

	<b>E480232</b>
---	----------------

### Features

- For Surface Mount Applications in Order to Optimize Board Space
- Low Profile Package
- Unidirectional and Bidirectional Available, for Bidirectional Devices add 'C' Suffix to The pn#, i.e..SMAJP4KE6.8CA for 5% Tolerance
- Fast Response Time: Typical Less Than 1.0ps From 0 Volts to  $V_{BR}$  Minimum
- 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 Compliant. See Ordering Information)

### Mechanical Data

- Polarity: Color Band Denotes Positive end (cathode) Except Bidirectional
- Maximum Soldering Temperature: 260°C for 10 Seconds
- Case: JEDEC DO-214AC
- Terminals: Solderable Per MIL-STD-750, Method 2026

### Maximum Ratings

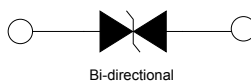
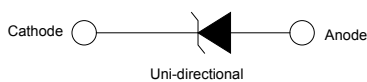
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance: 100°C/W Junction to Ambient

Peak Pulse Power Surge Current with a 10/1000µs Waveform	$I_{PP}$	See the Table	Note 3
Peak Pulse Power Dissipation	$P_{PP}$	400W	Note 3

#### Note:

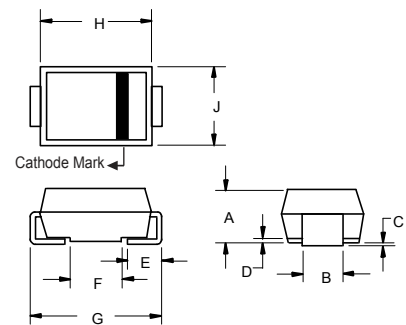
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$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

Configuration:



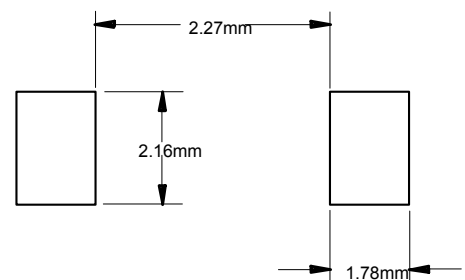
## 400 Watt TVS 6.8 to 550 Volts

### SMA (DO-214AC) LEAD FRAME



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.096	2.00	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	0.181	4.00	4.60	
J	0.090	0.115	2.25	2.92	

