

	E480232
---	----------------

Features

- IEC 61000-4-2 ESD 30kV(Air), 30kV (Contact)
- For Surface Mount Applications
- Unidirectional And Bidirectional
- Fast Response Time: Typical Less Than 1ps From 0V to BV Min
- High Temp Soldering: 260°C / 10 Seconds At Terminals
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMAJ5.0CA for 5% Tolerance
- 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)

Mechanical Data

- Polarity: Indicated by Cathode Band Except Bi-directional Types

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance: 30°C/W Junction to Lead
- Typical Thermal Resistance: 120°C/W Junction to Ambient

Peak Pulse Power Surge Current with a 10/1000µs Waveform	I_{PPM}	See the Table	Note 3
Peak Pulse Power Dissipation	P_{PPM}	400W(Min.)	Note 3,4,7
Steady State Power Dissipation	$P_{M(AV)}$	1.5 W	Note 3,6
Peak Forward Surge Current	I_{FSM}	40 A	8.3ms Single Half Sine-Wave Uni-directional Only ^(Note 5)

Note:

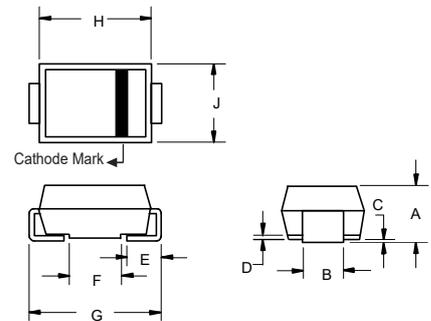
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.4.
4. Mounted on 5.0mm² copper pads to each terminal.
5. Mounted on 0.2" x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.
6. Lead temperature at $T_L = 75^\circ\text{C}$.
7. Peak pulse power waveform is 10/1000us.

Pin Configuration:



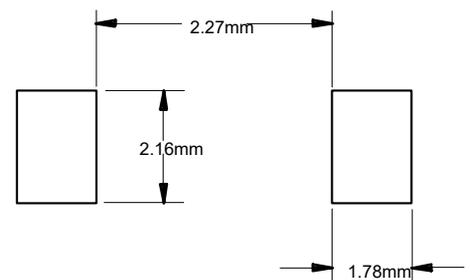
**400 Watt TVS
5.0 to 440 Volts**

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



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.075	0.090	1.90	2.30	
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



