJ110CA	GGX	BGX	110	122.0	135.00	1	177.0	8.5	1
SMCJ120A	SMCJ120CA	GGZ	BGZ	120	133.0	147.00	1	193.0	7.8	1
SMCJ130A	SMCJ130CA	GHE	BHE	130	144.0	159.00	1	209.0	7.2	1
SMCJ150A	SMCJ150CA	GHG	BHG	150	167.0	185.00	1	243.0	6.2	1
SMCJ160A	SMCJ160CA	GHK	BHK	160	178.0	197.00	1	259.0	5.8	1
SMCJ170A	SMCJ170CA	GHM	BHM	170	189.0	209.00	1	275.0	5.5	1
SMCJ180A	SMCJ180CA	GHP	BHP	180	201.0	222.00	1	292.0	5.2	1
SMCJ190A	SMCJ190CA	GHR	BHR	190	211.0	233.00	1	306.0	4.9	1
SMCJ200A	SMCJ200CA	GHX	BHX	200	224.0	247.00	1	324.0	4.7	1
SMCJ210A	SMCJ210CA	GHZ	BHZ	210	233.0	258.00	1	324.0	4.4	1
SMCJ220A	SMCJ220CA	GJE	BJE	220	246.0	272.00	1	356.0	4.2	1

※For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

1. A transient suppressor is normally selected according to the working peak reverse voltage (VRWM), which should be equal to or greater than the DC or continuous peak operating voltage level.
2. VBR measured at pulse test current IT at an ambient temperature of 25°C.
3. Surge current waveform per Figure 1 and derate per Figure 3.

# SMCJ5.0 -- SMCJ220CA

## 1500W Surface Mount TVS Diode

### Typical Characteristics

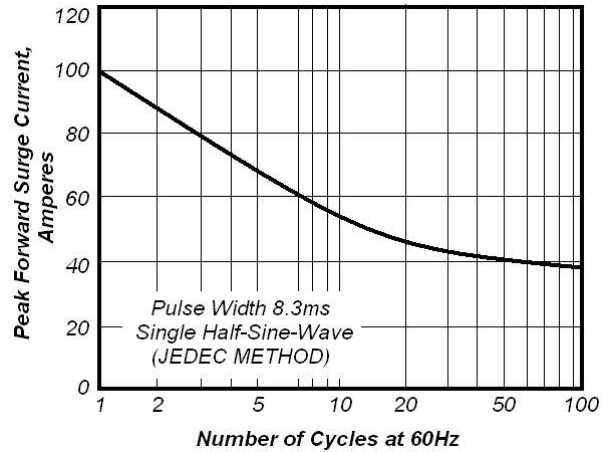
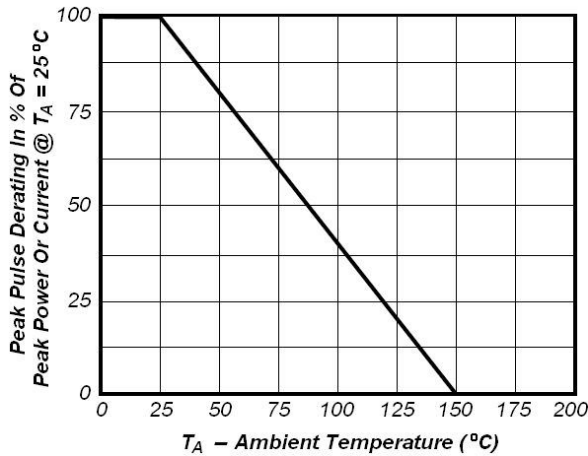


