

VOLTAGE RANGE: 6.8 - 43V

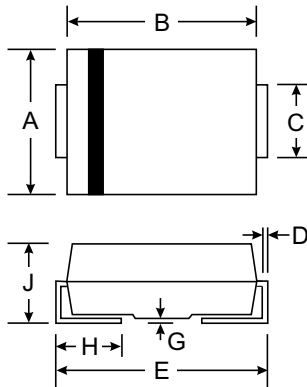
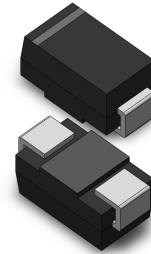
POWER: 400Watts

Features

- Junction passivation optimized design passivated anisotropic rectifier technology
 - $T_J = 185\text{ }^{\circ}\text{C}$ capability suitable for high reliability and automotive requirement
 - Available in uni-directional polarity only
 - 400 W peak pulse power capability with a
 - 10/1000 μs waveform, repetitive rate (duty cycle): 0.01 %
 - Excellent clamping capability
 - Very fast response time
 - Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of $260\text{ }^{\circ}\text{C}$

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

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μs waveform ⁽¹⁾⁽²⁾ (fig. 3)	P_{PPM}	400	W
Peak power pulse current with a 10/1000 μs waveform ⁽¹⁾ (fig. 1)	I_{PPM}	See next table	A
Power dissipation at $T_A = 25\text{ }^{\circ}\text{C}$ ⁽⁴⁾	P_D	1.0	W
Peak forward surge current 8.3 ms single half sine-wave ⁽³⁾	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A ⁽³⁾	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 185	$^{\circ}\text{C}$

Notes

⁽¹⁾ Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25\text{ }^{\circ}\text{C}$ per fig. 2

⁽²⁾ Mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads attached to each terminal

⁽³⁾ Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum

⁽⁴⁾ Mounted on minimum recommended pad layout

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

DEVICE	BREAKDOWN VOLTAGE $V_{BR}^{(1)}$ AT I_T (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_R (μA)	$T_J = 150^\circ\text{C}$ MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM PEAK PULSE SURGE CURRENT $I_{PPM}^{(2)}$ (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
	MIN.	MAX.						
TPSMA6.8CA	6.12	7.48	10	5.50	300	1000	37.0	10.8
TPSMA6.8A	6.45	7.14	10	5.80	300	1000	38.1	10.5
TPSMA7.5CA	6.75	8.25	10	6.05	150	500	34.2	11.7
TPSMA7.5A	7.13	7.88	10	6.40	150	500	35.4	11.3
TPSMA8.2CA	7.38	9.02	10	6.63	50	200	32.0	12.5
TPSMA8.2A	7.79	8.61	10	7.02	50	200	33.1	12.1
TPSMA9.1CA	8.19	10.00	1.0	7.37	10	50	29.0	13.8
TPSMA9.1A	8.65	9.55	1.0	7.78	10	50	29.9	13.0
TPSMA10CA	9.00	11.00	1.0	8.10	5.0	20	26.7	15.0
TPSMA10A	9.50	10.50	1.0	8.65	5.0	20	27.6	14.5
TPSMA11CA	9.90	12.10	1.0	8.92	1.0	5.0	24.7	16.2
TPSMA11A	10.50	11.60	1.0	9.40	1.0	5.0	25.6	15.6
TPSMA12CA	10.80	13.20	1.0	9.72	1.0	5.0	23.1	17.3
TPSMA12A	11.40	12.60	1.0	10.20	1.0	5.0	24.0	16.7
TPSMA13CA	11.70	14.30	1.0	10.50	1.0	5.0	21.1	19.0
TPSMA13A	12.40	13.70	1.0	11.10	1.0	5.0	22.0	18.2
TPSMA15CA	13.50	16.30	1.0	12.10	1.0	5.0	18.2	22.0
TPSMA15A	14.30	15.80	1.0	12.80	1.0	5.0	18.9	21.2
TPSMA16CA	14.40	17.60	1.0	12.90	1.0	5.0	17.0	23.5
TPSMA16A	15.20	16.80	1.0	13.60	1.0	5.0	17.8	22.0
TPSMA18CA	16.20	19.80	1.0	14.50	1.0	5.0	15.1	26.5
TPSMA18A	17.10	18.90	1.0	15.30	1.0	5.0	15.9	25.5
TPSMA20CA	18.00	22.00	1.0	16.20	1.0	5.0	13.7	29.1
TPSMA20A	19.00	21.00	1.0	17.10	1.0	5.0	14.4	27.7
TPSMA22CA	19.80	24.20	1.0	17.80	1.0	5.0	12.5	31.9
TPSMA22A	20.90	23.10	1.0	18.80	1.0	5.0	13.1	30.6
TPSMA24CA	21.60	26.40	1.0	19.40	1.0	5.0	11.5	34.7
TPSMA24A	22.80	25.20	1.0	20.50	1.0	5.0	12.0	33.2
TPSMA27CA	24.30	29.70	1.0	21.80	1.0	5.0	10.2	39.1
TPSMA27A	25.70	28.40	1.0	23.10	1.0	5.0	10.7	37.5
TPSMA30CA	27.00	33.00	1.0	24.30	1.0	5.0	9.2	43.5
TPSMA30A	28.50	31.50	1.0	25.60	1.0	5.0	9.7	41.4
TPSMA33CA	29.70	36.30	1.0	26.80	1.0	5.0	8.4	47.0
TPSMA33A	31.40	34.70	1.0	28.20	1.0	5.0	8.8	45.7
TPSMA36CA	32.40	39.60	1.0	29.10	1.0	5.0	7.7	52.0
TPSMA36A	34.20	37.80	1.0	30.80	1.0	5.0	8.0	49.9
TPSMA39CA	35.10	42.90	1.0	31.60	1.0	5.0	7.1	56.4
TPSMA39A	37.10	41.00	1.0	33.30	1.0	5.0	7.4	53.9
TPSMA43CA	38.70	47.30	1.0	34.80	1.0	5.0	6.5	61.9
TPSMA43A	40.90	45.20	1.0	36.80	1.0	5.0	6.7	59.3