#### SUGGESTED SOLDER PAD LAYOUT



Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$	PEAK PULSE CURRENT $I_{PP}$	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$	MARKING CODE
	(VOLTS)	MIN	MAX	$I_T$ (mA)	(VOLTS)	(AMPS)	$\mu A$	
SMAJP4KE6.8A	5.80	6.45	7.14	10	10.5	39.0	1000	6V8A
SMAJP4KE7.5A	6.40	7.13	7.88	10	11.3	36.3	500	7V5A
SMAJP4KE8.2A	7.02	7.79	8.61	10	12.1	33.9	200	8V2A
SMAJP4KE9.1A	7.78	8.65	9.55	1	13.4	30.6	50	9V1A
SMAJP4KE10A	8.55	9.50	10.50	1	14.5	28.3	10	10A
SMAJP4KE11A	9.40	10.50	11.60	1	15.6	26.3	5	11A
SMAJP4KE12A	10.20	11.40	12.60	1	16.7	24.6	5	12A
SMAJP4KE13A	11.10	12.40	13.70	1	18.2	22.5	1	13A
SMAJP4KE15A	12.80	14.30	15.80	1	21.2	19.3	1	15A
SMAJP4KE16A	13.60	15.20	16.80	1	22.5	18.2	1	16A
SMAJP4KE18A	15.30	17.10	18.90	1	25.5	16.1	1	18A
SMAJP4KE20A	17.10	19.00	21.00	1	27.7	14.8	1	20A
SMAJP4KE22A	18.80	20.90	23.10	1	30.6	13.4	1	22A
SMAJP4KE24A	20.50	22.80	25.20	1	33.2	12.3	1	24A
SMAJP4KE27A	23.10	25.70	28.40	1	37.5	10.9	1	27A
SMAJP4KE30A	25.60	28.50	31.50	1	41.4	9.9	1	30A
SMAJP4KE33A	28.20	31.40	34.70	1	45.7	9.0	1	33A
SMAJP4KE36A	30.80	34.20	37.80	1	49.9	8.2	1	36A
SMAJP4KE39A	33.30	37.10	41.00	1	53.9	7.6	1	39A
SMAJP4KE43A	36.80	40.90	45.20	1	59.3	6.9	1	43A
SMAJP4KE47A	40.20	44.70	49.40	1	64.8	6.3	1	47A
SMAJP4KE51A	43.60	48.50	53.60	1	70.1	5.8	1	51A
SMAJP4KE56A	47.80	53.20	58.80	1	77.0	5.3	1	56A
SMAJP4KE62A	53.00	58.90	65.10	1	85.0	4.8	1	62A
SMAJP4KE68A	58.10	64.60	71.40	1	92.0	4.5	1	68A
SMAJP4KE75A	64.10	71.30	78.80	1	103.0	4.0	1	75A
SMAJP4KE82A	70.10	77.90	86.10	1	113.0	3.6	1	82A
SMAJP4KE91A	77.80	86.50	95.50	1	125.0	3.3	1	91A
SMAJP4KE100A	85.50	95.00	105.00	1	137.0	3.0	1	100A
SMAJP4KE110A	94.00	105.00	116.00	1	152.0	2.7	1	110A
SMAJP4KE120A	102.00	114.00	126.00	1	165.0	2.5	1	120A
SMAJP4KE130A	111.00	124.00	137.00	1	179.0	2.3	1	130A
SMAJP4KE150A	128.00	143.00	158.00	1	207.0	2.0	1	150A
SMAJP4KE160A	136.00	152.00	168.00	1	219.0	1.9	1	160A
SMAJP4KE170A	145.00	162.00	179.00	1	234.0	1.8	1	170A
SMAJP4KE180A	154.00	171.00	189.00	1	246.0	1.7	1	180A
SMAJP4KE200A	171.00	190.00	210.00	1	274.0	1.5	1	200A
SMAJP4KE220A	185.00	209.00	231.00	1	328.0	1.3	1	220A
SMAJP4KE250A	214.00	237.00	263.00	1	344.0	1.2	1	250A
SMAJP4KE300A	256.00	285.00	315.00	1	414.0	1.0	1	300A
SMAJP4KE350A	300.00	332.00	368.00	1	482.0	0.9	1	350A

\*For Bi-directional type having  $V_{WM}$  of 10 volts and less, the  $I_R$  limit is double.

\*The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$	PEAK PULSE CURRENT $I_{PP}$	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$	MARKING CODE
	(VOLTS)	MIN	MAX	$I_T$ (mA)	(VOLTS)	(AMPS)	$\mu A$	
SMAJP4KE400A	342.00	380.00	420.00	1	548.0	0.8	1	400A
SMAJP4KE440A	376.00	418.00	462.00	1	602.0	0.7	1	440A
SMAJP4KE480A	408.00	456.00	504.00	1	658.0	0.6	1	480A
SMAJP4KE510A	434.00	485.00	535.00	1	698.0	0.6	1	510A
SMAJP4KE530A	477.00	503.50	556.50	1	725.0	0.6	1	530A
SMAJP4KE540A	459.00	513.00	567.00	1	740.0	0.5	1	540A
SMAJP4KE550A	495.00	522.50	577.50	1	760.0	0.5	1	550A
SMAJP4KE6.8CA	5.80	6.45	7.14	10	10.5	39.0	1000	6V8C
SMAJP4KE7.5CA	6.40	7.13	7.88	10	11.3	36.3	500	7V5C
SMAJP4KE8.2CA	7.02	7.79	8.61	10	12.1	33.9	200	8V2C
SMAJP4KE9.1CA	7.78	8.65	9.55	1	13.4	30.6	50	9V1C
SMAJP4KE10CA	8.55	9.50	10.50	1	14.5	28.3	10	10C
SMAJP4KE11CA	9.40	10.50	11.60	1	15.6	26.3	5	11C
SMAJP4KE12CA	10.20	11.40	12.60	1	16.7	24.6	5	12C
SMAJP4KE13CA	11.10	12.40	13.70	1	18.2	22.5	1	13C
SMAJP4KE15CA	12.80	14.30	15.80	1	21.2	19.3	1	15C
SMAJP4KE16CA	13.60	15.20	16.80	1	22.5	18.2	1	16C
SMAJP4KE18CA	15.30	17.10	18.90	1	25.5	16.1	1	18C
SMAJP4KE20CA	17.10	19.00	21.00	1	27.7	14.8	1	20C
SMAJP4KE22CA	18.80	20.90	23.10	1	30.6	13.4	1	22C
SMAJP4KE24CA	20.50	22.80	25.20	1	33.2	12.3	1	24C
SMAJP4KE27CA	23.10	25.70	28.40	1	37.5	10.9	1	27C
SMAJP4KE30CA	25.60	28.50	31.50	1	41.4	9.9	1	30C
SMAJP4KE33CA	28.20	31.40	34.70	1	45.7	9.0	1	33C
SMAJP4KE36CA	30.80	34.20	37.80	1	49.9	8.2	1	36C
SMAJP4KE39CA	33.30	37.10	41.00	1	53.9	7.6	1	39C
SMAJP4KE43CA	36.80	40.90	45.20	1	59.3	6.9	1	43C
SMAJP4KE47CA	40.20	44.70	49.40	1	64.8	6.3	1	47C
SMAJP4KE51CA	43.60	48.50	53.60	1	70.1	5.8	1	51C
SMAJP4KE56CA	47.80	53.20	58.80	1	77.0	5.3	1	56C
SMAJP4KE62CA	53.00	58.90	65.10	1	85.0	4.8	1	62C
SMAJP4KE68CA	58.10	64.60	71.40	1	92.0	4.5	1	68C
SMAJP4KE75CA	64.10	71.30	78.80	1	103.0	4.0	1	75C
SMAJP4KE82CA	70.10	77.90	86.10	1	113.0	3.6	1	82C
SMAJP4KE91CA	77.80	86.50	95.50	1	125.0	3.3	1	91C
SMAJP4KE100CA	85.50	95.00	105.00	1	137.0	3.0	1	100C
SMAJP4KE110CA	94.00	105.00	116.00	1	152.0	2.7	1	110C
SMAJP4KE120CA	102.00	114.00	126.00	1	165.0	2.5	1	120C
SMAJP4KE130CA	111.00	124.00	137.00	1	179.0	2.3	1	130C
SMAJP4KE150CA	128.00	143.00	158.00	1	207.0	2.0	1	150C
SMAJP4KE160CA	136.00	152.00	168.00	1	219.0	1.9	1	160C
SMAJP4KE170CA	145.00	162.00	179.00	1	234.0	1.8	1	170C

