DISTRIBUTEUR : JBG-METAFIX

Hottech Semiconductor

SMAJ5.0A- 188CA

TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- 400W Peak Pulse Power Dissipation
- 5.0V - 188V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0

DO-214AC (SMA)

MECHANICAL DATA

Cathode

- Case: SMA, Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202,Method 208
- Polarity Indicator: Cathode Band
  (Note: Bi-directional devices have no polarity indicator.)
- Marking: Marking Code See Page 2
- Weight: 0.06 grams (approx.)

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above TA = 25°C) (Note 1)	P_{PPM}	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
Typical thermal resistance, junction to ambient (Note 4)	$R_{\theta JA}$	120	°C/W
Typical thermal resistance, junction to lead	$R_{\theta JL}$	30	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°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.
4. Mounted on minimum recommended pad layout

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

DEVICE TYPE MODIFIED "J" BEND LEAD	DEVICE MARKING CODE		BREAKDOWN VOLTAGE VBR AT I_T (1) (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA) (3)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A) (2)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
	UNI	BI	MIN.	MAX.					
SMAJ5.0A	AE	WE	6.40	7.07	10	5.0	800	43.5	9.2
SMAJ6.0A	AG	WG	6.67	7.37	10	6.0	800	38.8	10.3
SMAJ6.5A	AK	WK	7.22	7.98	10	6.5	500	35.7	11.2
SMAJ7.0A	AM	WM	7.78	8.60	10	7.0	200	33.3	12.0
SMAJ7.5A	AP	WP	8.33	9.21	1.0	7.5	100	31.0	12.9
SMAJ8.0A	AR	WR	8.89	9.83	1.0	8.0	50	29.4	13.6
SMAJ8.5A	AT	WT	9.44	10.4	1.0	8.5	10	27.8	14.4
SMAJ9.0A	AV	WV	10.0	11.1	1.0	9.0	5.0	26.0	15.4
SMAJ10A	AX	WX	11.1	12.3	1.0	10	1.0	23.5	17.0
SMAJ11A	AZ	WZ	12.2	13.5	1.0	11	1.0	22.0	18.2
SMAJ12A	BE	XE	13.3	14.7	1.0	12	1.0	20.1	19.9
SMAJ13A	BG	XG	14.4	15.9	1.0	13	1.0	18.6	21.5
SMAJ14A	BK	XK	15.6	17.2	1.0	14	1.0	17.2	23.2
SMAJ15A	BM	XM	16.7	18.5	1.0	15	1.0	16.4	24.4
SMAJ16A	BP	XP	17.8	19.7	1.0	16	1.0	15.4	26.0
SMAJ17A	BR	XR	18.9	20.9	1.0	17	1.0	14.5	27.6
SMAJ18A	BT	XT	20.0	22.1	1.0	18	1.0	13.7	29.2
SMAJ20A	BV	XV	22.2	24.5	1.0	20	1.0	12.3	32.4
SMAJ22A	BX	XX	24.4	26.9	1.0	22	1.0	11.3	35.5
SMAJ24A	BZ	XZ	26.7	29.5	1.0	24	1.0	10.3	38.9
SMAJ26A	CE	YE	28.9	31.9	1.0	26	1.0	9.5	42.1
SMAJ28A	CG	YG	31.1	34.4	1.0	28	1.0	8.8	45.4
SMAJ30A	CK	YK	33.3	36.8	1.0	30	1.0	8.3	48.4
SMAJ33A	CM	YM	36.7	40.6	1.0	33	1.0	7.5	53.3
SMAJ36A	CP	YP	40.0	44.2	1.0	36	1.0	6.9	58.1
SMAJ40A	CR	YR	44.4	49.1	1.0	40	1.0	6.2	64.5
SMAJ43A	CT	YT	47.8	52.8	1.0	43	1.0	5.8	69.4
SMAJ45A	CV	YV	50.0	55.3	1.0	45	1.0	5.5	72.7
SMAJ48A	CX	YX	53.3	58.9	1.0	48	1.0	5.2	77.4
SMAJ51A	CZ	YZ	56.7	62.7	1.0	51	1.0	4.9	82.4
SMAJ54A	RE	ZE	60.0	66.3	1.0	54	1.0	4.6	87.1
SMAJ58A	RG	ZG	64.4	71.2	1.0	58	1.0	4.3	93.6
SMAJ60A	RK	ZK	66.7	73.7	1.0	60	1.0	4.1	96.8
SMAJ64A	RM	ZM	71.1	78.6	1.0	64	1.0	3.9	103
SMAJ70A	RP	ZP	77.8	86.0	1.0	70	1.0	3.5	113
SMAJ75A	RR	ZR	83.3	92.1	1.0	75	1.0	3.3	121
SMAJ78A	RT	ZT	86.7	95.8	1.0	78	1.0	3.2	126
SMAJ85A	RV	ZV	94.4	104	1.0	85	1.0	2.2	137
SMAJ90A	RX	ZX	100	111	1.0	90	1.0	2.1	146
SMAJ100A	RZ	ZZ	111	123	1.0	100	1.0	1.9	162
SMAJ110A	SE	VE	122	135	1.0	110	1.0	1.7	177
SMAJ120A	VG	VG	133	147	1.0	120	1.0	1.6	193
SMAJ130A	VK	VK	144	159	1.0	130	1.0	1.4	209
SMAJ150A	VM	VM	167	185	1.0	150	1.0	1.2	243
SMAJ160A	SP	VP	178	197	1.0	160	1.0	1.2	259
SMAJ170A	SR	VR	189	209	1.0	170	1.0	1.09	275
SMAJ188A	SS	VS	209	231	1.0	188	1.0	0.91	328

