



# THE DATASHEET OF SMA2J48A



**200 Watts Surface Mount Transient Voltage Suppressor**  
**VOLTAGE RANGE 5.0 to 250 Volts**

**FEATURES**

- \* 200W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- \* Excellent clamping capability
- \* Low reverse leakage
- \* Very fast response time

**MECHANICAL DATA**

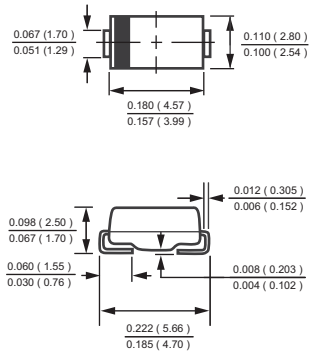
- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Polarity: Color band denotes cathode end except Bipolar

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Resistive or inductive load.



**DO-214AC**



Dimensions in inches and (millimeters)

MAXIMUM RATINGS (@ T =25 °C unless otherwise noted)

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform	P <sub>PK</sub>	200	W
Peak pulse current with a 10/1000 us waveform	I <sub>PP</sub>	See Next Table	A
DC Power dissipation @ Ta = 25 °C	P <sub>D</sub>	385.0	mW
Thermal Resistance, Junction to Ambient	R <sub>QJA</sub>	325	°C/W
Thermal Resistance, Junction to Lead	R <sub>QJL</sub>	26	°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Note1: Mounted with recommended minimum pad size, DC board FR4.

