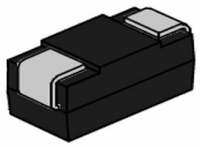
TRANSIENT VOLTAGE SUPPRESSOR

SMAJ SERIES

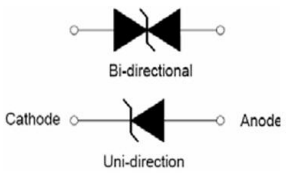
Features

- 400Watts peak pulse power (tp=10/1000μS)
- Low leakage.
- Quick response to surge voltage
- Excellent clamping capability.
- Uni and BidirectioAu/nDit DO-214AC
- Polarity: Color band denotes cathode end except bipola

- Epoxy: UL 94V-0 rate flame retardant.
- Case: SMA/DO-214AC, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except bipolar.
- Weight: 0.063 gram (approx.)
- RoHS Compliant



SMA



Symbol

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T_J/T_{STG}	-55 to +150	℃
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	1.0	W
Peak pulse power dissipation on 10/ 1000μs waveform	P_{PP}	400	W
Maximum instantaneous forward voltage at 25A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3ms single half sine wave （Note 1）	I_{FSM}	60	A
Typical thermal resistance junction to lead	$R_{\theta JL}$	30	℃/W
Typical thermal resistance	$R_{\theta JA}$	120	℃/W

.

Electrical Characteristic (@TA = 25°C, unless otherwise specified)

Part Number		V_R	I_R@V_R	V_{BR}@I_T		I_T	V_C@I_{PP}	I_{PP}③
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMAJ5.0A	SMAJ5.0CA	5	120	6.4	7	10	9.2	43.5
SMAJ6.0A	SMAJ6.0CA	6	120	6.67	7.37	10	10.3	38.8
SMAJ6.5A	SMAJ6.5CA	6.5	80	7.22	7.98	10	11.2	35.7
SMAJ7.0A	SMAJ7.0CA	7	50	7.78	8.6	10	12	33.3
SMAJ7.5A	SMAJ7.5CA	7.5	50	8.33	9.21	1	12.9	31
SMAJ8.0A	SMAJ8.0CA	8	20	8.89	9.83	1	13.6	29.4
SMAJ8.5A	SMAJ8.5CA	8.5	10	9.44	10.4	1	14.4	27.8
SMAJ9.0A	SMAJ9.0CA	9	5	10	11.1	1	15.4	26
SMAJ10A	SMAJ10CA	10	2	11.1	12.3	1	17	23.5
SMAJ11A	SMAJ11CA	11	1	12.2	13.5	1	18.2	22
SMAJ12A	SMAJ12CA	12	1	13.3	14.7	1	19.9	20.1
SMAJ13A	SMAJ13CA	13	1	14.4	15.9	1	21.5	18.6
SMAJ14A	SMAJ14CA	14	1	15.6	17.2	1	23.2	17.3
SMAJ15A	SMAJ15CA	15	1	16.7	18.5	1	24.4	16.4
SMAJ16A	SMAJ16CA	16	1	17.8	19.7	1	26	15.4
SMAJ17A	SMAJ17CA	17	1	18.9	20.9	1	27.6	14.5
SMAJ18A	SMAJ18CA	18	1	20	22.1	1	29.2	13.7
SMAJ20A	SMAJ20CA	20	1	22.2	24.5	1	32.4	12.4
SMAJ22A	SMAJ22CA	22	1	24.4	26.9	1	35.5	11.3
SMAJ24A	SMAJ24CA	24	1	26.7	29.5	1	38.9	10.3
SMAJ26A	SMAJ26CA	26	1	28.9	31.9	1	42.1	9.5
SMAJ28A	SMAJ28CA	28	1	31.1	34.4	1	45.4	8.8
SMAJ30A	SMAJ30CA	30	1	33.3	36.8	1	48.4	8.3
SMAJ33A	SMAJ33CA	33	1	36.7	40.6	1	53.3	7.5
SMAJ36A	SMAJ36CA	36	1	40	44.2	1	58.1	6.9
SMAJ40A	SMAJ40CA	40	1	44.4	49.1	1	64.5	6.2
SMAJ43A	SMAJ43CA	43	1	47.8	52.8	1	69.4	5.8
SMAJ45A	SMAJ45CA	45	1	50	55.3	1	72.7	5.5
SMAJ48A	SMAJ48CA	48	1	53.3	58.9	1	77.4	5.2
SMAJ51A	SMAJ51CA	51	1	56.7	62.7	1	82.4	4.9
SMAJ54A	SMAJ54CA	54	1	60	66.3	1	87.1	4.6
SMAJ58A	SMAJ58CA	58	1	64.4	71.2	1	93.6	4.3
SMAJ60A	SMAJ60CA	60	1	66.7	73.7	1	96.8	4.1
SMAJ64A	SMAJ64CA	64	1	71.1	78.6	1	103	3.9
SMAJ70A	SMAJ70CA	70	1	77.8	86	1	113	3.6
SMAJ75A	SMAJ75CA	75	1	83.3	92.1	1	121	3.3

