



E480232

Features

- Fully Automotive Qualified to AEC-Q101
- For Surface Mount Applications
- Excellent Clamping Capability
- High Temp Soldering: 260°C / 10 Seconds at Terminals
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, ±30kV(Air), ±30kV (Contact)

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000µs Waveform (Note 3)	I_{PPM}	See Next Table	A
Peak Pulse Power Dissipation (Note 3)	P_{PPM}	400	W
Power Dissipation on Infinite Heatsink at $T_A = 25^\circ\text{C}$	P_D	1.25	W
Peak Forward Surge Current Unidirectional Only (Note 4)	I_{FSM}	40	A

Note:

- Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
- Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig.4.
- 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.

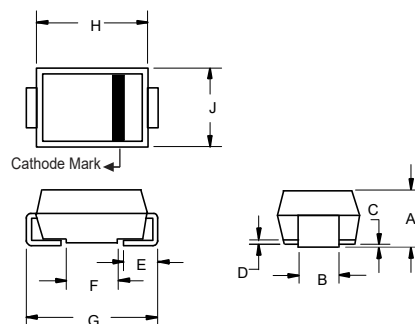
Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

400 Watt TVS
6.8 to 220
Volts

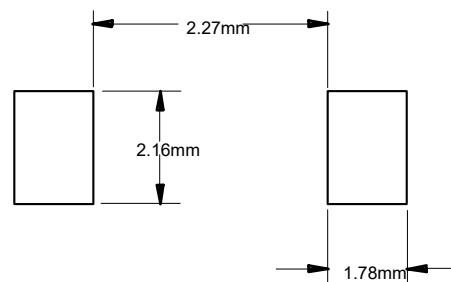
SMA (DO-214AC) LEAD FRAME



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.075	0.096	1.90	2.44	
B	0.050	0.064	1.27	1.63	
C	0.002	0.008	0.051	0.203	
D	---	0.020	---	0.51	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.189	0.220	4.80	5.59	
H	0.157	0.187	4.00	4.75	
J	0.090	0.115	2.25	2.92	

SUGGESTED SOLDER PAD LAYOUT



Thermal Characteristics

Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	120	°C/W
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	50	°C/W

Note:

5. Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number		Working Peak Reverse Voltage	Breakdown Voltage V_{BR} @ I_T			Maximum Clamping Voltage @ I_{PP}	Maximum Reverse Surge Current	Maximum Reverse Leakage @ V_{RWM}	Device Marking Code	
(Uni)	(Bi)	$V_{RWM}(V)$	Min (V)	Max (V)	I_T (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	Uni	Bi
SMAJP4KE6.8AQ	SMAJP4KE6.8CAQ	5.8	6.46	7.14	10	10.5	38.1	1000	6V8A	6V8C
SMAJP4KE7.5AQ	SMAJP4KE7.5CAQ	6.4	7.13	7.88	10	11.3	35.4	500	7V5A	7V5C
SMAJP4KE8.2AQ	SMAJP4KE8.2CAQ	7.0	7.79	8.61	10	12.1	33.1	200	8V2A	8V2C
SMAJP4KE9.1AQ	SMAJP4KE9.1CAQ	7.8	8.65	9.56	1	13.4	29.9	50	9V1A	9V1C
SMAJP4KE10AQ	SMAJP4KE10CAQ	8.6	9.50	10.50	1	14.5	27.6	10	10A	10C
SMAJP4KE11AQ	SMAJP4KE11CAQ	9.4	10.45	11.55	1	15.6	25.6	5	11A	11C
SMAJP4KE12AQ	SMAJP4KE12CAQ	10.2	11.40	12.60	1	16.7	24.0	5	12A	12C
SMAJP4KE13AQ	SMAJP4KE13CAQ	11.1	12.35	13.65	1	18.2	22.0	5	13A	13C
SMAJP4KE15AQ	SMAJP4KE15CAQ	12.8	14.25	15.75	1	21.2	18.9	1	15A	15C
SMAJP4KE16AQ	SMAJP4KE16CAQ	13.6	15.20	16.80	1	22.5	17.8	1	16A	16C
SMAJP4KE18AQ	SMAJP4KE18CAQ	15.3	17.10	18.90	1	25.2	15.9	1	18A	18C
SMAJP4KE20AQ	SMAJP4KE20CAQ	17.1	19.00	21.00	1	27.7	14.4	1	20A	20C
SMAJP4KE22AQ	SMAJP4KE22CAQ	18.8	20.90	23.10	1	30.6	13.1	1	22A	22C
SMAJP4KE24AQ	SMAJP4KE24CAQ	20.5	22.80	25.20	1	33.2	12.1	1	24A	24C
SMAJP4KE27AQ	SMAJP4KE27CAQ	23.1	25.65	28.35	1	37.5	10.7	1	27A	27C
SMAJP4KE30AQ	SMAJP4KE30CAQ	25.6	28.50	31.50	1	41.4	9.7	1	30A	30C
SMAJP4KE33AQ	SMAJP4KE33CAQ	28.2	31.35	34.65	1	45.7	8.8	1	33A	33C
SMAJP4KE36AQ	SMAJP4KE36CAQ	30.8	34.20	37.80	1	49.9	8.0	1	36A	36C
SMAJP4KE39AQ	SMAJP4KE39CAQ	33.3	37.05	40.95	1	53.9	7.4	1	39A	39C
SMAJP4KE43AQ	SMAJP4KE43CAQ	36.8	40.85	45.15	1	59.3	6.8	1	43A	43C
SMAJP4KE47AQ	SMAJP4KE47CAQ	40.2	44.65	49.35	1	64.8	6.2	1	47A	47C
SMAJP4KE51AQ	SMAJP4KE51CAQ	43.6	48.45	53.55	1	70.1	5.7	1	51A	51C
SMAJP4KE56AQ	SMAJP4KE56CAQ	47.8	53.20	58.80	1	77.0	5.2	1	56A	56C
SMAJP4KE62AQ	SMAJP4KE62CAQ	53.0	58.90	65.10	1	85.0	4.7	1	62A	62C
SMAJP4KE68AQ	SMAJP4KE68CAQ	58.1	64.60	71.40	1	92.0	4.4	1	68A	68C
SMAJP4KE75AQ	SMAJP4KE75CAQ	64.1	71.25	78.75	1	103.0	3.9	1	75A	75C
SMAJP4KE82AQ	SMAJP4KE82CAQ	70.1	77.90	86.10	1	113.0	3.5	1	82A	82C
SMAJP4KE91AQ	SMAJP4KE91CAQ	77.8	86.45	95.55	1	125.0	3.2	1	91A	91C
SMAJP4KE100AQ	SMAJP4KE100CAQ	85.5	95.00	105.00	1	137.0	2.9	1	100A	100C
SMAJP4KE110AQ	SMAJP4KE110CAQ	94.0	104.50	115.50	1	152.0	2.6	1	110A	110C
SMAJP4KE120AQ	SMAJP4KE120CAQ	102.0	114.00	126.00	1	165.0	2.4	1	120A	120C
SMAJP4KE130AQ	SMAJP4KE130CAQ	111.0	123.50	136.50	1	179.0	2.2	1	130A	130C
SMAJP4KE150AQ	SMAJP4KE150CAQ	128.0	142.50	157.50	1	207.0	1.9	1	150A	150C
SMAJP4KE160AQ	SMAJP4KE160CAQ	136.0	152.00	168.00	1	219.0	1.8	1	160A	160C
SMAJP4KE170AQ	SMAJP4KE170CAQ	145.0	161.50	178.50	1	234.0	1.7	1	170A	170C
SMAJP4KE180AQ	SMAJP4KE180CAQ	154.0	171.00	189.00	1	246.0	1.6	1	180A	180C
SMAJP4KE200AQ	SMAJP4KE200CAQ	171.0	190.00	210.00	1	274.0	1.5	1	200A	200C
SMAJP4KE220AQ	SMAJP4KE220CAQ	185.0	209.00	231.00	1	328.0	1.2	1	220A	220C