Notes (1) Pulse test: t_p ≤50 ms (2) Surge current waveform per fig. 3 and derate per fig. 2
(3) For bi-directional types having V_{WM} of 10 V and I_{ess}, the I_D limit is doubled
(4) All terms and symbols are consistent with ANSI/IEEE C62.35
(5) For the bi-directional SMAJ5.0CA, the maximum V_{BR} is 7.25 V
(6) V_F = 3.5 V max. at I_F = 25A (uni-directional only)
(7) For bi-directional use CA suffix (e.g. SMAJ100CA).

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Typical Characteristics

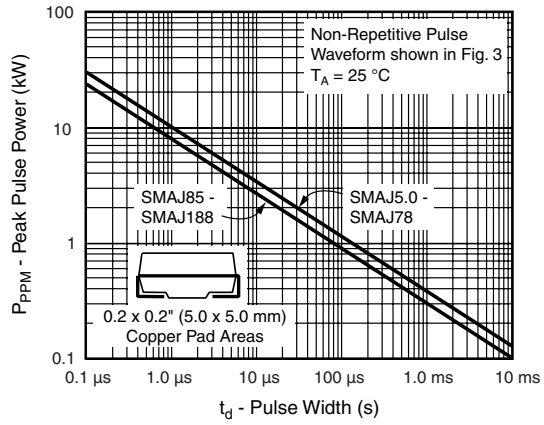

Figure 1. Peak Pulse Power Rating Curve

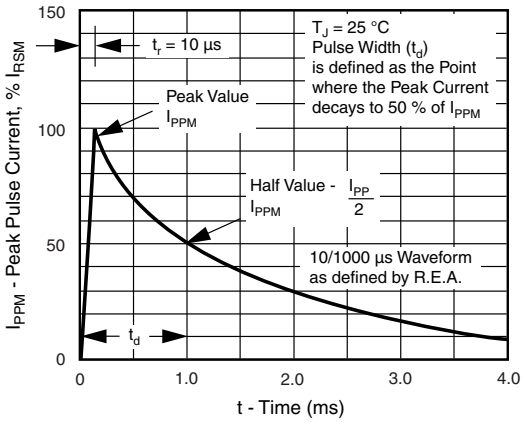

Figure 3. Pulse Waveform

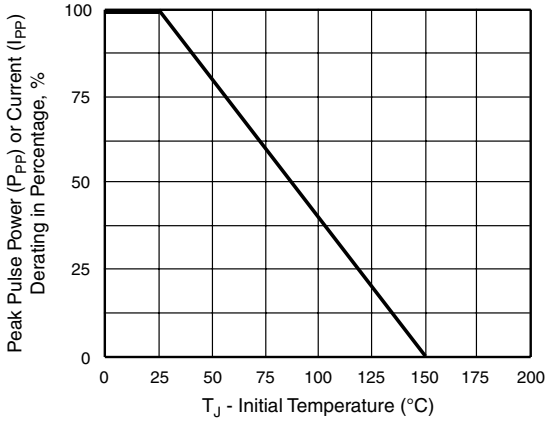

Figure 2. Pulse Power or Current vs. Initial Junction Temperature

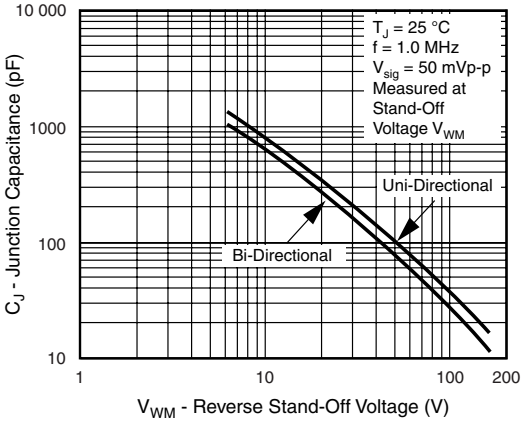