Part Number		V_R	I_R@V_R	V_{BR}@I_T		I_T	V_C@I_{PP}	I_{PP}③
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMAJ78A	SMAJ78CA	78	1	86.7	95.8	1	126	3.2
SMAJ85A	SMAJ85CA	85	1	94.4	104	1	137	2.9
SMAJ90A	SMAJ90CA	90	1	100	111	1	146	2.8
SMAJ100A	SMAJ100CA	100	1	111	123	1	162	2.5
SMAJ110A	SMAJ110CA	110	1	122	135	1	177	2.3
SMAJ120A	SMAJ120CA	120	1	133	147	1	193	2.1
SMAJ130A	SMAJ130CA	130	1	144	159	1	209	1.9
SMAJ150A	SMAJ150CA	150	1	167	185	1	243	1.7
SMAJ160A	SMAJ160CA	160	1	178	197	1	259	1.6
SMAJ170A	SMAJ170CA	170	1	189	209	1	275	1.5
SMAJ180A	SMAJ180CA	180	1	201	222	1	292	1.4
SMAJ200A	SMAJ200CA	200	1	224	247	1	324	1.3
SMAJ220A	SMAJ220CA	220	1	246	272	1	356	1.1
SMAJ250A	SMAJ250CA	250	1	279	309	1	405	1
SMAJ300A	SMAJ300CA	300	1	335	371	1	486	0.8
SMAJ350A	SMAJ350CA	350	1	391	432	1	567	0.7
SMAJ400A	SMAJ400CA	400	1	447	494	1	648	0.6
SMAJ440A	SMAJ440CA	440	1	492	543	1	713	0.6

Notes:

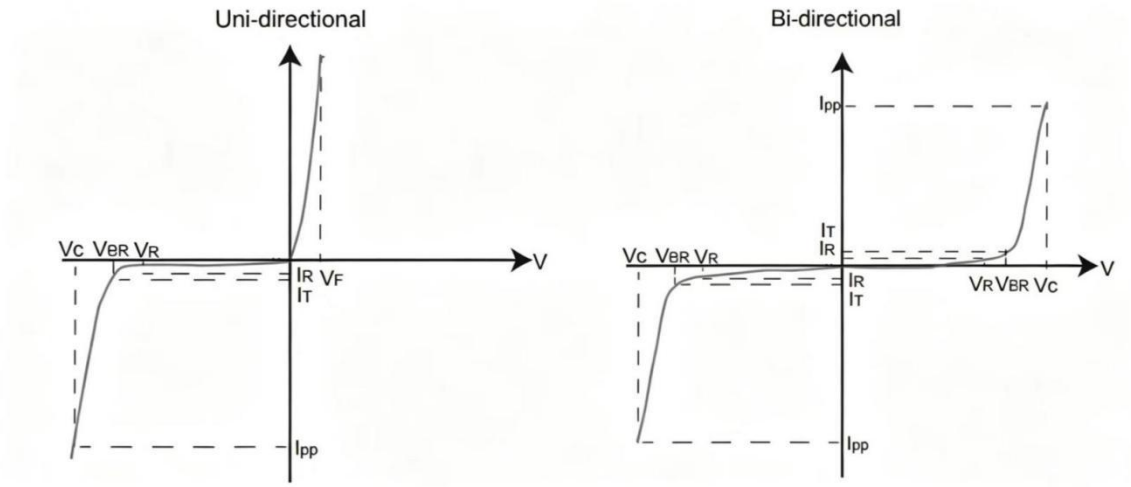
Notes： 1.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

