



SMAJ5.0A(CA) - SMAJ440A(CA)

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODE

VOLTAGE RANGE: 5.0 - 440 V

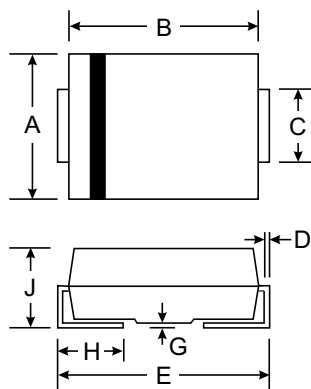
POWER: 400Watts

Features

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Material: UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: SMA/DO-214AC, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.064 grams (approx.)



SMA(DO-214AC)		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.10	0.20
H	0.76	1.52
J	2.01	2.62
All Dimensions in mm		

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$) (Note 1)	P_{PK}	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I_{FSM}	40	A
Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ (Notes 1, 2, & 3)	V_F	3.5	V
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
 2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
 3. Unidirectional units only.



TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(Uni)	(Bi)	V _{RWM} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMAJ5.0	SMAJ5.0C	5.0	6.40	7.55	10.0	9.6	41.7	800.0
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.25	10.0	9.2	43.5	800.0
SMAJ6.0	SMAJ6.0C	6.0	6.67	8.45	10.0	11.4	35.1	800.0
SMAJ6.0A	SMAJ6.0CA	6.0	6.67	7.67	10.0	10.3	38.8	800.0
SMAJ6.5	SMAJ6.5C	6.5	7.22	9.14	10.0	12.3	32.5	500.0
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	8.30	10.0	11.2	35.7	500.0
SMAJ7.0	SMAJ7.0C	7.0	7.78	9.86	10.0	13.3	30.1	200.0
SMAJ7.0A	SMAJ7.0CA	7.0	7.78	8.95	10.0	12.0	33.3	200.0
SMAJ7.5	SMAJ7.5C	7.5	8.33	10.67	1.0	14.3	28.0	100.0
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.58	1.0	12.9	31.0	100.0
SMAJ8.0	SMAJ8.0C	8.0	8.89	11.3	1.0	15.0	26.7	50.0
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	10.23	1.0	13.6	29.4	50.0
SMAJ8.5	SMAJ8.5C	8.5	9.44	11.92	1.0	15.9	25.2	20.0
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.82	1.0	14.4	27.8	20.0
SMAJ9.0	SMAJ9.0C	9.0	10.0	12.6	1.0	16.9	23.7	10.0
SMAJ9.0A	SMAJ9.0CA	9.0	10.0	11.5	1.0	15.4	26.0	10.0
SMAJ10	SMAJ10C	10	11.1	14.1	1.0	18.8	21.3	5.0
SMAJ10A	SMAJ10CA	10	11.1	12.8	1.0	17.0	23.5	5.0
SMAJ11	SMAJ11C	11	12.2	15.4	1.0	20.1	19.9	5.0
SMAJ11A	SMAJ11CA	11	12.2	14.0	1.0	18.2	22.0	5.0
SMAJ12	SMAJ12C	12	13.3	16.9	1.0	22.0	18.2	5.0
SMAJ12A	SMAJ12CA	12	13.3	15.3	1.0	19.9	20.1	5.0
SMAJ13	SMAJ13C	13	14.4	18.2	1.0	23.8	16.8	5.0
SMAJ13A	SMAJ13CA	13	14.4	16.5	1.0	21.5	18.6	5.0
SMAJ14	SMAJ14C	14	15.6	19.8	1.0	25.8	15.5	5.0
SMAJ14A	SMAJ14CA	14	15.6	17.9	1.0	23.2	17.2	5.0
SMAJ15	SMAJ15C	15	16.7	21.1	1.0	26.9	14.9	5.0
SMAJ15A	SMAJ15CA	15	16.7	19.2	1.0	24.4	16.4	5.0
SMAJ16	SMAJ16C	16	17.8	22.6	1.0	28.8	13.9	5.0
SMAJ16A	SMAJ16CA	16	17.8	20.5	1.0	26.0	15.4	5.0
SMAJ17	SMAJ17C	17	18.9	23.9	1.0	30.5	13.1	5.0
SMAJ17A	SMAJ17CA	17	18.9	21.7	1.0	27.6	14.5	5.0
SMAJ18	SMAJ18C	18	20.0	25.3	1.0	32.2	12.4	5.0
SMAJ18A	SMAJ18CA	18	20.0	23.3	1.0	29.2	13.7	5.0
SMAJ20	SMAJ20C	20	22.2	28.1	1.0	35.8	11.2	5.0
SMAJ20A	SMAJ20CA	20	22.2	25.5	1.0	32.4	12.3	5.0
SMAJ22	SMAJ22C	22	24.4	30.9	1.0	39.4	10.2	5.0
SMAJ22A	SMAJ22CA	22	24.4	28.0	1.0	35.5	11.3	5.0
SMAJ24	SMAJ24C	24	26.7	33.8	1.0	43.0	9.3	5.0



TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(Uni)	(Bi)	V _{RWM} (V)	V _{BR} MIN(V)	V _{BR} MAX(V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMAJ24A	SMAJ24CA	24	26.7	30.7	1.0	38.9	10.3	5.0
SMAJ26	SMAJ26C	26	28.9	36.6	1.0	46.6	8.6	5.0
SMAJ26A	SMAJ26CA	26	28.9	33.2	1.0	42.1	9.5	5.0
SMAJ28	SMAJ28C	28	31.1	39.4	1.0	50.0	8.0	5.0
SMAJ28A	SMAJ28CA	28	31.1	35.8	1.0	45.4	8.8	5.0
SMAJ30	SMAJ30C	30	33.3	42.2	1.0	53.5	7.5	5.0
SMAJ30A	SMAJ30CA	30	33.3	38.3	1.0	48.4	8.3	5.0
SMAJ33	SMAJ33C	33	36.7	46.5	1.0	59.0	6.8	5.0
SMAJ33A	SMAJ33CA	33	36.7	42.2	1.0	53.3	7.5	5.0
SMAJ36	SMAJ36C	36	40.0	50.7	1.0	64.3	6.2	5.0
SMAJ36A	SMAJ36CA	36	40.0	46.0	1.0	58.1	6.9	5.0
SMAJ40	SMAJ40C	40	44.4	56.3	1.0	71.4	5.6	5.0
SMAJ40A	SMAJ40CA	40	44.4	51.1	1.0	64.5	6.2	5.0
SMAJ43	SMAJ43C	43	47.7	60.5	1.0	76.7	5.2	5.0
SMAJ43A	SMAJ43CA	43	47.8	54.9	1.0	69.4	5.8	5.0
SMAJ45	SMAJ45C	45	50.0	63.3	1.0	80.3	5.0	5.0
SMAJ45A	SMAJ45CA	45	50.0	57.5	1.0	72.7	5.5	5.0
SMAJ48	SMAJ48C	48	53.3	67.5	1.0	85.5	4.7	5.0
SMAJ48A	SMAJ48CA	48	53.3	61.3	1.0	77.4	5.2	5.0
SMAJ51	SMAJ51C	51	56.7	71.8	1.0	91.1	4.4	5.0
SMAJ51A	SMAJ51CA	51	56.7	65.2	1.0	82.4	4.9	5.0
SMAJ54	SMAJ54C	54	60.0	76.0	1.0	96.3	4.2	5.0
SMAJ54A	SMAJ54CA	54	60.0	69.0	1.0	87.1	4.6	5.0
SMAJ58	SMAJ58C	58	64.4	81.6	1.0	103	3.9	5.0
SMAJ58A	SMAJ58CA	58	64.4	74.1	1.0	93.6	4.3	5.0
SMAJ60	SMAJ60C	60	66.7	84.5	1.0	107	3.7	5.0
SMAJ60A	SMAJ60CA	60	66.7	76.7	1.0	96.8	4.1	5.0
SMAJ64	SMAJ64C	64	71.1	90.1	1.0	114	3.5	5.0
SMAJ64A	SMAJ64CA	64	71.1	81.8	1.0	103	3.9	5.0
SMAJ70	SMAJ70C	70	77.8	98.6	1.0	125	3.2	5.0
SMAJ70A	SMAJ70CA	70	77.8	89.5	1.0	113	3.5	5.0
SMAJ75	SMAJ75C	75	83.0	105.7	1.0	134	3.0	5.0
SMAJ75A	SMAJ75CA	75	83.0	95.8	1.0	121	3.3	5.0
SMAJ78	SMAJ78C	78	86.0	109.8	1.0	139	2.9	5.0
SMAJ78A	SMAJ78CA	78	86.0	99.7	1.0	126	3.2	5.0



TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(Uni)	(Bi)	V _{RWM} (V)	V _{BR} MIN(V)	V _{BR} MAX(V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMAJ85	SMAJ85C	85	94.0	119.2	1.0	151	2.6	5.0
SMAJ85A	SMAJ85CA	85	94.0	108.2	1.0	137	2.9	5.0
SMAJ90	SMAJ90C	90	100	126.5	1.0	160	2.5	5.0
SMAJ90A	SMAJ90CA	90	100	115.5	1.0	146	2.7	5.0
SMAJ100	SMAJ100C	100	111	141.0	1.0	179	2.2	5.0
SMAJ100A	SMAJ100CA	100	111	128.0	1.0	162	2.5	5.0
SMAJ110	SMAJ110C	110	122	154.5	1.0	196	2.0	5.0
SMAJ110A	SMAJ110CA	110	122	140.5	1.0	177	2.3	5.0
SMAJ120	SMAJ120C	120	133	169.0	1.0	214	1.9	5.0
SMAJ120A	SMAJ120CA	120	133	153.0	1.0	193	2.1	5.0
SMAJ130	SMAJ130C	130	144	182.5	1.0	231	1.7	5.0
SMAJ130A	SMAJ130CA	130	144	165.5	1.0	209	1.9	5.0
SMAJ150	SMAJ150C	150	167	211.5	1.0	268	1.5	5.0
SMAJ150A	SMAJ150CA	150	167	192.5	1.0	243	1.6	5.0
SMAJ160	SMAJ160C	160	178	226.0	1.0	287	1.4	5.0
SMAJ160A	SMAJ160CA	160	178	205.0	1.0	259	1.5	5.0
SMAJ170	SMAJ170C	170	189	239.5	1.0	304	1.3	5.0
SMAJ170A	SMAJ170CA	170	189	217.5	1.0	275	1.5	5.0
SMAJ180	SMAJ180C	180	200	253.8	1.0	321	1.2	5.0
SMAJ180A	SMAJ180CA	180	200	230.4	1.0	290	1.4	5.0
SMAJ190	SMAJ190C	190	211	267.9	1.0	339	1.2	5.0
SMAJ190A	SMAJ190CA	190	211	243.2	1.0	306	1.3	5.0
SMAJ200	SMAJ200C	200	222	282.0	1.0	356	1.1	5.0
SMAJ200A	SMAJ200CA	200	222	256.0	1.0	322	1.2	5.0
SMAJ210	SMAJ210C	210	233	296.1	1.0	375	1.1	5.0
SMAJ210A	SMAJ210CA	210	233	268.8	1.0	339	1.2	5.0
SMAJ220	SMAJ220C	220	244	310.2	1.0	392	1.0	5.0
SMAJ220A	SMAJ220CA	220	244	281.6	1.0	355	1.1	5.0
SMAJ250	SMAJ250C	250	278	342.5	1.0	447	0.9	5.0
SMAJ250A	SMAJ250CA	250	278	309.0	1.0	403	1.0	5.0
SMAJ300	SMAJ300C	300	333	411.0	1.0	535	0.7	5.0
SMAJ300A	SMAJ300CA	300	333	371.0	1.0	484	0.8	5.0
SMAJ350	SMAJ350C	350	389	479.5	1.0	624	0.6	5.0
SMAJ350A	SMAJ350CA	350	389	432.0	1.0	565	0.7	5.0
SMAJ400	SMAJ400C	400	444	548.0	1.0	687	0.6	5.0
SMAJ400A	SMAJ400CA	400	444	494.0	1.0	645	0.6	5.0
SMAJ440	SMAJ440C	440	489	602.8	1.0	786	0.5	5.0
SMAJ440A	SMAJ440CA	440	489	543.0	1.0	710	0.6	5.0