Fig1. Pulse Dearting Curve

Fig2. Maximum Non-Repetitive Peak

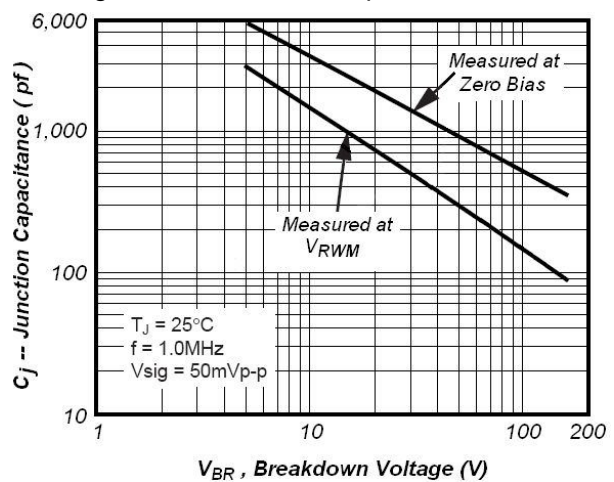
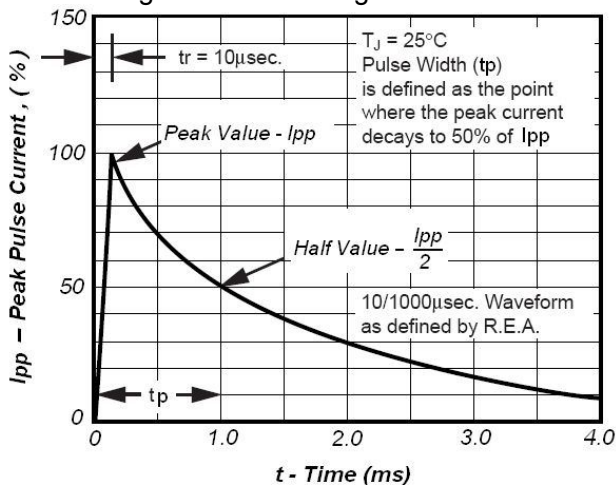


Fig3. Pulse Waveform

Fig4. Typical Junction Capacitance

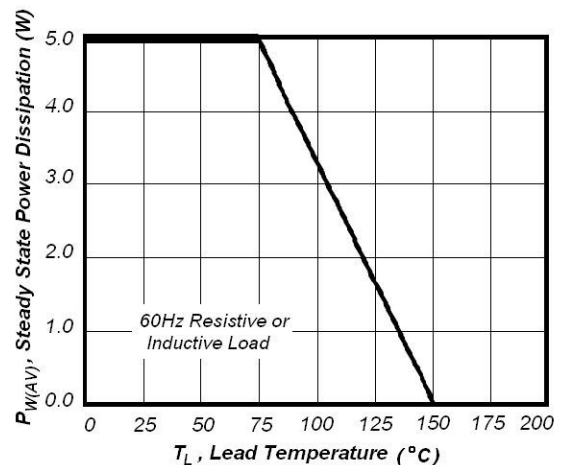
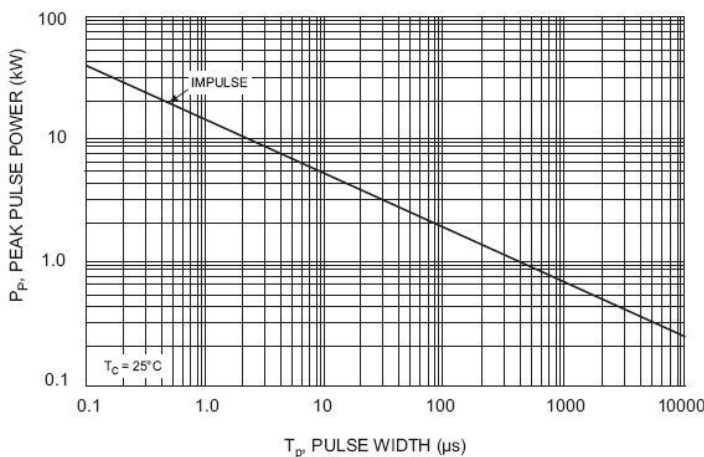


Fig5. Peak Pulse Power Rating curve

Fig6. Steady State Power Derating Curv