2018-10/61  
REV: 0

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage VBR @ IT		Test Current	Max. Clamping Voltage @ IPP	Max. Peak Pulse Current	Max. Reverse Leakage @ VRWM
UNI-POLAR	BI-POLAR	UNI	BI	VRWM(V)	Min.(V)	Max.(V)	IT(mA)	VC MAX.(V)	IPP(A)	IR(uA)
SMA2J5.0A	SMA2J5.0CA	2J5.0A	2J5.0CA	5.0	6.40	7.07	10	9.2	21.70	500.00
SMA2J6.0A	SMA2J6.0CA	2J6.0A	2J6.0CA	6.0	6.67	7.37	10	10.3	19.40	500.00
SMA2J6.5A	SMA2J6.5CA	2J6.5A	2J6.5CA	6.5	7.22	7.98	10	11.2	17.90	500.00
SMA2J7.0A	SMA2J7.0CA	2J7.0A	2J7.0CA	7.0	7.78	8.60	10	12.0	16.70	200.00
SMA2J7.5A	SMA2J7.5CA	2J7.5A	2J7.5CA	7.5	8.33	9.21	1	12.9	15.50	100.00
SMA2J8.0A	SMA2J8.0CA	2J8.0A	2J8.0CA	8.0	8.89	9.83	1	13.6	14.70	50.00
SMA2J8.5A	SMA2J8.5CA	2J8.5A	2J8.5CA	8.5	9.44	10.40	1	14.4	13.90	20.00
SMA2J9.0A	SMA2J9.0CA	2J9.0A	2J9.0CA	9.0	10.00	11.10	1	15.4	13.00	10.00
SMA2J10A	SMA2J10CA	2J10A	2J10CA	10.0	11.10	12.30	1	17.0	11.80	5.00
SMA2J11A	SMA2J11CA	2J11A	2J11CA	11.0	12.20	13.50	1	18.2	11.00	5.00
SMA2J12A	SMA2J12CA	2J12A	2J12CA	12.0	13.30	14.70	1	19.9	10.10	5.00
SMA2J13A	SMA2J13CA	2J13A	2J13CA	13.0	14.40	15.90	1	21.5	9.30	5.00
SMA2J14A	SMA2J14CA	2J14A	2J14CA	14.0	15.60	17.20	1	23.2	8.62	5.00
SMA2J15A	SMA2J15CA	2J15A	2J15CA	15.0	16.70	18.50	1	24.4	8.20	5.00
SMA2J16A	SMA2J16CA	2J16A	2J16CA	16.0	17.80	19.70	1	26.0	7.69	5.00
SMA2J17A	SMA2J17CA	2J17A	2J17CA	17.0	18.90	20.90	1	27.6	7.25	5.00
SMA2J18A	SMA2J18CA	2J18A	2J18CA	18.0	20.00	22.10	1	29.2	6.86	5.00
SMA2J19A	SMA2J19CA	2J19A	2J19CA	19.0	21.10	23.30	1	30.6	6.54	5.00
SMA2J20A	SMA2J20CA	2J20A	2J20CA	20.0	22.20	24.50	1	32.4	6.17	5.00
SMA2J22A	SMA2J22CA	2J22A	2J22CA	22.0	24.40	26.90	1	35.5	5.63	5.00
SMA2J24A	SMA2J24CA	2J24A	2J24CA	24.0	26.70	29.50	1	38.9	5.14	5.00
SMA2J26A	SMA2J26CA	2J26A	2J26CA	26.0	28.90	31.90	1	42.1	4.75	5.00
SMA2J28A	SMA2J28CA	2J28A	2J28CA	28.0	31.10	34.40	1	45.4	4.41	5.00
SMA2J30A	SMA2J30CA	2J30A	2J30CA	30.0	33.50	36.80	1	48.4	4.13	5.00
SMA2J33A	SMA2J33CA	2J33A	2J33CA	33.0	36.70	40.60	1	53.3	3.75	5.00
SMA2J36A	SMA2J36CA	2J36A	2J36CA	36.0	40.00	44.20	1	58.1	3.44	5.00
SMA2J40A	SMA2J40CA	2J40A	2J40CA	40.0	44.40	49.10	1	64.5	3.10	5.00
SMA2J43A	SMA2J43CA	2J43A	2J43CA	43.0	47.80	52.80	1	69.4	2.88	5.00
SMA2J45A	SMA2J45CA	2J45A	2J45CA	45.0	50.00	55.30	1	72.7	2.75	5.00
SMA2J48A	SMA2J48CA	2J48A	2J48CA	48.0	53.30	58.90	1	77.4	2.58	5.00
SMA2J51A	SMA2J51CA	2J51A	2J51CA	51.0	56.70	62.70	1	82.4	2.43	5.00
SMA2J54A	SMA2J54CA	2J54A	2J54CA	54.0	60.00	66.30	1	87.1	2.30	5.00
SMA2J58A	SMA2J58CA	2J58A	2J58CA	58.0	64.40	71.20	1	93.6	2.14	5.00
SMA2J60A	SMA2J60CA	2J60A	2J60CA	60.0	66.70	73.70	1	96.8	2.07	5.00
SMA2J64A	SMA2J64CA	2J64A	2J64CA	64.0	71.10	78.60	1	103.0	1.94	5.00
SMA2J70A	SMA2J70CA	2J70A	2J70CA	70.0	77.80	86.00	1	113.0	1.77	5.00
SMA2J75A	SMA2J75CA	2J75A	2J75CA	75.0	83.30	92.10	1	121.0	1.65	5.00
SMA2J78A	SMA2J78CA	2J78A	2J78CA	78.0	86.70	95.80	1	126.0	1.59	5.00
SMA2J85A	SMA2J85CA	2J85A	2J85CA	85.0	94.4	104.0	1	137.0	1.46	5.00
SMA2J90A	SMA2J90CA	2J90A	2J90CA	90.0	100.0	111.0	1	146.0	1.37	5.00
SMA2J100A	SMA2J100CA	2J100A	2J100CA	100.0	111.0	123.0	1	162.0	1.23	5.00
SMA2J110A	SMA2J110CA	2J110A	2J110CA	110.0	122.0	135.0	1	177.0	1.13	5.00
SMA2J120A	SMA2J120CA	2J120A	2J120CA	120.0	133.0	147.0	1	193.0	1.04	5.00
SMA2J130A	SMA2J130CA	2J130A	2J130CA	130.0	144.0	159.0	1	209.0	0.96	5.00
SMA2J140A	SMA2J140CA	2J140A	2J140CA	140.0	155.0	171.0	1	224.0	0.89	5.00
SMA2J150A	SMA2J150CA	2J150A	2J150CA	150.0	167.0	185.0	1	243.0	0.82	5.00

