

SMCJ Seires
1500 W Surface Mount Transient Voltage Suppressors

Revision:B

General Description

The SMCJ series from SINO-IC are designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, fast response time and cost-effectiveness.

Applications

- Communication Systems
- Power Supplies
- Medical Equipment
- Business Machines

Features

- For surface mounted application in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability

Mechanical Data

Case: JESEC DO214AB. Molded plastic over glass passivated junction
 Polarity: Color band denoted positive end (cathode) except Bidirectional

Absolute Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Value	Units
Peak Power Dissipation (Note 1.) @ $T_L = 25^\circ\text{C}$, Pulse Width = 1 ms	P_{PK}	1500	W
Peak pulse current of on 10/1000 μs waveform	I_{PPM}	SEE TABLE 1	A
Peak forward surge Current	I_{PSM}	200	A
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

Notes:

1. 10 X 1000 us, non-repetitive
2. 1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
3. Mounted on 5.0mm²(0.03mm thick) Copper Rads to each terminal
4. A transient suppressor is normally 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.
5. VBR measured at pulse test current I_T at an ambient temperature of 25°C.
6. Surge current waveform per Figure 1 and derate per Figure 3.

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T

Electrical Characteristics Per Line @ 25°C Unless Otherwise Specified								
PART NUMBER		V _{RWM} (V)	V _(BR) @I _T		I _T (mA)	V _C @ I _{PP} (V)	I _{PP} (A)	I _R @ V _{RWM} (μA)
			min (V)	max (V)				
UNI-POLAR	BI-POLAR							
SMCJ5.0A	SMCJ5.0CA	5.0	6.40	7.25	10	9.2	163.0	800
SMCJ6.0A	SMCJ6.0CA	6.0	6.67	7.67	10	10.3	145.6	800
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	11.2	133.9	500
SMCJ7.0A	SMCJ7.0CA	7.0	7.78	8.95	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.58	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	8.0	8.89	10.23	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.82	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	9.0	10.00	11.50	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	10	11.10	12.80	1	17.0	88.3	5
SMCJ11A	SMCJ11CA	11	12.20	14.00	1	18.2	82.5	5
SMCJ12A	SMCJ12CA	12	13.30	15.30	1	19.9	75.3	5
SMCJ13A	SMCJ13CA	13	14.40	16.50	1	21.5	69.7	5
SMCJ14A	SMCJ14CA	14	15.60	17.90	1	23.2	64.7	5
SMCJ15A	SMCJ15CA	15	16.70	18.50	1.0	24.4	61.5	5
SMCJ16A	SMCJ16CA	16	17.80	19.70	1.0	26.0	57.7	5
SMCJ17A	SMCJ17CA	17	18.90	20.90	1.0	27.6	53.3	5
SMCJ18A	SMCJ18CA	18	20.00	22.10	1.0	29.2	51.4	5
SMCJ20A	SMCJ20CA	20	22.20	24.50	1.0	32.4	46.3	5
SMCJ22A	SMCJ22CA	22	24.40	26.90	1.0	35.5	42.2	5
SMCJ24A	SMCJ24CA	24	26.70	29.50	1.0	38.9	38.6	5
SMCJ26A	SMCJ26CA	26	28.90	31.90	1.0	42.1	35.6	5
SMCJ28A	SMCJ28CA	28	31.10	34.40	1.0	45.4	33.1	5
SMCJ30A	SMCJ30CA	30	33.30	36.80	1.0	48.4	31.0	5
SMCJ33A	SMCJ33CA	33	36.70	40.60	1.0	53.3	28.1	5
SMCJ36A	SMCJ36CA	36	40.00	44.20	1.0	58.1	25.8	5
SMCJ40A	SMCJ40CA	40	44.40	49.10	1.0	64.5	23.2	5
SMCJ43A	SMCJ43CA	43	47.80	52.80	1.0	69.4	21.6	5
SMCJ45A	SMCJ45CA	45	50.00	55.30	1.0	72.7	20.6	5
SMCJ48A	SMCJ48CA	48	53.30	58.90	1.0	77.4	19.4	5
SMCJ51A	SMCJ51CA	51	56.70	62.70	1.0	82.4	18.2	5
SMCJ54A	SMCJ54CA	54	60.00	66.30	1.0	87.1	17.2	5
SMCJ58A	SMCJ58CA	58	64.40	71.20	1.0	93.6	16.0	5
SMCJ60A	SMCJ60CA	60	66.70	73.70	1.0	96.8	15.5	5
SMCJ64A	SMCJ64CA	64	71.10	78.60	1.0	103	14.6	5
SMCJ70A	SMCJ70CA	70	77.80	86.00	1.0	113	13.3	5
SMCJ75A	SMCJ75CA	75	83.30	92.10	1.0	121	12.4	5
SMCJ78A	SMCJ78CA	78	86.70	95.80	1.0	126	11.4	5
SMCJ85A	SMCJ85CA	85	94	104	1.0	137	10.4	5
SMCJ90A	SMCJ90CA	90	100	111	1.0	146	10.3	5
SMCJ100A	SMCJ100CA	100	111	123	1.0	162	9.3	5
SMCJ110A	SMCJ110CA	110	122	135	1.0	177	8.4	5
SMCJ120A	SMCJ120CA	120	133	147	1.0	193	7.9	5