Note:

\*For Bi-directional type having  $V_{WM}$  of 10 volts and less, the  $I_R$  limit is double.

\*The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$	PEAK PULSE CURRENT $I_{PP}$	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$	MARKING CODE
	(VOLTS)	MIN	MAX	$I_T$ (mA)	(VOLTS)	(AMPS)	$\mu A$	
SMAJP4KE180CA	154.00	171.00	189.00	1	246.0	1.7	1	180C
SMAJP4KE200CA	171.00	190.00	210.00	1	274.0	1.5	1	200C
SMAJP4KE220CA	185.00	209.00	231.00	1	328.0	1.3	1	220C
SMAJP4KE250CA	214.00	237.00	263.00	1	344.0	1.2	1	250C
SMAJP4KE300CA	256.00	285.00	315.00	1	414.0	1.0	1	300C
SMAJP4KE350CA	300.00	332.00	368.00	1	482.0	0.9	1	350C
SMAJP4KE400CA	342.00	380.00	420.00	1	548.0	0.8	1	400C
SMAJP4KE440CA	376.00	418.00	462.00	1	602.0	0.7	1	440C
SMAJP4KE480CA	408.00	456.00	504.00	1	658.0	0.6	1	480C
SMAJP4KE510CA	434.00	485.00	535.00	1	698.0	0.6	1	510C
SMAJP4KE530CA	477.00	503.50	556.50	1	725.0	0.6	1	530C
SMAJP4KE540CA	459.00	513.00	567.00	1	740.0	0.5	1	540C
SMAJP4KE550CA	495.00	522.50	577.50	1	760.0	0.5	1	550C

Note:

\*For Bi-directional type having  $V_{WM}$  of 10 volts and less, the  $I_R$  limit is double.

