

Unidirectional and Bidirectional Surface Mount Transient Voltage Suppressor

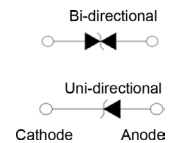
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**RoHS
Compliant**



Features

- Peak power dissipation 400W @10 x 1000µs Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Fast response time: typically less than 1ps from 0 Volts to BV min
- Typical IR less than 1uA when VBR min above 12V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and Lead-free finish



Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Characteristics	Symbol	Values	Unit
Peak Power Dissipation at TA = 25°C TP = 1ms (Note 1, 2)	PPK	Min. 400	Watts
Power Dissipation on Infinite Heat Sink at TL=50°C	PD	3.3	
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	IFSM	60	Amps
Operating Temperature Range	TJ	-55 to +150	°C
Storage Temperature Range	TSTG	-55 to +175	°C

Notes:

1. Non-repetitive current pulse ,per Fig. 3 and derated above TA = 25°C per Fig. 1.
2. Thermal Resistance junction to Lead.
3. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

Electrical Characteristics @ TAMB 25°C

Part Number		Marking		Reverse Stand-Off Voltage	Break down Voltage Min. @IT	Break-down Voltage Max. @ IT	Test Current	Max. Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage at VRWM
Unidirectional	Bidirectional			VRWM (V)	VBR MIN (V)	VBR MAX (V)	IT (mA)	Vc (V)	IPP (A)	IR (µA)
SMAJ5.0A	SMAJ5.0CA	HE	TE	5	6.4	7	10	9.2	43.5	800
SMAJ6.0A	-	HG	TG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	-	HK	TK	6.5	7.22	7.98	10	11.2	35.7	500
-	SMAJ7.0CA	HM	TM	7	7.78	8.6	10	12	33.3	200

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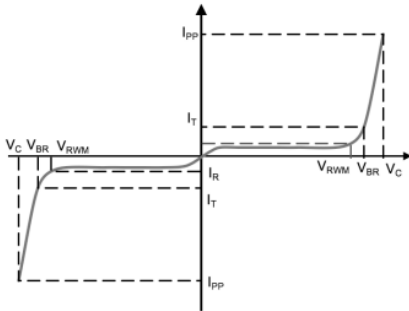
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Unidirectional	Bidirectional			VRWM (V)	VBR MIN (V)	VBR MAX (V)	IT (mA)	Vc (V)	IPP (A)	IR (µA)
SMAJ7.5A	-	HP	TP	7.5	8.33	9.21	1	12.9	31	100
SMAJ8.5A	-	HT	TT	8.5	9.44	10.4	1	14.4	27.7	20
-	SMAJ9.0CA	HV	TV	9	10	11.1	1	15.4	26	10
SMAJ10A	SMAJ10CA	HX	TX	10	11.1	12.3	1	17	23.5	5
-	SMAJ11CA	HZ	TZ	11	12.2	13.5	1	18.2	22	1
SMAJ12A	SMAJ12CA	IE	IE	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A	SMAJ13CA	IG	UG	13	14.4	15.9	1	21.5	18.6	1
SMAJ15A	SMAJ15CA	IM	UM	15	16.7	18.5	1	24.4	18.4	1
SMAJ16A	-	IP	UP	16	17.8	19.7	1	26	15.4	1
SMAJ18A	SMAJ18CA	IT	UT	18	20	22.1	1	29.2	13.7	1
SMAJ20A	SMAJ20CA	IV	UV	20	22.2	24.5	1	32.4	12.3	1
SMAJ22A	-	IX	UX	22	24.4	26.9	1	35.5	11.3	1
SMAJ24A	SMAJ24CA	IZ	UZ	24	26.7	29.5	1	38.9	10.3	1
SMAJ26A	SMAJ26CA	JE	VE	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A	-	JG	VG	28	31.1	34.4	1	45.4	8.8	1
SMAJ30A	SMAJ30CA	JK	VK	30	33.3	36.8	1	48.4	8.3	1
SMAJ33A	SMAJ33CA	JM	VM	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A	SMAJ36CA	JP	VP	36	40	44.2	1	58.1	6.9	1
SMAJ40A	SMAJ40CA	JR	VR	40	44.4	49.1	1	64.5	6.2	1
-	SMAJ43CA	JT	VT	43	47.8	52.8	1	69.4	5.8	1
-	SMAJ48CA	JX	VX	48	53.3	58.9	1	77.4	5.2	1
SMAJ51A	SMAJ51CA	JZ	VZ	51	56.7	62.7	1	82.4	4.9	1
SMAJ54A	SMAJ54CA	RE	WE	54	60	71.1	1	87.1	4.6	1
SMAJ58A	SMAJ58CA	RG	WG	58	66.4	71.2	1	93.6	4.3	1
SMAJ60A	-	RK	WK	60	66.7	73	1	90.8	4.1	1
SMAJ64A	-	RM	WM	64	71.1	78.6	1	10.3	3.9	1
SMAJ120A	-	SG	XG	120	133	147	1	193	2.1	1
SMAJ150A	SMAJ150CA	SM	XM	150	167	185	1	243	1.6	1

Note: 1. For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double.

