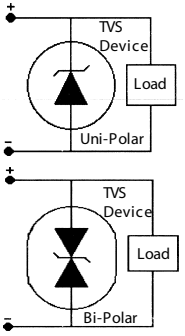
Semiconductor

Data Sheet

5.0Vto220VSMDTRANSIENT VOLTAGESUPPRESSORS

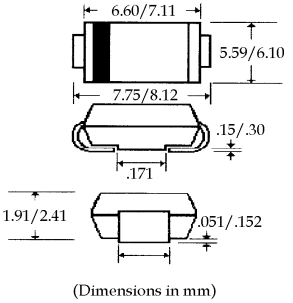
3.0SMCJ5.0...220

Description



Mechanical Dimensions

DO-214AB
(SMC)



(Dimensions in mm)

Features

- n 1500 WATT PEAK POWER PROTECTION
- n EXCELLENT CLAMPING CAPABILITY
- n FAST RESPONSE TIME
- n TYPICAL I_R < 1µA ABOVE 10V
- n GLASS PASSIVATED CHIP CONSTRUCTION
- n MEETS UL SPECIFICATION 94V-0

	3.0SMCJ5.0..220	Units
Maximum Ratings		
Peak Power Dissipation...P_{PK} 10/1000ms WAVEFORM (NOTE 1,2, FIG1)	3000 Min.	Watts
Peak Pulse Current.....Ippm 10/1000ms waveform (note 1, fig. 3)	see table 1	Watts
Non-Repetitive Peak Forward Surge Current...I_{FSM} @ Rated Load Conditions, 8.3 ms, ½ Sine Wave, Single Phase (Note: 2 3)	200	Amps
Weight...G_{RM}	0.20	Grams
Soldering Requirements (Time & Temp)...S_T @ 250°C	11 Sec.	Min. to Solder
Operating & Storage Temperature Range...T_J, T_{STRG}	-65 to 175	°C

NOTES: 1. For Bi-Directional Applications, Use C or CA. Electrical Characteristics Apply in Both Directions.
2. Mounted on 8mm Copper Pads to Each Terminal.
3. 8.3 ms, ½ Sine Wave, Single Phase Duty Cycle, @ 4 Pulses Per Minute Maximum.
4. V_{BR} Measured After It Applies for 300 µs. I_T = Square Wave Pulse or Equivalent.
5. Non-Repetitive Current Pulse. Per Fig. 3 and Derated Above T_A = 25°C per Fig. 2.

