

400W Transient Voltage Suppressors

TVS Diodes - 400W > SMAJ Series

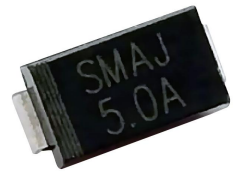


Description

The SMAJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- For surface mounted applications in order to optimize board space
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- Glass passivated junction
- Low inductance
- Agency recognition: 



Package: DO-214AC / SMA

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000μs waveform (Fig.1)(Note 1), (Note 2)	PPPM	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	IFSM	40	A
Operating Junction and Storage Temperature Range	TJ, TSTG	-55 to 150	°C
Typical Thermal Resistance Junction to Lead	RθJL	20	°C/W
Typical Thermal Resistance Junction to Ambient	RθJA	100	°C/W

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.

Electrical Characteristics (TA=25°C)



Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
SMAJ3.3A	----	3.3	5.0	5.8	10	7.6	52.6	100	-	7days
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	800	√	7days
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	800	√	7days
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500	√	7days
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	200	√	7days
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	12.9	31.0	100	√	7days
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1	13.6	29.4	50	√	7days
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.40	1	14.4	27.8	20	√	7days
SMAJ9.0A	SMAJ9.0CA	9.0	10.0	11.10	1	15.4	26.0	10	√	7days
SMAJ10A	SMAJ10CA	10	11.1	12.3	1	17.0	23.5	1	√	7days
SMAJ11A	SMAJ11CA	11	12.2	13.5	1	18.2	22.0	1	√	7days
SMAJ12A	SMAJ12CA	12	13.3	14.7	1	19.9	20.1	1	√	7days
SMAJ13A	SMAJ13CA	13	14.4	15.9	1	21.5	18.6	1	√	7days
SMAJ14A	SMAJ14CA	14	15.6	17.2	1	23.2	17.2	1	√	7days
SMAJ15A	SMAJ15CA	15	16.7	18.5	1	24.4	16.4	1	√	7days
SMAJ16A	SMAJ16CA	16	17.8	19.7	1	26.0	15.4	1	√	7days
SMAJ17A	SMAJ17CA	17	18.9	20.9	1	27.6	14.5	1	√	7days
SMAJ18A	SMAJ18CA	18	20.0	22.1	1	29.2	13.7	1	√	7days
SMAJ20A	SMAJ20CA	20	22.2	24.5	1	32.4	12.3	1	√	7days
SMAJ22A	SMAJ22CA	22	24.4	26.9	1	35.5	11.3	1	√	7days
SMAJ24A	SMAJ24CA	24	26.7	29.5	1	38.9	10.3	1	√	7days
SMAJ26A	SMAJ26CA	26	28.9	31.9	1	42.1	9.5	1	√	7days
SMAJ28A	SMAJ28CA	28	31.1	34.4	1	45.4	8.8	1	√	7days
SMAJ30A	SMAJ30CA	30	33.3	36.8	1	48.4	8.3	1	√	7days
SMAJ33A	SMAJ33CA	33	36.7	40.6	1	53.3	7.5	1	√	7days

Specifications are subject to change without notice

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Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
SMAJ36A	SMAJ36CA	36.0	40.0	44.2	1	58.1	6.9	1	√	7days
SMAJ40A	SMAJ40CA	40.0	44.4	49.1	1	64.5	6.2	1	√	7days
SMBJ43A	SMAJ43CA	43.0	47.8	52.8	1	69.4	5.8	1	√	7days
SMAJ45A	SMAJ45CA	45.0	50.0	55.3	1	72.7	5.5	1	√	7days
SMAJ48A	SMAJ48CA	48.0	53.3	58.9	1	77.4	5.2	1	√	7days
SMAJ51A	SMAJ51CA	51.0	56.7	62.7	1	82.4	4.9	1	√	7days
SMAJ54A	SMAJ54CA	54.0	60.0	66.3	1	87.1	4.6	1	√	7days
SMAJ58A	SMAJ58CA	58.0	64.4	71.2	1	93.6	4.3	1	√	7days
SMAJ60A	SMAJ60CA	60.0	66.7	73.7	1	96.8	4.1	1	√	7days
SMAJ64A	SMAJ64CA	64.0	71.1	78.6	1	103.0	3.9	1	√	7days
SMAJ70A	SMAJ70CA	70.0	77.8	86.0	1	113.0	3.5	1	√	7days
SMAJ75A	SMAJ75CA	75.0	83.3	92.1	1	121.0	3.3	1	√	7days
SMAJ78A	SMAJ78CA	78.0	86.7	95.8	1	126.0	3.2	1	√	7days
SMAJ85A	SMAJ85CA	85.0	94.4	104.0	1	137.0	2.9	1	√	7days
SMAJ90A	SMAJ90CA	90.0	100	111.0	1	146.0	2.7	1	√	7days
SMAJ100A	SMAJ100CA	100.0	111	123.0	1	162.0	2.5	1	√	7days
SMAJ110A	SMAJ110CA	110.0	122	135.0	1	177.0	2.3	1	√	7days
SMAJ120A	SMAJ120CA	120.0	133	147.0	1	193.0	2.1	1	√	7days
SMAJ130A	SMAJ130CA	130.0	144	159.0	1	209.0	1.9	1	√	7days
SMAJ150A	SMAJ150CA	150.0	167	185.0	1	243.0	1.6	1	√	7days
SMAJ160A	SMAJ160CA	160.0	178	197.0	1	259.0	1.5	1	√	7days
SMAJ170A	SMAJ170CA	170.0	189	209.0	1	275.0	1.5	1	√	7days
SMAJ180A	SMAJ180CA	180.0	201	222.0	1	292.0	1.4	1	√	7days
SMAJ190A	SMAJ190CA	190.0	209	243.2	1	308.0	1.3	1	√	7days