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

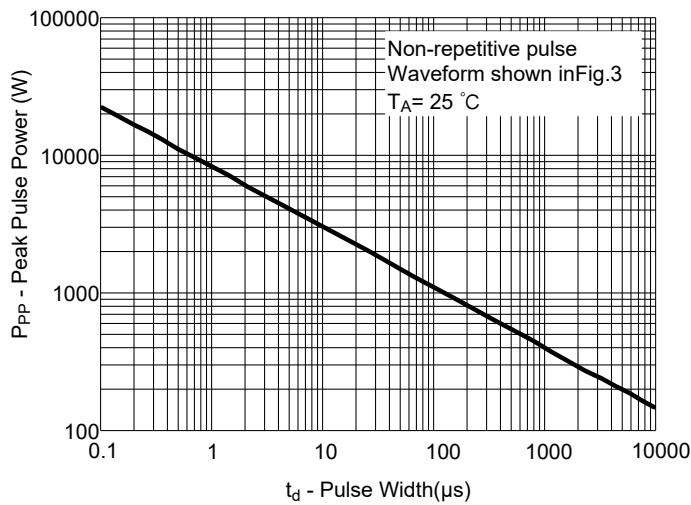


Fig. 2 - Typical Junction Capacitance

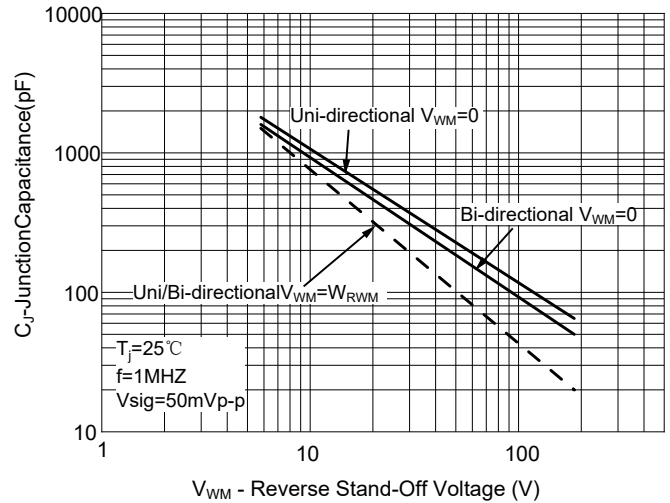


Fig. 3 - Pulse Waveform

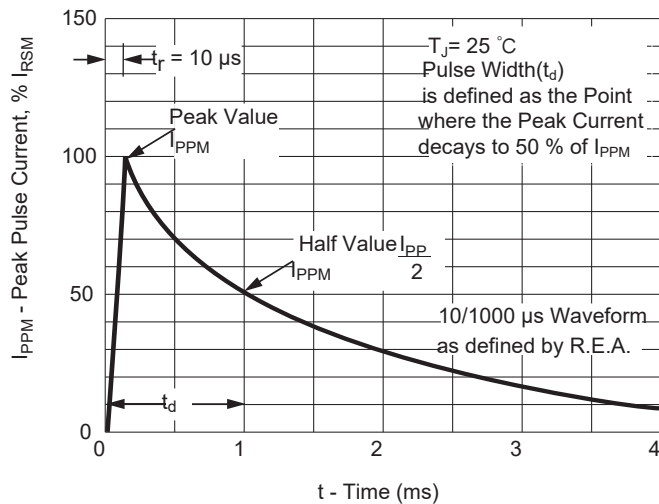
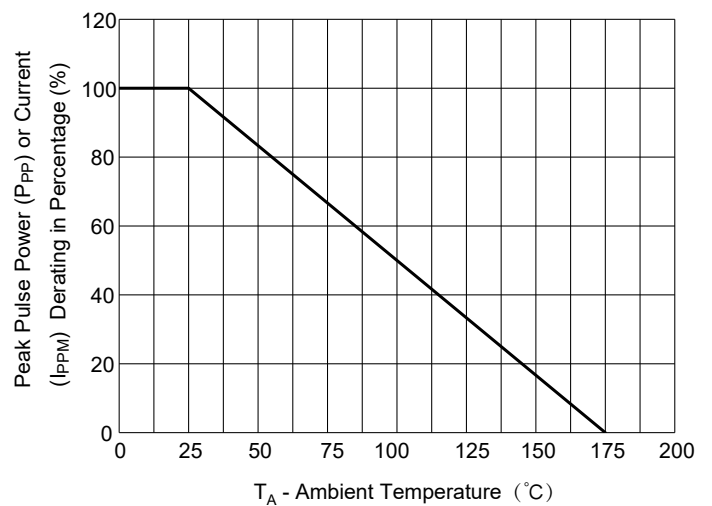


Fig. 4 - Pulse Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel

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