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage VBR @ IT		Test Current	Max. Clamping Voltage @ IPP	Max. Peak Pulse Current	Max. Reverse Leakage @ VRWM
UNI-POLAR	BI-POLAR	UNI	BI	VRWM(V)	Min.(V)	Max.(V)	IT(mA)	VC MAX.(V)	IPP(A)	IR(uA)
SMA2J160A	SMA2J160CA	2J160A	2J160CA	160.0	178.0	197.0	1	259.0	0.77	5.00
SMA2J170A	SMA2J170CA	2J170A	2J170CA	170.0	189.0	209.0	1	275.0	0.73	5.00
SMA2J180A	SMA2J180CA	2J180A	2J180CA	180.0	201.0	222.0	1	292.0	0.69	5.00
SMA2J190A	SMA2J190CA	2J190A	2J190CA	190.0	211.0	232.0	1	308.0	0.65	5.00
SMA2J200A	SMA2J200CA	2J200A	2J200CA	200.0	224.0	247.0	1	324.0	0.62	5.00
SMA2J220A	SMA2J220CA	2J220A	2J220CA	220.0	246.0	272.0	1	356.0	0.56	5.00
SMA2J250A	SMA2J250CA	2J250A	2J250CA	250.0	279.0	309.0	1	405.0	0.49	5.00