Electrical Characteristics (TA=25°C)

continued

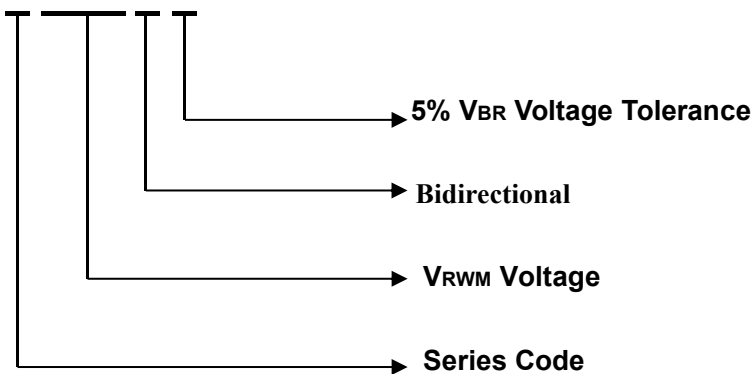


Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
SMAJ200A	SMAJ200CA	200.0	220	247.0	1	324.0	1.2	1	✓	7days
SMAJ210A	SMAJ210CA	210.0	231	268.8	1	340.0	1.2	1	✓	7days
SMAJ220A	SMAJ220CA	220.0	246	281.6	1	356.0	1.1	1	✓	7days
SMAJ250A	SMAJ250CA	250.0	279	309.0	1	405.0	1.0	1	✓	7days
SMAJ300A	SMAJ300CA	300.0	335	371.0	1	486.0	0.8	1	✓	7days
SMAJ350A	SMAJ350CA	350.0	391	432.0	1	567.0	0.7	1	✓	7days
SMAJ400A	SMAJ400CA	400.0	447	494.0	1	648.0	0.6	1	✓	7days
SMAJ440A	SMAJ440CA	440.0	492	543.0	1	713.0	0.6	1	✓	7days

Notes: For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

Description of Part Number

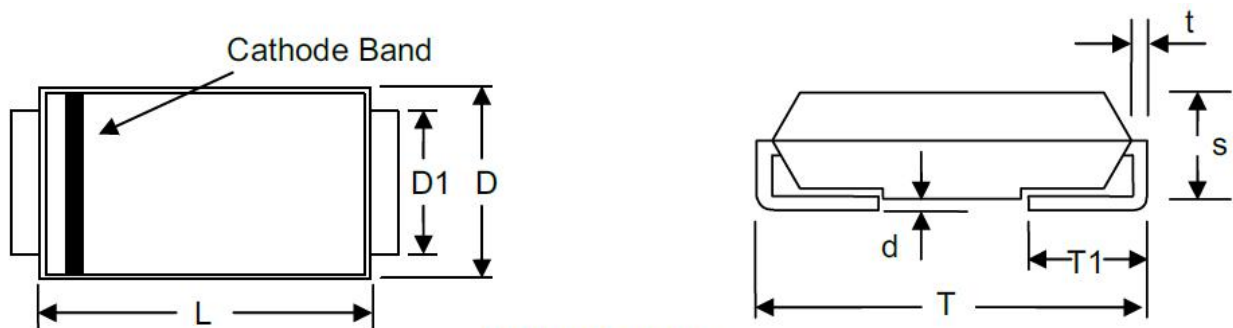
SMAJ XXX C A



Packing Options

Package Type	Description	Packing Quantity	Industry Standard
 DO-214AC	Embossed Carrier Reel Pack	5000PCS	EIA STD RS-481