Typical Characteristic curves @TA=25°C unless otherwise specified

I-V Curve Characteristics



PPPM: Peak Pulse Power Dissipation - Max power dissipation

VRWM: Reverse Stand-off Voltage - Maximum voltage that can be applied to TVS without operation

VBR: Breakdown Voltage – Maximum voltage that flows through the TVS at a specified current (IT)

VC: Clamping Voltage: – Peak voltage measured across the TVS at a specified IPPM (peak impulse current)

IR: Reverse Leakage Current: – Current measured at VR

VF: Forward Voltage Drop for Uni-directional

Ratings and Characteristic Curves

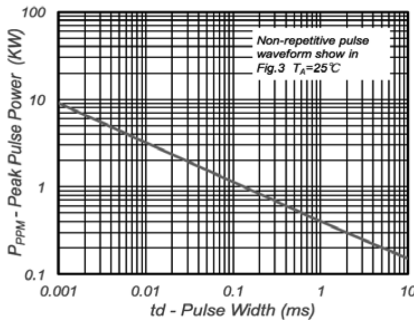


Fig.1 Peak Pulse Power Rating

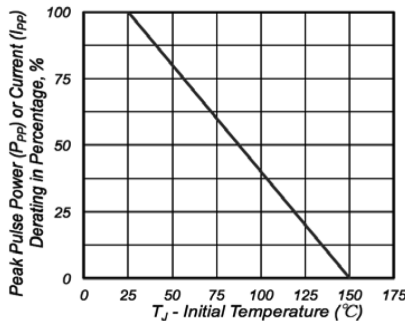


Fig.2 Pulse Derating Curve

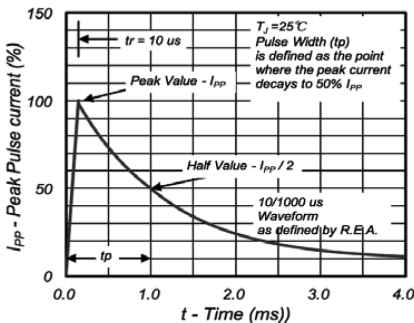


Fig.3 Pulse Waveform

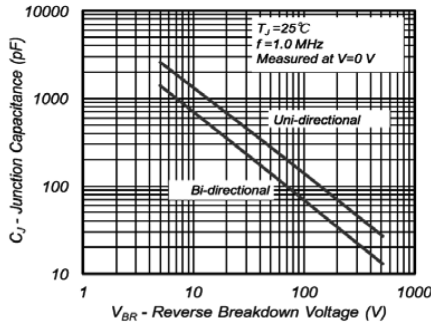
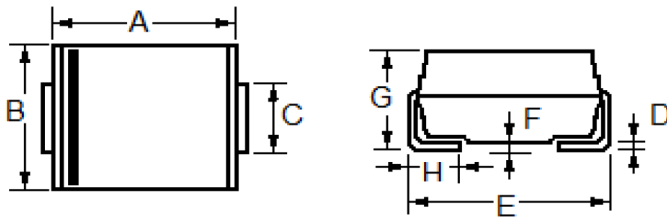


Fig.4 Typical Junction Capacitance

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Diagram



Package:DO-214AC (SMA)

Dim.	Millimetres		Inches	
A	3.99	4.5	0.157	0.177
B	2.54	2.79	0.1	0.11
C	1.25	1.65	0.049	0.065
D	0.152	0.305	0.006	0.012
E	4.93	5.28	0.194	0.208
F	-	0.203	-	0.008
G	1.98	2.29	0.078	0.09
H	0.76	1.52	0.03	0.06

Part Number Table

Description	Part Number	Description	Part Number	Description	Part Number
Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ5.0A	Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ16A	Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ40A
	SMAJ5.0CA		SMAJ18A		SMAJ40CA
	SMAJ6.0A		SMAJ18CA		SMAJ43CA
	SMAJ6.5A		SMAJ20A		SMAJ48CA
	SMAJ7.0CA		SMAJ20CA		SMAJ51A
	SMAJ7.5A		SMAJ22A		SMAJ51CA
	SMAJ8.5A		SMAJ24A		SMAJ54A
	SMAJ9.0CA		SMAJ24CA		SMAJ54CA
	SMAJ10A		SMAJ26A		SMAJ58A
	SMAJ10CA		SMAJ26CA		SMAJ58CA
	SMAJ11CA		SMAJ28A		SMAJ60A
	SMAJ12A		SMAJ30A		SMAJ64A
	SMAJ12CA		SMAJ30CA		SMAJ120A
	SMAJ13A		SMAJ33A		SMAJ150A
	SMAJ13CA		SMAJ33CA		SMAJ150CA
SMAJ15A	SMAJ36A				
SMAJ15CA	SMAJ36CA				

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