NOTES: 1.For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

## RATING AND CHARACTERISTICS CURVES (SMA2J SERIES)

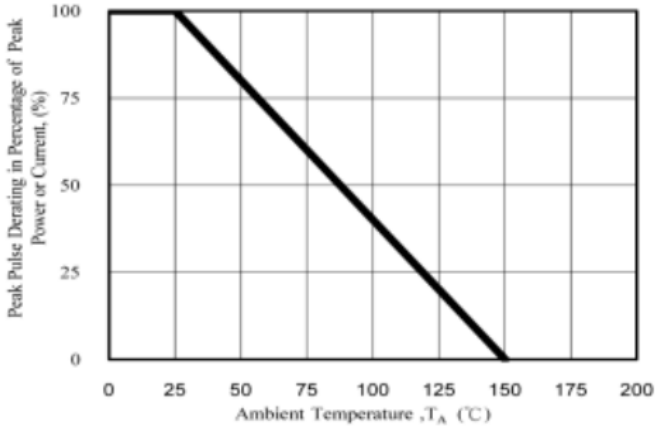


Fig. 1 - Pulse Derating Curve

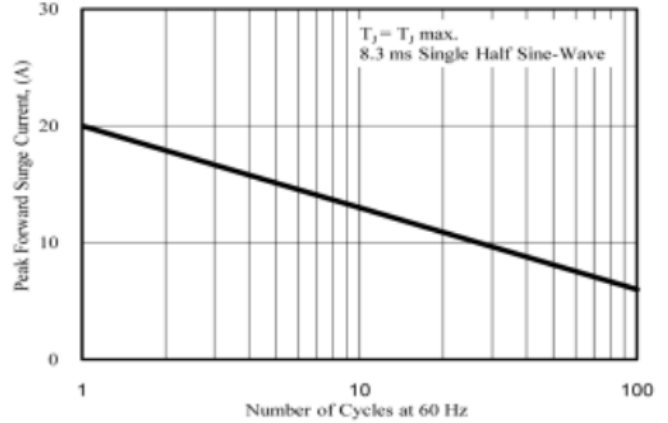


Fig. 2 - Maximum Non-Repetitive Surge Current

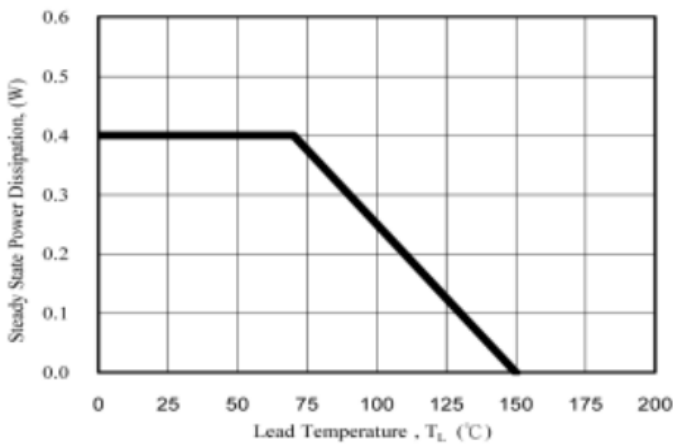


Fig. 3 - Steady State Power Derating Curve

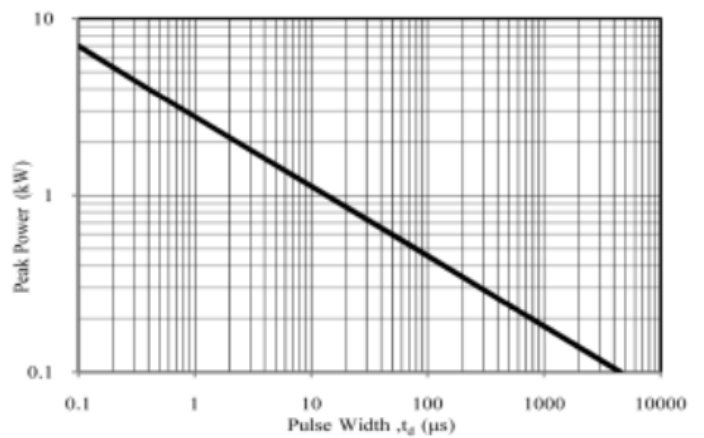


Fig. 4 - Peak Pulse Power Rating Curve

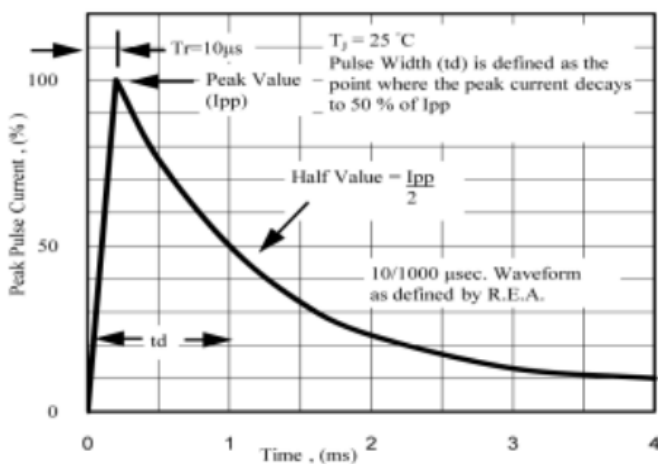


Fig. 5 - Pulse Waveform

