

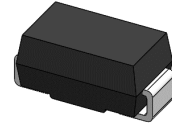
## 400W,10 - 220V Transient Voltage Suppressors

### Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 400W peak pulse power capability with a 10/1000  $\mu$ s waveform



**RoHS**  
COMPLIANT



SMA(DO-214AC)

### Applications

- SMPS
- Adapters
- Monitor

### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Peak power dissipation with a 10/1000us waveform	$P_{PPM}$	400	W
Peak pulse current with a 10/1000us waveform	$I_{PPM}$	See Next Table	A
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$	$P_D$	3	W
Peak forward surge current, 8.3ms single half-sine wave	$I_{FSM}$	40	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	90	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	20	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	25	$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I <sub>r</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>d</sub> (μA)	Maximum Peak Pulse Current I <sub>ppM</sub> (A)	Maximum Clamping Voltage at I <sub>ppM</sub> V <sub>c</sub> (Volts)
		UNI	BI	Min	Max					
SMAJ11A	SMAJ11CA	AZ	WZ	12.2	13.5	1.0	11	1.0	22.0	18.2
SMAJ12A	SMAJ12CA	BE	XE	13.3	14.7	1.0	12	1.0	20.1	19.9
SMAJ13A	SMAJ13CA	BG	XG	14.4	15.9	1.0	13	1.0	18.6	21.5
SMAJ14A	SMAJ14CA	BK	XK	15.6	17.2	1.0	14	1.0	17.2	23.2
SMAJ15A	SMAJ15CA	BM	XM	16.7	18.5	1.0	15	1.0	16.4	24.4
SMAJ16A	SMAJ16CA	BP	XP	17.8	19.7	1.0	16	1.0	15.4	26.0
SMAJ17A	SMAJ17CA	BR	XR	18.9	20.9	1.0	17	1.0	14.5	27.6
SMAJ18A	SMAJ18CA	BT	XT	20.0	22.1	1.0	18	1.0	13.7	29.2
SMAJ20A	SMAJ20CA	BV	XV	22.2	24.5	1.0	20	1.0	12.3	32.4
SMAJ22A	SMAJ22CA	BX	XX	24.4	26.9	1.0	22	1.0	11.3	35.5
SMAJ24A	SMAJ24CA	BZ	XZ	26.7	29.5	1.0	24	1.0	10.3	38.9
SMAJ26A	SMAJ26CA	CE	YE	28.9	31.9	1.0	26	1.0	9.5	42.1
SMAJ28A	SMAJ28CA	CG	YG	31.1	34.4	1.0	28	1.0	8.8	45.4
SMAJ30A	SMAJ30CA	CK	YK	33.3	36.8	1.0	30	1.0	8.3	48.4
SMAJ33A	SMAJ33CA	CM	YM	36.7	40.6	1.0	33	1.0	7.5	53.3
SMAJ36A	SMAJ36CA	CP	YP	40.0	44.4	1.0	36	1.0	6.9	58.1
SMAJ40A	SMAJ40CA	CR	YR	44.4	49.1	1.0	40	1.0	6.2	64.5
SMAJ43A	SMAJ43CA	CT	YT	47.8	52.8	1.0	43	1.0	5.8	69.4
SMAJ45A	SMAJ45CA	CV	YV	50.0	55.3	1.0	45	1.0	5.5	72.7
SMAJ48A	SMAJ48CA	CX	YX	53.3	58.9	1.0	48	1.0	5.2	77.4
SMAJ51A	SMAJ51CA	CZ	YZ	56.7	62.7	1.0	51	1.0	4.9	82.4
SMAJ54A	SMAJ54CA	RE	ZE	60.0	66.3	1.0	54	1.0	4.6	87.1
SMAJ58A	SMAJ58CA	RG	ZG	64.4	71.2	1.0	58	1.0	4.3	93.6
SMAJ60A	SMAJ60CA	RK	ZK	66.7	73.7	1.0	60	1.0	4.1	96.8
SMAJ64A	SMAJ64CA	RM	ZM	71.1	78.6	1.0	64	1.0	3.9	103
SMAJ70A	SMAJ70CA	RP	ZP	77.8	86.0	1.0	70	1.0	3.5	113
SMAJ75A	SMAJ75CA	RR	ZR	83.3	92.1	1.0	75	1.0	3.3	121
SMAJ78A	SMAJ78CA	RT	ZT	86.7	95.8	1.0	78	1.0	3.2	126
SMAJ85A	SMAJ85CA	RV	ZV	94.4	104	1.0	85	1.0	2.9	137
SMAJ90A	SMAJ90CA	RX	ZX	100	111	1.0	90	1.0	2.7	146
SMAJ100A	SMAJ100CA	RZ	ZZ	111	123	1.0	100	1.0	2.5	162
SMAJ110A	SMAJ110CA	SE	VE	122	135	1.0	110	1.0	2.3	177
SMAJ120A	SMAJ120CA	SG	VG	133	147	1.0	120	1.0	2.1	193