Fig. 1 Peak Pluse Power vs. Time

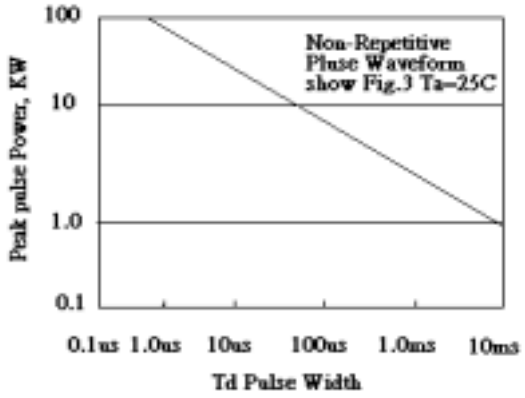


Fig. 2 Derating Curve

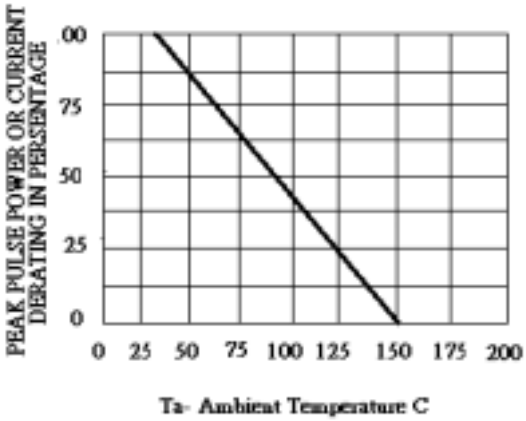


Fig.3 Pulse Waveform

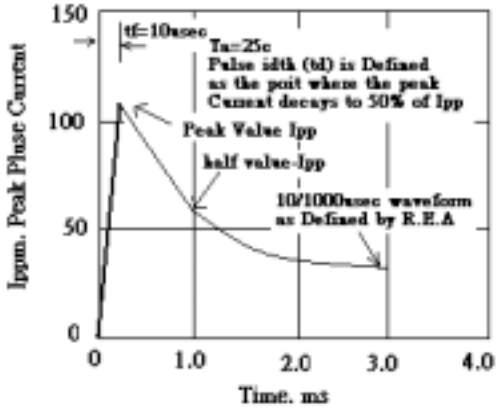


Fig. 4 typical Capacitance vs. stand-off voltage

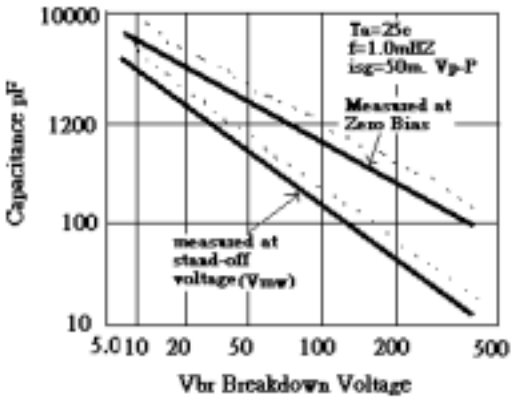
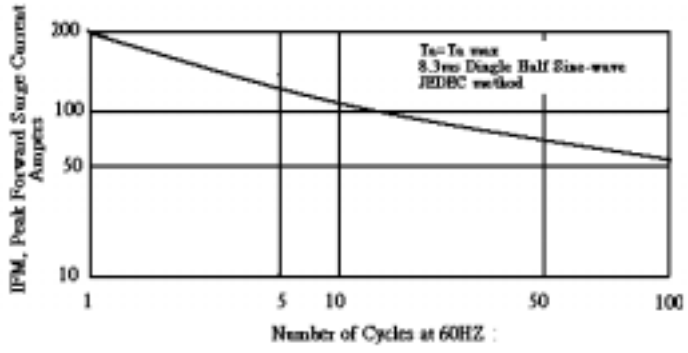


Fig.5 Maximum non- Repetitive peak Forward Surge Current



Ratings at 25 Deg.C ambient temperature Unless otherwise specified

single Phase Half Wave ,60HZ resistive or inductive Load

for Capacitive Load, derate current by 20%

3000W FCI Part Number#	BREAKDOWN VOLTAGE		@	WORKING PEAK REVERSE VOLTAGE	Max. Reverse Leakage @VRWM IR	Peak Pulse Current @IPP	MAX REVERSE VOLTAGE@IRSM CLAMING Vc	CASE Marking
	Min.(V)	Max(V)	Ir(Ma)					
3.0SMCJ5.0	6.4	7.55	10.00	5.0	1000.00	312.50	9.6	HDD
3.0SMCJ5.0A	6.4	7.25	10.00	5.0	1000.00	328.00	9.2	HDE
3.0SMCJ6.0	6.67	8.45	10.00	6.0	1000.00	263.00	11.4	HDF
3.0SMCJ6.0A	6.67	7.67	10.00	6.0	1000.00	291.00	10.3	HDG
3.0SMCJ6.5	7.22	9.14	10.00	6.5	500.00	243.90	12.3	HDH
3.0SMCJ6.5A	7.22	8.3	10.00	6.5	500.00	267.90	11.2	HDK
3.0SMCJ7.0	7.78	9.86	10.00	7.0	200.00	225.60	13.3	HDL
3.0SMCJ7.0A	7.78	8.95	10.00	7.0	200.00	250.00	12.0	HDM
3.0SMCJ7.5	8.33	10.67	1.00	7.5	100.00	209.80	14.3	HDN
3.0SMCJ7.5A	8.33	9.58	1.00	7.5	100.00	232.60	12.9	HDP
3.0SMCJ8.0	8.89	1130	1.00	8.0	50.00	200.00	15.0	HDQ
3.0SMCJ8.0A	8.89	10.2	1.00	8.0	50.00	220.60	13.6	HDR
3.0SMCJ8.5	9.44	11.9	1.00	8.5	25.00	188.80	15.9	HDS
3.0SMCJ8.5A	9.44	10.8	1.00	8.5	25.00	208.40	14.4	HDT
3.0SMCJ9.0	10	12.6	1.00	9.0	10.00	177.40	16.9	HDU
3.0SMCJ9.0A	10	11.5	1.00	9.0	10.00	194.80	15.4	HDV
3.0SMCJ10	11.1	11.5	1.00	10.0	5.00	159.60	18.8	HDW
3.0SMCJ10A	11.1	13.5	1.00	10.0	5.00	176.50	17.0	HDX
3.0SMCJ11	12.2	15.4	1.00	11.0	5.00	149.20	20.1	HDY
3.0SMCJ11A	12.2	14	1.00	11.0	5.00	164.80	18.2	HDZ
3.0SMCJ12	13.3	16.9	1.00	12.0	5.00	136.40	22.0	HED
3.0SMCJ12A	13.3	15.3	1.00	12.0	5.00	150.80	19.9	HEE
3.0SMCJ13	14.4	18.2	1.00	13.0	5.00	126.00	23.8	HEF
3.0SMCJ13A	14.4	16.5	1.00	13.0	5.00	139.50	21.5	HEG
3.0SMCJ14	15.6	19.8	1.00	14.0	5.00	116.20	25.8	HEH
3.0SMCJ14A	15.6	17.9	1.00	14.0	5.00	129.40	23.2	HEK
3.0SMCJ15	16.7	21.1	1.00	15.0	5.00	111.60	26.9	HEL
3.0SMCJ15A	16.7	19.2	1.00	15.0	5.00	123.00	24.4	HEM
3.0SMCJ16	17.8	22.6	1.00	16.0	5.00	104.20	28.8	HEN
3.0SMCJ16A	17.8	20.5	1.00	16.0	5.00	115.40	26.0	HEP
3.0SMCJ17	18.9	23.9	1.00	17.0	5.00	98.40	30.5	HEQ
3.0SMCJ17A	18.9	21.7	1.00	17.0	5.00	106.60	27.6	HER
3.0SMCJ18	20	25.3	1.00	18.0	5.00	93.20	32.2	HES
3.0SMCJ18A	20	25.3	1.00	18.0	5.00	102.80	29.2	HET
3.0SMCJ20	22.2	28.1	1.00	20.0	5.00	83.80	35.8	HEU
3.0SMCJ20A	22.2	25.5	1.00	20.0	5.00	92.60	32.4	HEV
3.0SMCJ22	24.4	30.9	1.00	22.0	5.00	76.20	39.4	HEW