Figure 4. Typical Junction Capacitance

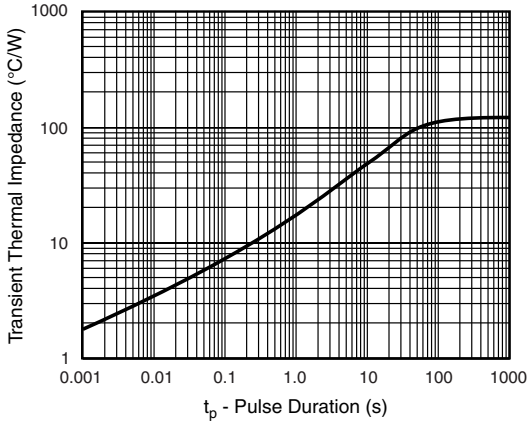

Figure 5. Typical Transient Thermal Impedance

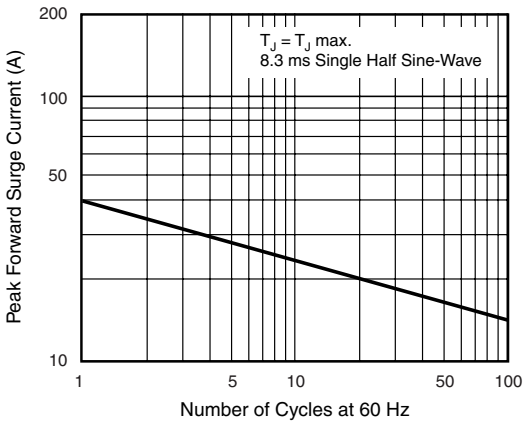

Figure 6. Maximum Non-Repetitive Forward Surge Current
Uni-Directional Only

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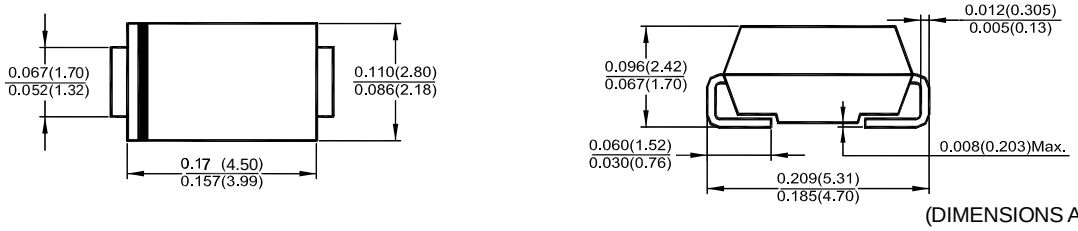
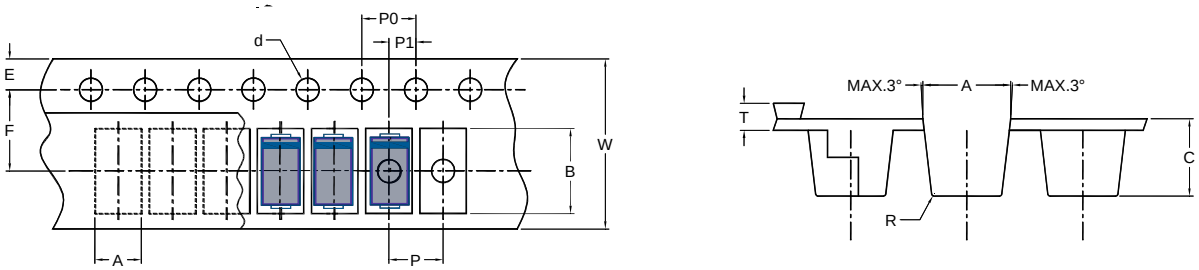
SMA Package Outline Dimensions



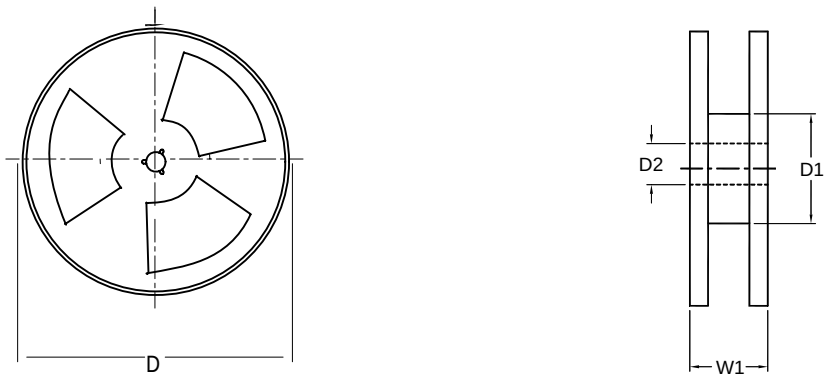
(DIMENSIONS ARE IN MILLIMETER)

SMA Embossed Carrier Tape



	DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P	P0	P1	T	W
SMA	3.0	5.4	2.4	1.5	1.5	5.65	4	4	2	0.3	12
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.1	±0.1	±0.1	±0.05	±0.2

SMA Reel



	DIMENSIONS ARE IN MILLIMETER			
REEL OPTION	D	D1	D2	W1
7'' DIA	178	50 min.	13	16.8
TOLERANCE	±2	±0.1	±0.5	±2