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	
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μ A)	UNI	BI
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	800	AE	WE
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	800	AG	WG
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500	AK	WK
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	200	AM	WM
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	12.9	31.0	100	AP	WP
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1	13.6	29.4	50	AR	WR
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.4	1	14.4	27.7	20	AT	WT
SMAJ9.0A	SMAJ9.0CA	9.0	10.0	11.1	1	15.4	26.0	10	AV	WV
SMAJ10A	SMAJ10CA	10	11.1	12.3	1	17.0	23.5	5	AX	WX
SMAJ11A	SMAJ11CA	11	12.2	13.5	1	18.2	22.0	1	AZ	WZ
SMAJ12A	SMAJ12CA	12	13.3	14.7	1	19.9	20.1	1	BE	XE
SMAJ13A	SMAJ13CA	13	14.4	15.9	1	21.5	18.6	1	BG	XG
SMAJ14A	SMAJ14CA	14	15.6	17.2	1	23.2	17.2	1	BK	XK
SMAJ15A	SMAJ15CA	15	16.7	18.5	1	24.4	16.4	1	BM	XM
SMAJ16A	SMAJ16CA	16	17.8	19.7	1	26.0	15.3	1	BP	XP
SMAJ17A	SMAJ17CA	17	18.9	20.9	1	27.6	14.5	1	BR	XR
SMAJ18A	SMAJ18CA	18	20.0	22.1	1	29.2	13.7	1	BT	XT
SMAJ20A	SMAJ20CA	20	22.2	24.5	1	32.4	12.3	1	BV	XV
SMAJ22A	SMAJ22CA	22	24.4	26.9	1	35.5	11.2	1	BX	XX
SMAJ24A	SMAJ24CA	24	26.7	29.5	1	38.9	10.3	1	BZ	XZ
SMAJ26A	SMAJ26CA	26	28.9	31.9	1	42.1	9.5	1	CE	YE
SMAJ28A	SMAJ28CA	28	31.1	34.4	1	45.4	8.8	1	CG	YG
SMAJ30A	SMAJ30CA	30	33.3	36.8	1	48.4	8.3	1	CK	YK
SMAJ33A	SMAJ33CA	33	36.7	40.6	1	53.3	7.5	1	CM	YM
SMAJ36A	SMAJ36CA	36	40.0	44.2	1	58.1	6.9	1	CP	YP
SMAJ40A	SMAJ40CA	40	44.4	49.1	1	64.5	6.2	1	CR	YR
SMAJ43A	SMAJ43CA	43	47.8	52.8	1	69.4	5.7	1	CT	YT
SMAJ45A	SMAJ45CA	45	50.0	55.3	1	72.7	5.5	1	CV	YV
SMAJ48A	SMAJ48CA	48	53.3	58.9	1	77.4	5.2	1	CX	YX
SMAJ51A	SMAJ51CA	51	56.7	62.7	1	82.4	4.9	1	CZ	YZ
SMAJ54A	SMAJ54CA	54	60.0	66.3	1	87.1	4.6	1	RE	ZE
SMAJ58A	SMAJ58CA	58	64.4	71.2	1	93.6	4.3	1	RG	ZG
SMAJ60A	SMAJ60CA	60	66.7	73.7	1	96.8	4.1	1	RK	ZK
SMAJ64A	SMAJ64CA	64	71.1	78.6	1	103	3.9	1	RM	ZM
SMAJ70A	SMAJ70CA	70	77.8	86.0	1	113	3.5	1	RP	ZP
SMAJ75A	SMAJ75CA	75	83.3	92.1	1	121	3.3	1	RR	ZR
SMAJ78A	SMAJ78CA	78	86.7	95.8	1	126	2.2	1	RT	ZT
SMAJ85A	SMAJ85CA	85	94.4	104	1	137	2.9	1	RV	ZV
SMAJ90A	SMAJ90CA	90	100	111	1	146	2.7	1	RX	ZX
SMAJ100A	SMAJ100CA	100	111	123	1	162	2.5	1	RZ	ZZ
SMAJ110A	SMAJ110CA	110	122	135	1	177	2.3	1	SE	VE
SMAJ120A	SMAJ120CA	120	133	147	1	193	2.1	1	SG	VG
SMAJ130A	SMAJ130CA	130	144	159	1	209	1.9	1	SK	VK
SMAJ150A	SMAJ150CA	150	167	185	1	243	1.6	1	SM	VM
SMAJ160A	SMAJ160CA	160	178	197	1	259	1.5	1	SP	VP
SMAJ170A	SMAJ170CA	170	189	209	1	275	1.5	1	SR	VR
SMAJ180A	SMAJ180CA	180	201	222	1	292	1.4	1	ST	VT
SMAJ200A	SMAJ200CA	200	224	247	1	324	1.2	1	SV	VV

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	
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μ A)	UNI	BI
SMAJ220A	SMAJ220CA	220	246	272	1	356	1.1	1	SX	VX
SMAJ250A	SMAJ250CA	250	279	309	1	405	1.0	1	SZ	VZ
SMAJ300A	SMAJ300CA	300	335	371	1	486	0.8	1	TE	UE
SMAJ350A	SMAJ350CA	350	391	432	1	567	0.7	1	TG	UG
SMAJ400A	SMAJ400CA	400	447	494	1	648	0.6	1	TK	UK
SMAJ440A	SMAJ440CA	440	492	543	1	713	0.6	1	TM	UM

For bi-directional type having V_{WM} of 10 Volts and less, the I_R limit is double.
 For parts without A, the V_{BR} is +10%.