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	Min.(V)	Max(V)	Ir(Ma)					
3.0SMCJ22A	24.4	28	1.00	22.0	5.00	84.50	35.5	HEX
3.0SMCJ24	26.7	33.8	1.00	24.0	5.00	69.80	43.0	HEY
3.0SMCJ24A	26.7	30.7	1.00	24.0	5.00	77.20	38.9	HEZ
3.0SMCJ26	28.9	36.6	1.00	26.0	5.00	64.40	46.6	HFD
3.0SMCJ26A	28.9	33.2	1.00	26.0	5.00	71.20	42.2	HFE
3.0SMCJ28	31.1	39.4	1.00	28.0	5.00	60.00	50.1	HFF
3.0SMCJ28A	31.1	35.8	1.00	28.0	5.00	66.00	45.5	HFG
3.0SMCJ30	33.3	42.2	1.00	30.0	5.00	56.00	53.6	HFH
3.0SMCJ30A	33.3	38.3	1.00	30.0	5.00	62.00	48.4	HFK
3.0SMCJ33	36.7	46.5	1.00	33.0	5.00	50.40	59.6	HFL
3.0SMCJ33A	36.7	42.2	1.00	33.0	5.00	56.30	53.3	HFM
3.0SMCJ36	40	50.7	1.00	36.0	5.00	46.60	64.4	HFN
3.0SMCJ36A	40	46	1.00	36.0	5.00	51.60	58.2	HFP
3.0SMCJ40	44.4	56.3	1.00	40.0	5.00	42.00	71.4	HFQ
3.0SMCJ40A	44.4	51.1	1.00	40.0	5.00	46.40	64.7	HFR
3.0SMCJ43	47.8	60.5	1.00	43.0	5.00	39.20	76.6	HFS
3.0SMCJ43A	47.8	54.9	1.00	43.0	5.00	43.20	69.4	HFT
3.0SMCJ45	50	63.3	1.00	45.0	5.00	37.40	80.3	HFU
3.0SMCJ45A	50	57.5	1.00	45.0	5.00	41.20	72.8	HFV
3.0SMCJ48	53.3	67.5	1.00	48.0	5.00	35.00	85.8	HFW
3.0SMCJ48A	53.3	61.3	1.00	48.0	5.00	38.80	77.4	HFX
3.0SMCJ51	56.7	71.8	1.00	51.0	5.00	33.00	91.1	HFY
3.0SMCJ51A	56.7	65.2	1.00	51.0	5.00	36.40	82.4	HFZ
3.0SMCJ54	60	76	1.00	54.0	5.00	31.20	96.3	HGD
3.0SMCJ54A	60	69	1.00	54.0	5.00	34.40	87.2	HG E
3.0SMCJ58	64.4	81.6	1.00	58.0	5.00	29.00	103.5	HGF
3.0SMCJ58A	64.4	74.1	1.00	58.0	5.00	32.00	93.8	HGG
3.0SMCJ60	66.7	84.5	1.00	60.0	5.00	28.00	107.2	HGH
3.0SMCJ60A	66.7	76.7	1.00	60.0	5.00	31.00	96.8	HGK
3.0SMCJ64	71.1	90.1	1.00	64.0	5.00	26.40	114.0	HGL
3.0SMCJ64A	71.1	81.8	1.00	64.0	5.00	29.20	103.0	HGM
3.0SMCJ70	77.8	98.6	1.00	70.0	5.00	24.00	125.0	HGN
3.0SMCJ70A	77.8	89.5	1.00	70.0	5.00	26.60	113.0	HGP
3.0SMCJ75	83.3	105.7	1.00	75.0	5.00	22.40	134.0	HGQ
3.0SMCJ75A	83.3	95.8	1.00	75.0	5.00	24.80	121.0	HGR
3.0SMCJ78	86.7	109.9	1.00	78.0	5.00	21.60	139.0	HGS
3.0SMCJ78A	86.7	99.7	1.00	78.0	5.00	22.80	131.5	HGT
3.0SMCJ85	94.4	119.2	1.00	85.0	5.00	19.80	151.6	HGU
3.0SMCJ85A	94.4	108.2	1.00	85.0	5.00	20.80	144.5	HGV