Notes

(1) V_{BR} measured after I_T applied for 300 μs , I_T = square wave pulse or equivalent

(2) Surge current waveform per fig. 3 and derated per fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE C62.35

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

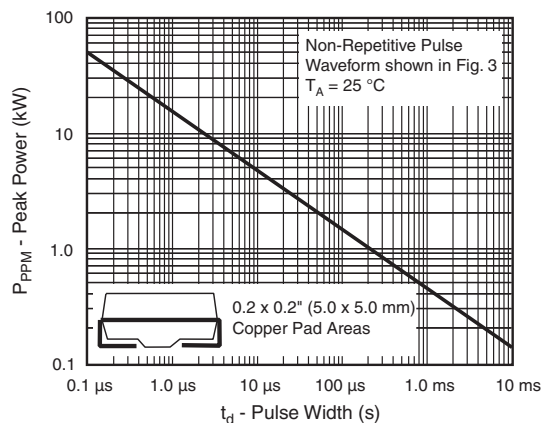


Figure 1. Peak Pulse Power Rating Curve

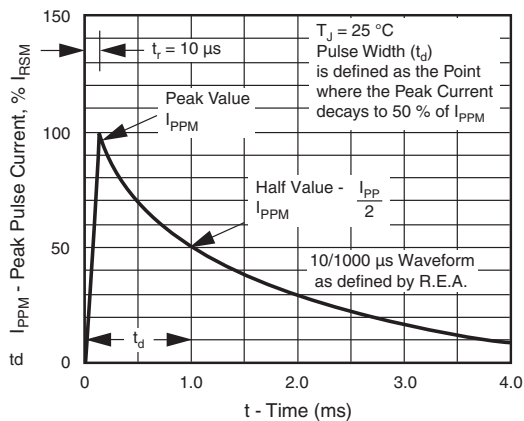


Figure 3. Pulse Waveform

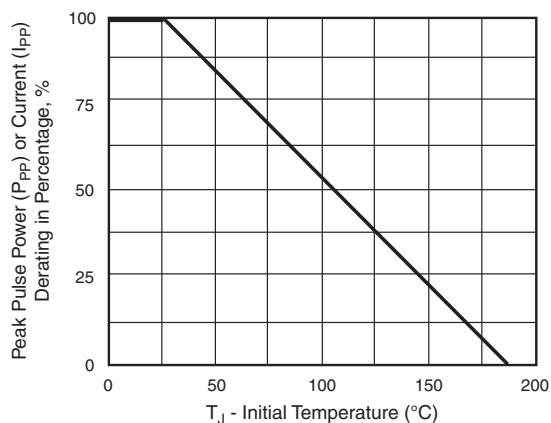


Figure 2. Pulse Power or Current vs. Initial Junction Temperature

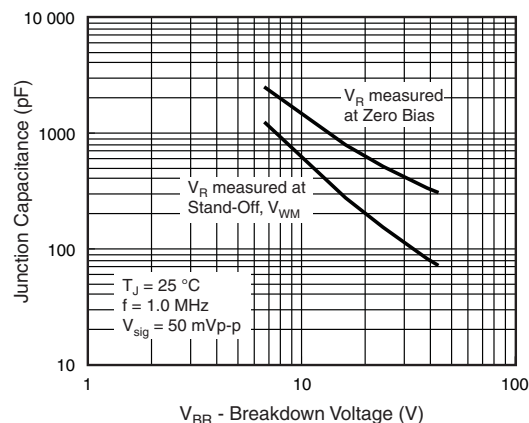


Figure 4. Typical Junction Capacitance

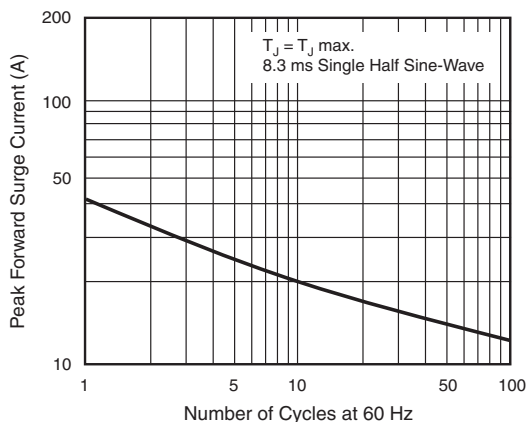


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current