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

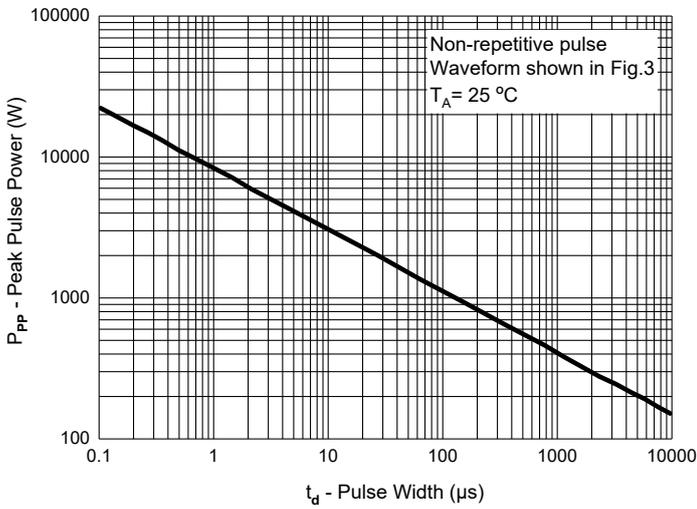


Fig. 2 - Typical Junction Capacitance

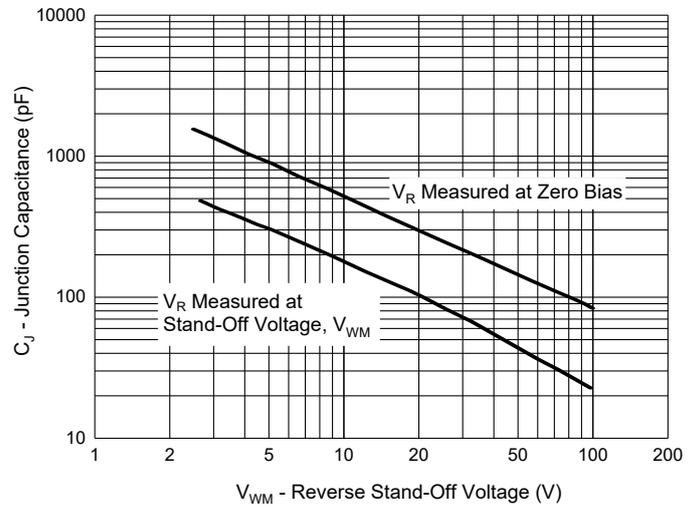


Fig. 3 - Pulse Waveform

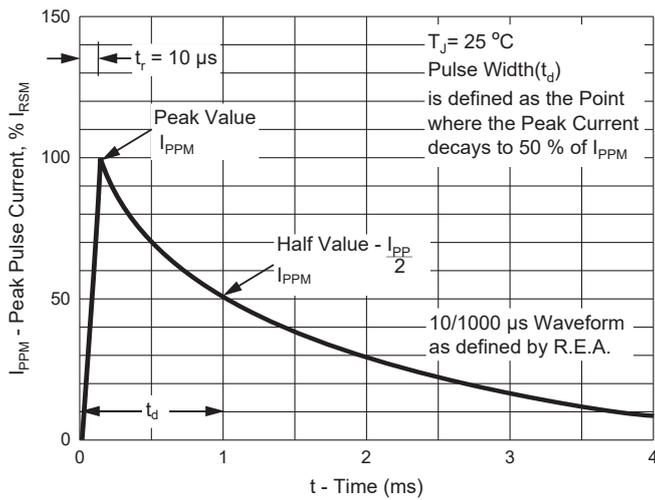


Fig. 4 - Pulse Derating Curve

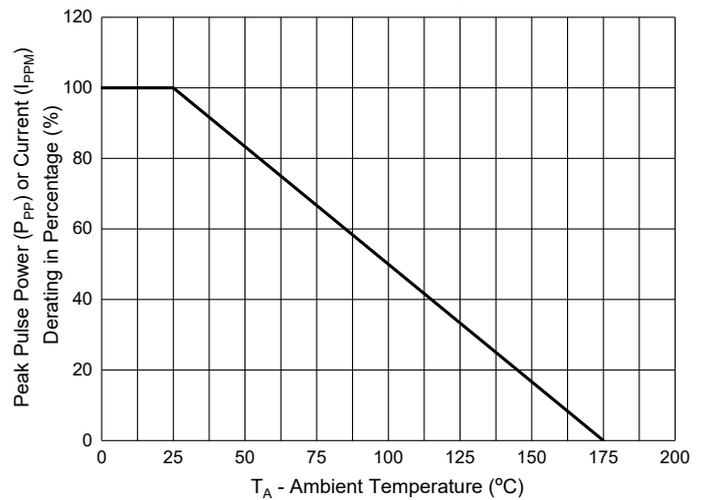
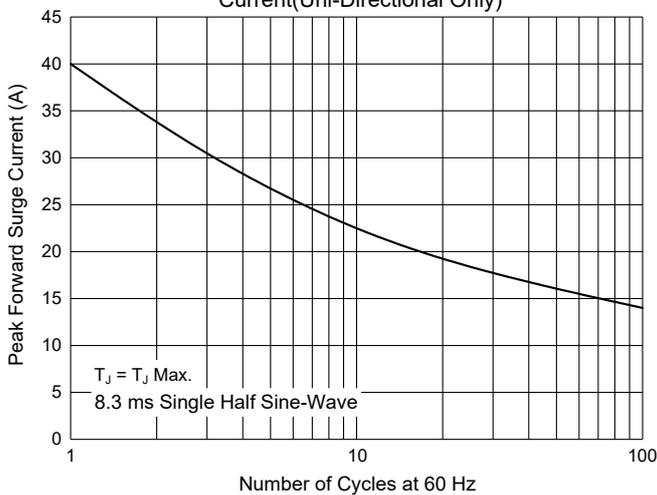


Fig. 5 - Maximum Non-Repetitive Peak Forward Surge Current(Uni-Directional Only)



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. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

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.