Dimensions - DO-214AC



SMA/DO-214AC

Item	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	3.99	4.50	0.157	0.177
D	2.54	2.79	0.100	0.110
D1	1.25	1.65	0.049	0.065
T	4.93	5.28	0.194	0.208
T1	0.78	1.52	0.030	0.060
d	-	0.203	-	0.008
s	1.98	2.29	0.078	0.090
t	0.152	0.305	0.006	0.012

Figure 1 - Peak Pulse Power Rating Curve

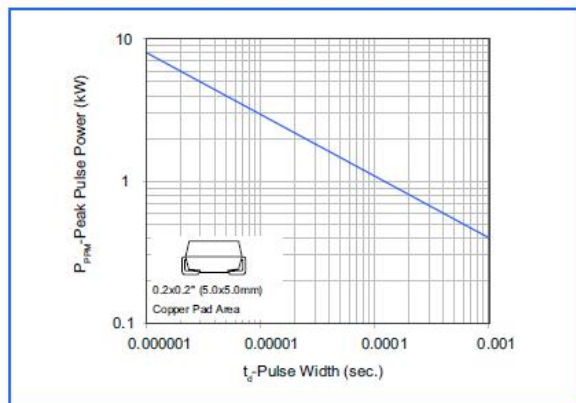


Figure 2 - Pulse Derating Curve

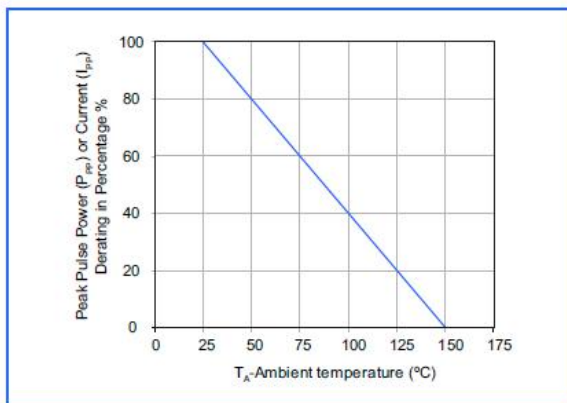


Figure 3 - Pulse Waveform

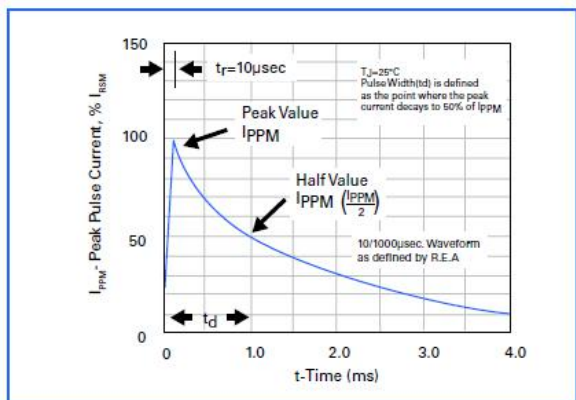


Figure 4 - Typical Junction Capacitance

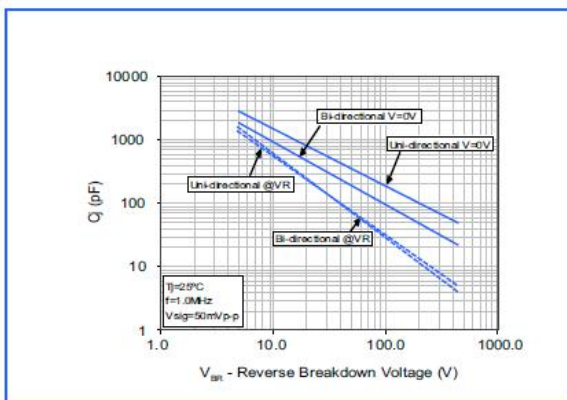


Figure 5 - Steady State Power Dissipation Derating Curve

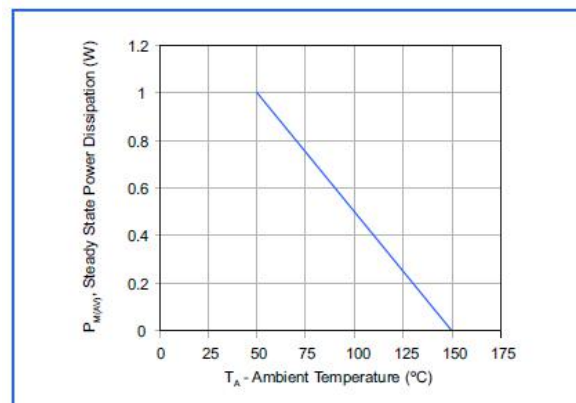


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