\*The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

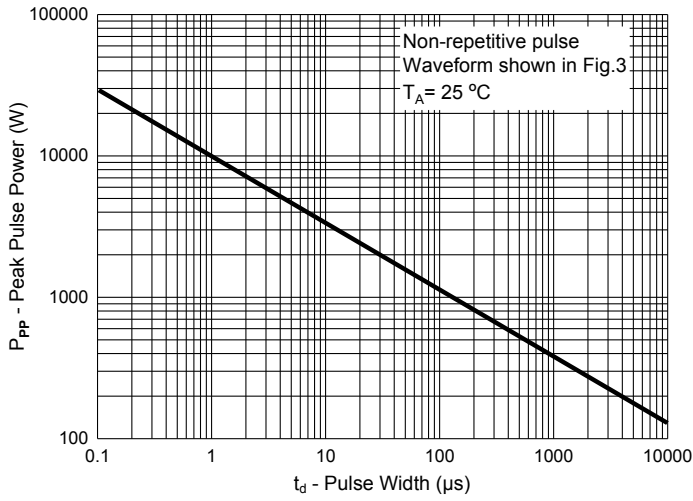


Fig. 2 - Typical Junction Capacitance

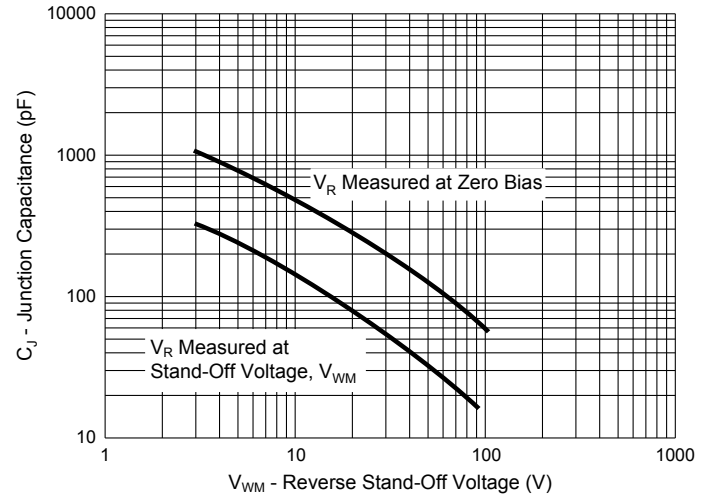


Fig. 3 - Pulse Waveform

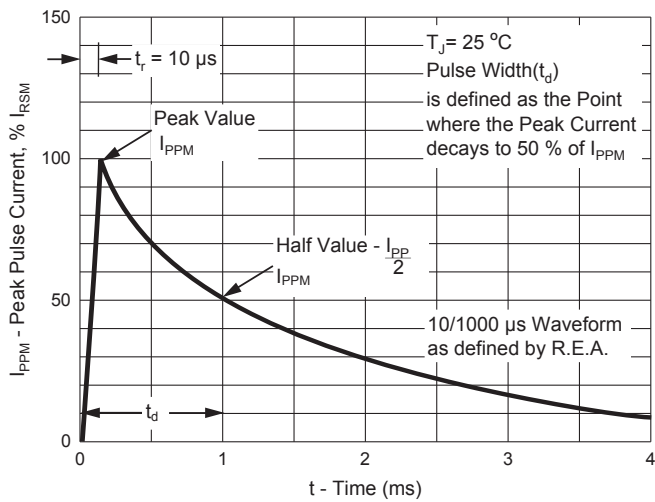
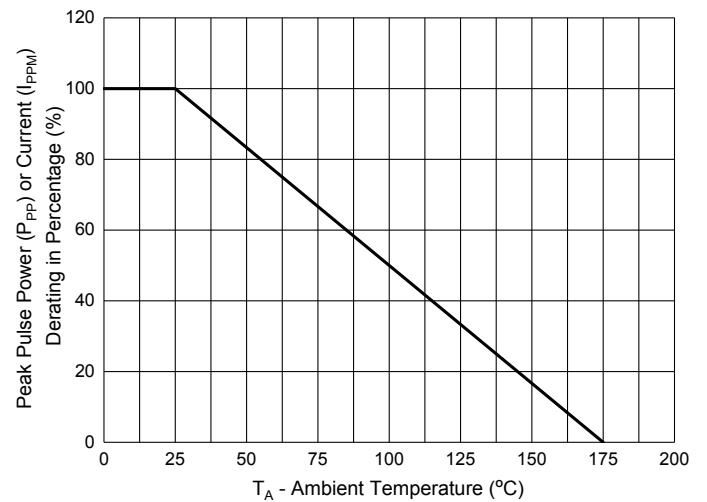


Fig. 4 - Pulse Derating Curve



## Ordering Information

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

**\*\*\*IMPORTANT NOTICE\*\*\***

*Micro Commercial Components Corp.* reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

**\*\*\*LIFE SUPPORT\*\*\***

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

**\*\*\*CUSTOMER AWARENESS\*\*\***

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.