Rating And Characteristic Curves @ 25°C Unless Otherwise Specified

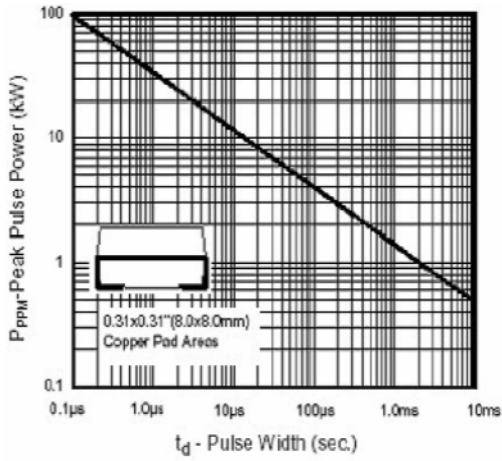


Fig1. Peak Pulse Power Rating

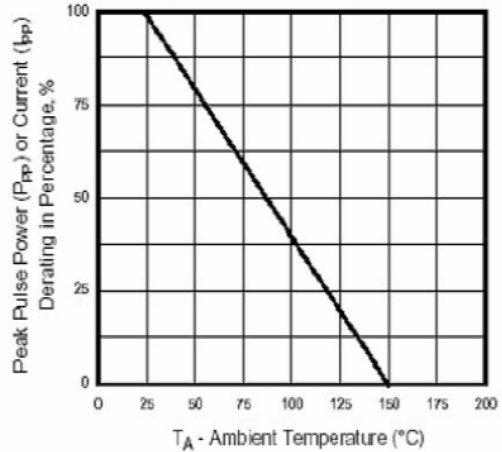


Fig2. Pulse Derating Curve

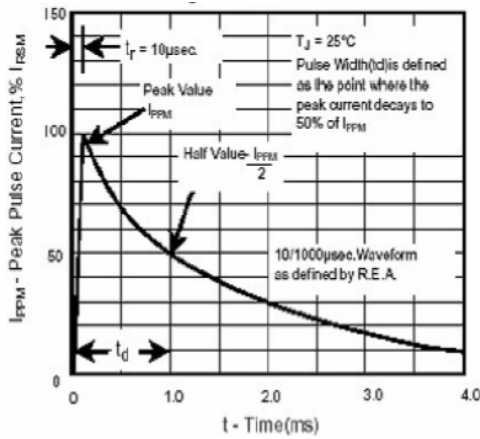


Fig3. Pulse Waveform

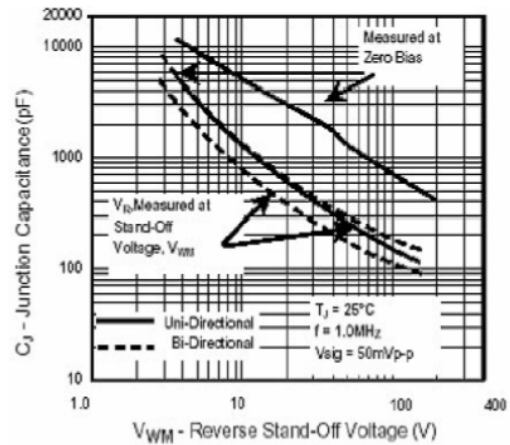


Fig4. Typical Junction

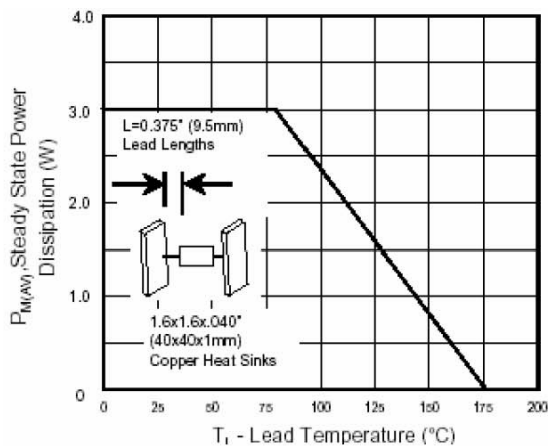


Fig5.- Typ. Transient Thermal Impedance

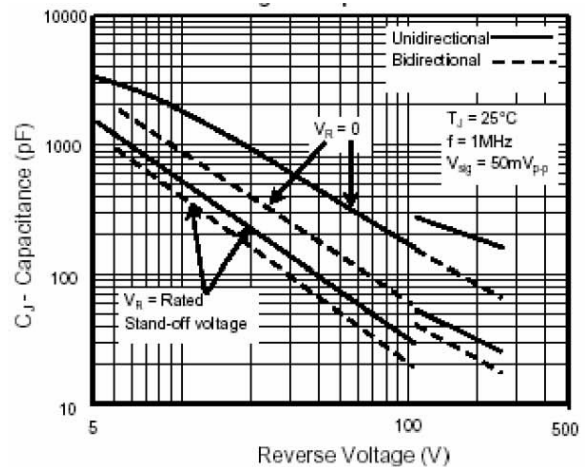