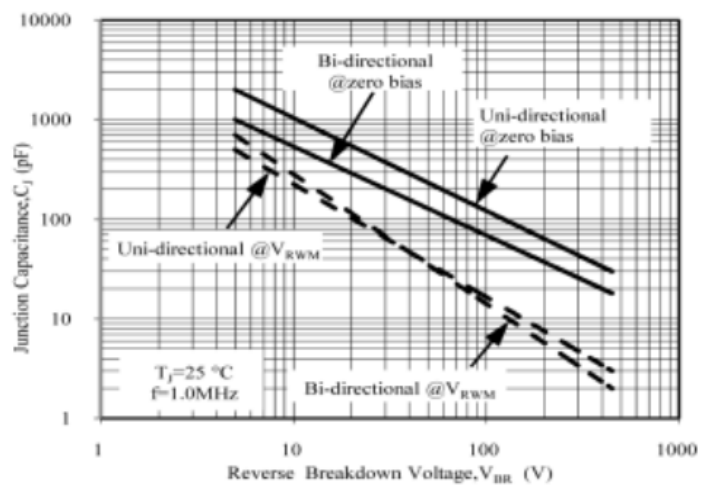


Fig. 6 - Typical Junction Capacitance

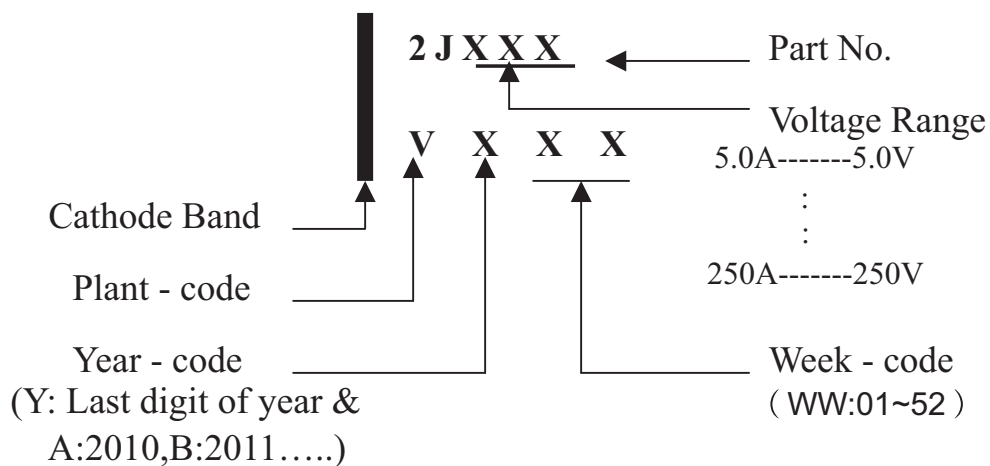
## Attachment information about SMA2J

### 1. Internal Circuit

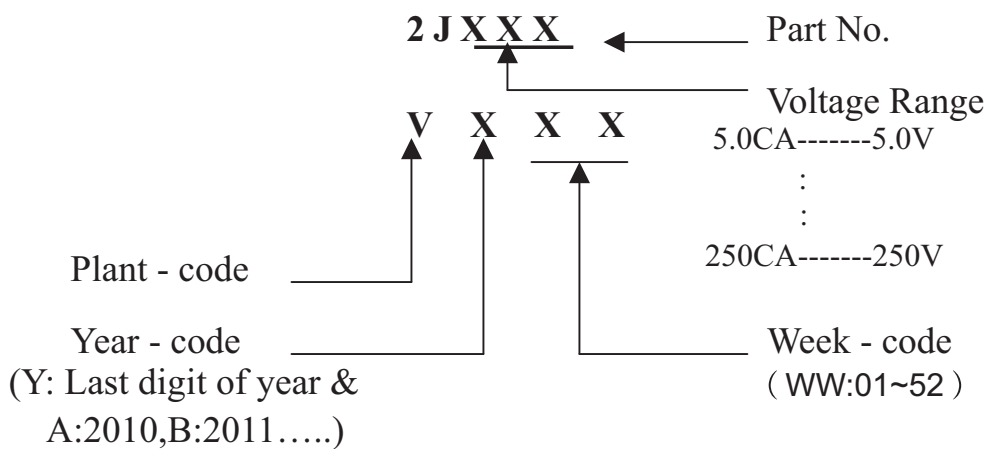


### 2. Marking on the body

#### SMA2JxxA



#### SMA2JxxCA



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMA	-W	7,500	15,000	---	---	330	360*355*360	120,000	15.2

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMA	-T	2,000	8,000	---	---	178	390*205*310	64,000	7.8



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