2. VBR measured with IT current pulse = 10 ~ 15ms

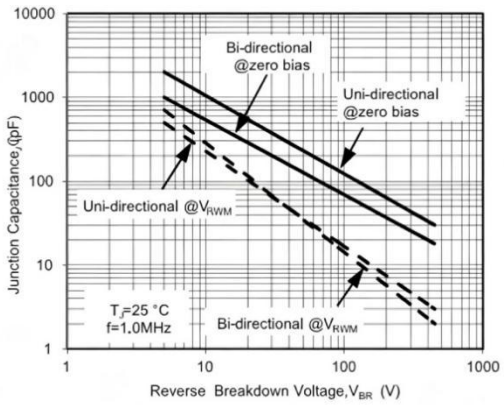
3.Per 10 x 1000μs waveform

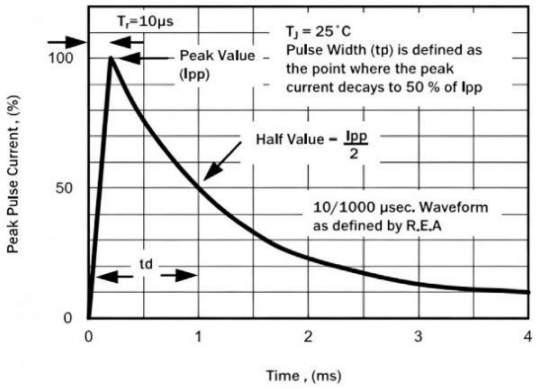
4.For bidirectional type having VR of 10 volts and less, the IR limit is double

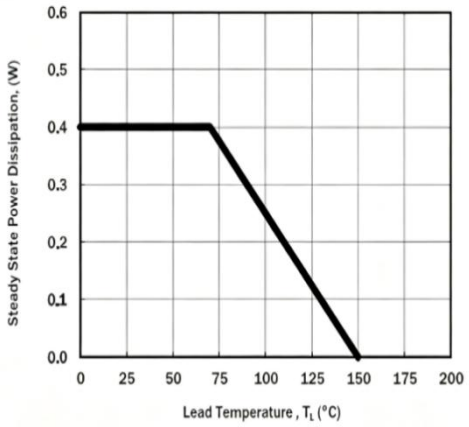
V-I Curve **Typical**

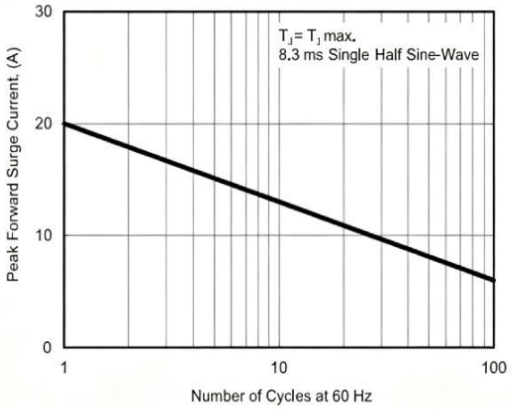


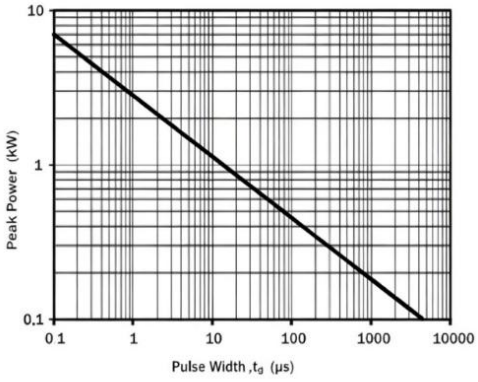
Performance Characteristics （T_A=25°C unless otherwise Specified）