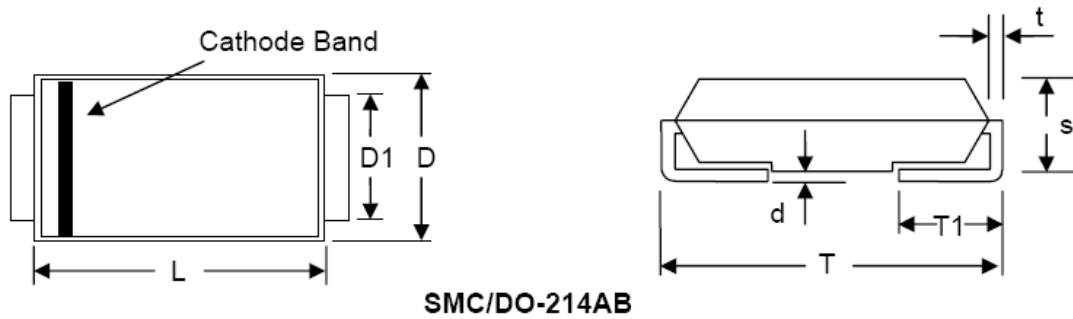


Fig6.- Maximum Non-Repetitive Peak Forward Surge Current

PACKAGE DIMENSIONS (DO-214AB)



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max
L	6.60	7.11	0.260	0.280
D	5.59	6.22	0.220	0.245
D1	2.90	3.20	0.114	0.126
T	7.75	8.13	0.305	0.320
T1	0.76	1.52	0.030	0.060
d	-	0.203	-	0.008
s	2.06	2.62	0.079	0.103
t	0.152	0.305	0.006	0.012

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