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	Min.(V)	Max(V)	Ir(Ma)					
3.0SMCJ90	100	126.5	1.00	90.0	5.00	18.80	159.6	HGW
3.0SMCJ90A	100	115.5	1.00	90.0	5.00	20.60	146.0	HGX
3.0SMCJ100	111	141	1.00	100.0	5.00	16.60	180.8	HGY
3.0SMCJ100A	111	128	1.00	100.0	5.00	18.60	162.0	HGZ
3.0SMCJ110	122	154.5	1.00	110.0	5.00	15.40	196.0	HHD
3.0SMCJ110A	122	140.5	1.00	110.0	5.00	16.80	178.5	HHE
3.0SMCJ120	133	169	1.00	120.0	5.00	14.00	215.0	HHF
3.0SMCJ120A	133	153	1.00	120.0	5.00	15.60	193.0	HHG
3.0SMCJ130	144	182.5	1.00	150.0	5.00	13.00	231.0	HHH
3.0SMCJ130A	144	165.5	1.00	150.0	5.00	14.40	209.0	HHK
3.0SMCJ150	166	211.5	1.00	160.0	5.00	11.20	268.0	HHL
3.0SMCJ150A	166	192.5	1.00	160.0	5.00	12.40	243.0	HHM
3.0SMCJ160	178	226	1.00	170.0	5.00	10.40	289.0	HHN
3.0SMCJ160A	178	205	1.00	170.0	5.00	11.60	259.0	HHP
3.0SMCJ170	189	239.5	1.00	180.0	5.00	9.80	307.0	HHQ
3.0SMCJ170A	189	217.5	1.00	180.0	5.00	11.00	275.0	HHR
3.0SMCJ180	198	253.8	1.00	180.0	5.00	9.30	322.0	HHS
3.0SMCJ180A	198	230.4	1.00	180.0	5.00	10.30	292.0	HHT
3.0SMCJ190	209	267.9	1.00	190.0	5.00	8.80	340.0	HHU
3.0SMCJ190A	209	243.2	1.00	190.0	5.00	9.70	308.0	HHV
3.0SMCJ200	220	282	1.00	200.0	5.00	8.40	358.0	HHW
3.0SMCJ200A	220	256	1.00	200.0	5.00	9.30	324.0	HHX
3.0SMCJ210	231	296.1	1.00	210.0	5.00	7.80	376.0	HHY
3.0SMCJ210A	231	268.8	1.00	210.0	5.00	8.80	340.0	HHZ
3.0SMCJ220	242	310.2	1.00	220.0	5.00	7.60	394.0	HKD
3.0SMCJ220A	242	281.6	1.00	220.0	5.00	8.40	356.0	HKE

1. Suffix C denotes Bi-directional device, Suffix A denotes 5% tolerance device no Suffix denotes 10% tolerance device
2. BV measured with IT Current pulse=300us
3. CASE Marking Bi-Directional prefix change H with I