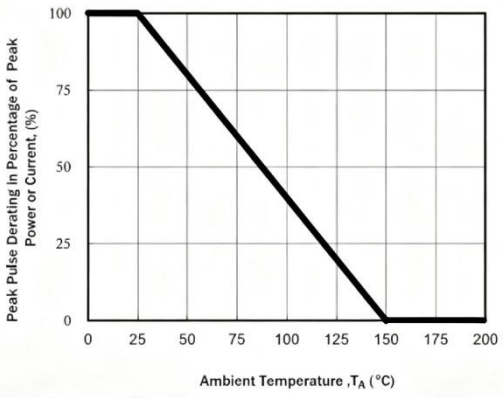




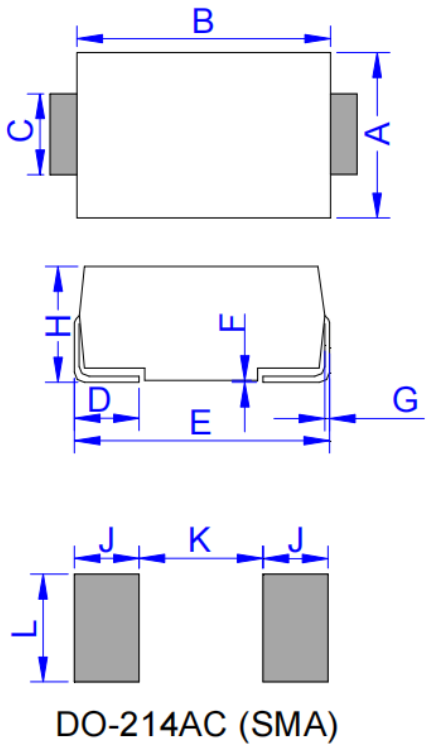








ProductDimensions And Suggested PADLayout

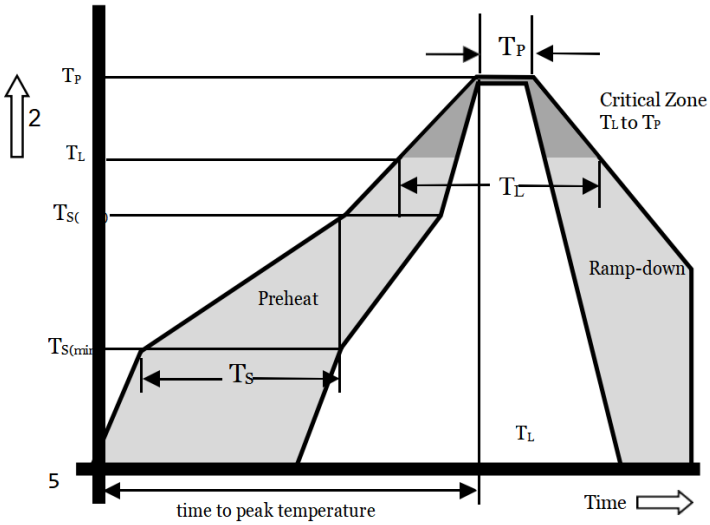


DO-214AC (SMA)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

Reflow profile

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 seconds
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (T_L)	60 – 150 seconds
Peak Temp (T_P)		260+0/-5 °C
Time within 5°C of actual Peak Temp (T_P)		8-15 seconds
Ramp-down Rate		6°C/s max
Time 25°C to peak Temp (T_P)		8 min max.
Do not exceed		260°C



Part Number System

SMA XXX C A(1) (2) (3) (4)

(1) Series Code

(2) Reverse Stand-Off Voltage (3)BI-directional

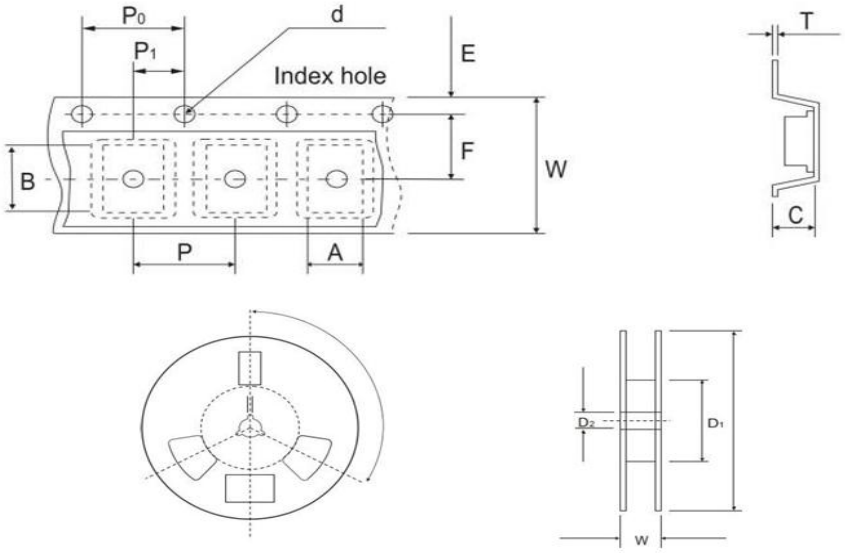
(3) Suffix "A" denotes 5% tolerance devices

Marking

	SMAJ XXA

SMAJ XXCA

Reel Taping Specification



SMA /DO-214AC	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.79 ± 0.10	5.33 ± 0.10	4.50 (max)	1.75 ± 0.10	330MAX	50.0 MIN.	13.0 ± 0.2
	(inch)	0.110 ± 0.004	0.210 ±0.004	0.177 (max)	0.069 ± 0.004	13.00MAX	1.969 MIN.	0.512 ± 0.008
	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	12.0 ± 0.30	18.4 MAX.
	(inch)	0.069 ± 0.004	0.216 ±0.002	0.157 ±0.004	0.157 ± 0.004	0.079 ± 0.002	0.472 ±0.012	0.724 MAX

Ordering information

OUTLINE	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	REEL DIAMETERS (mm)
TAPING	0.063	5,000	330

NOTICE

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