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I <sub>T</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> (μA)	Maximum Peak Pulse Current I <sub>PPM</sub> (A)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>C</sub> (Volts)
		UNI	BI	Min	Max					
SMAJ150A	SMAJ150CA	SM	VM	167	185	1.0	150	1.0	1.6	243
SMAJ160A	SMAJ160CA	SP	VP	178	197	1.0	160	1.0	1.5	259
SMAJ170A	SMAJ170CA	SR	VR	189	209	1.0	170	1.0	1.5	275
SMAJ180A	SMAJ180CA	ST	VT	201	222	1.0	180	1.0	1.4	292
SMAJ200A	SMAJ200CA	SV	VV	224	247	1.0	200	1.0	1.2	324
SMAJ220A	SMAJ220CA	SX	VX	246	272	1.0	220	1.0	1.1	356

Note:

1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5×5mm copper pads

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

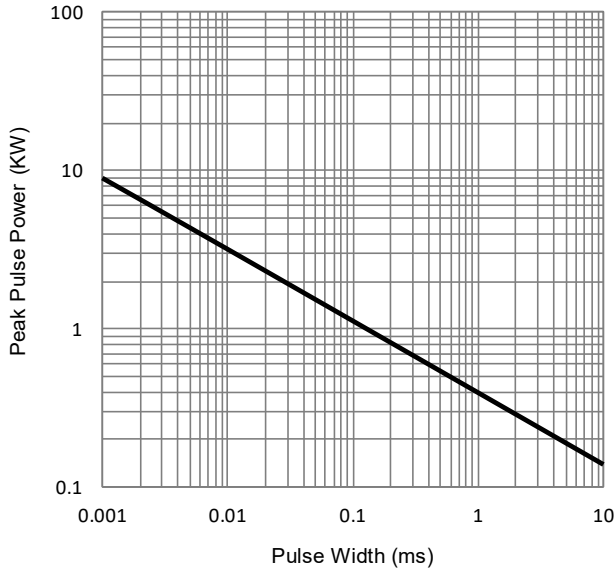


Fig.1 - Peak Pulse Power Derating Curve

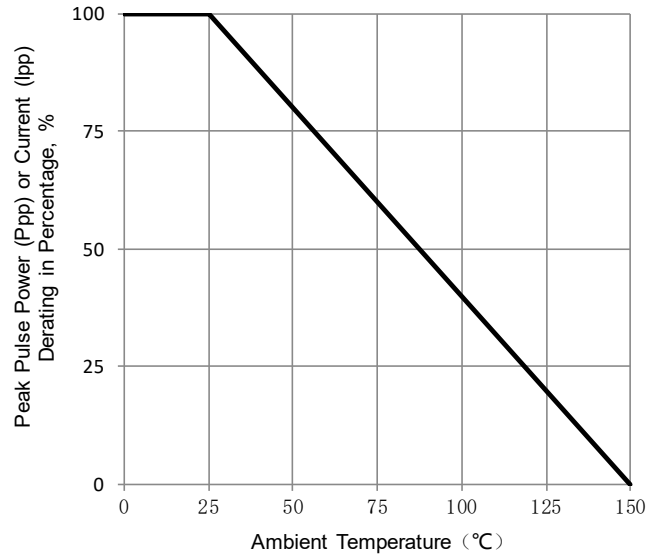


Fig.2 - Pulse Power vs Ambient Temperature

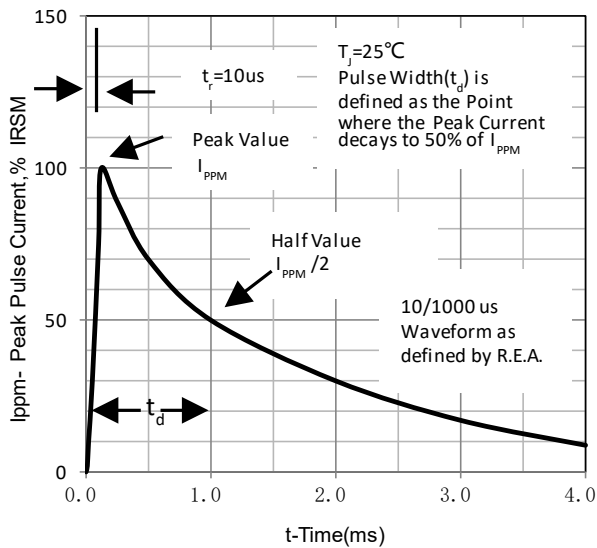


Fig.3 - Pulse Waveform

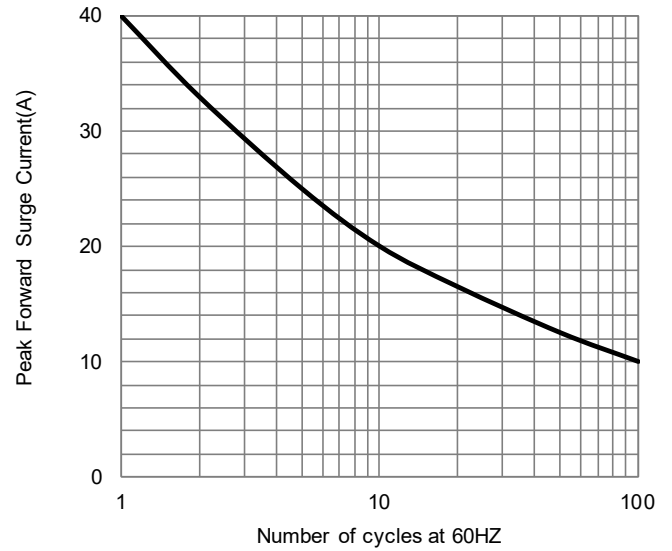
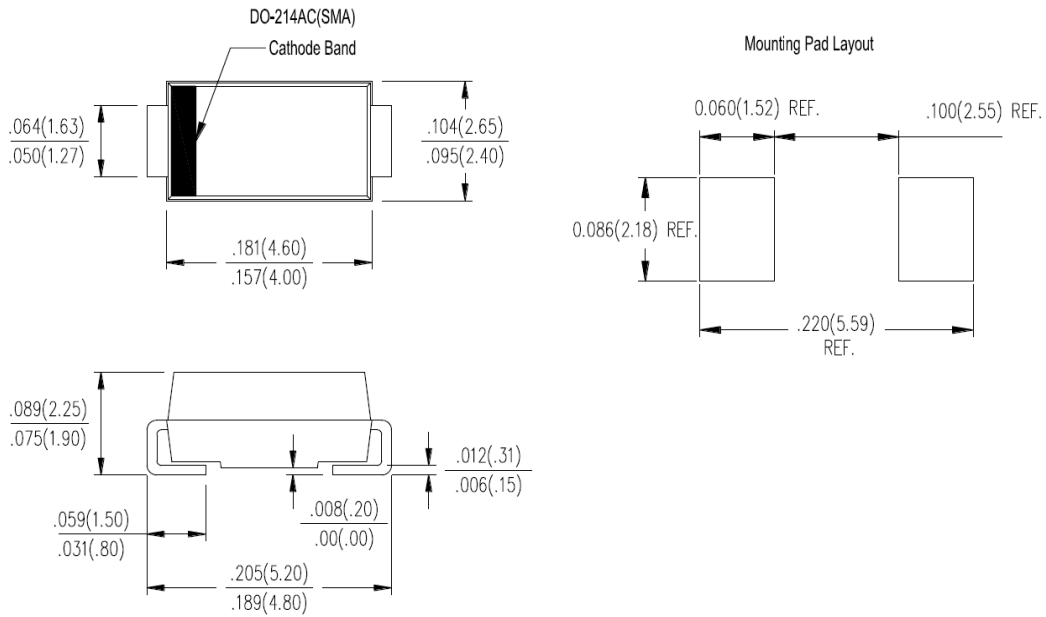


Fig.4 - Maximum Non-Repetitive Surge Current

## Package Outline Dimensions

in inches (millimeters)

### SMA (DO-214AC)



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.15	Released Datasheet
Rev.B	2023.10.13	Modify document format
Rev.C	2023.12.18	Update product range

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