Ratings and Characteristic Curves $T_A=25^\circ\text{C}$ unless otherwise noted

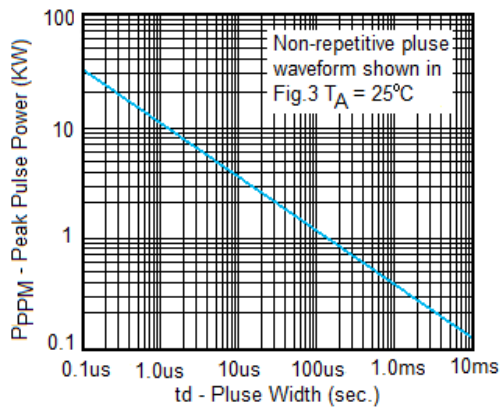


Fig. 1 Peak Pulse Power Rating

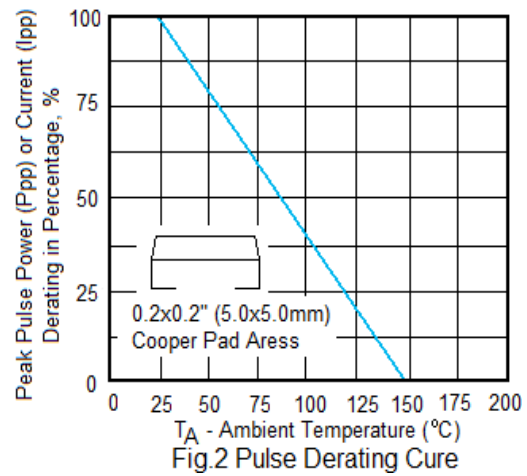


Fig. 2 Pulse Derating Curve

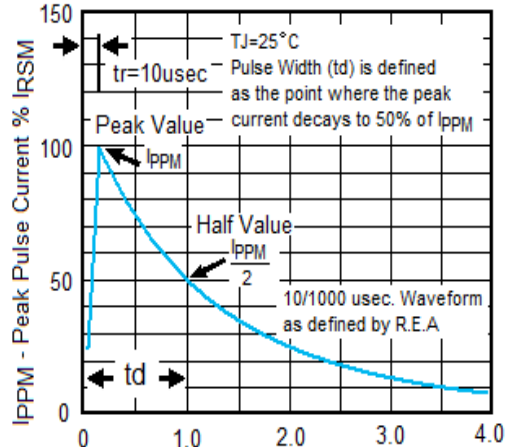


Fig. 3 Pulse Waveform

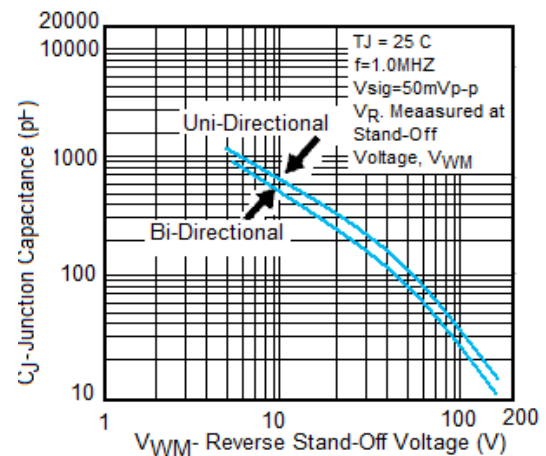


Fig. 4- Typical Junction Capacitance