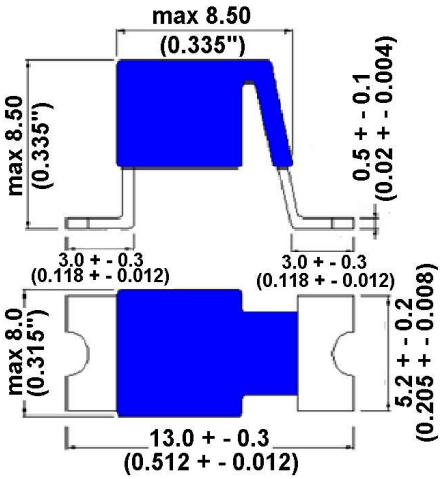
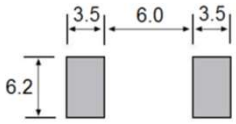
SMD15KPA SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR
STAND-OFF VOLTAGE-17 TO 280 Volts
15000 Watt Peak Pulse Power



Dimensions in millimeters and (inches)



Recommended mounting footprint(mm)

FEATURES

◎ RoHS compliant E4
◎ Typical maximum temperature coefficient △VBR=0.1%xVBR@25℃x△T
◎ 15000W peak pulse power capability on 10/1000us waveform
◎ Excellent clamping capability
◎ Repetition rate(duty cycle) : 0.05%
◎ Low incremental surge resistance
◎ Fast response time: typically less than 1.0ps from 0 Volts to BV,
◎ Silver plated Lead

MECHANICAL DATA

Case: Epoxy powder over glass passivated junction
Terminal: Solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes positive end (cathode) except Bipolar
Mounting Position: Any
Weight: 0.033 ounce, 1.2 grams

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μs waveform	P_{PPM}	Minimum 15000	Watts
Peak Pulse Current of on 10/1000 μs waveform	I_{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current,1/20 second / 25℃ (JEDEC Method)	I_{FSM}	400	Amps
Operating junction and Storage Temperature Range	T_J , T_{STG}	-55 to + 150	℃

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SMDSMD15KPA PART NUMBER		Marking Code		REVERSE STAND- OFF VOLTAGE V_{RWM}(V)	BREAKDOWN VOLTAGE V_{BR}(V) MIN. @I_T	TEST CURRENT I_T (mA)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ V_{RWM} I_R(μ A)	MAXIMUN CLAMPING VOLTAGE @I_{PP} V_C (V)
UNI-POLAR	BI-POLAR	Uni	Bi						
SMD15KPA17A	SMD15KPA17CA	UA	BA	17	18.99	50	515.4	5000	29.3
SMD15KPA18A	SMD15KPA18CA	UB	BB	18	20.11	50	488.7	5000	30.9
SMD15KPA20A	SMD15KPA20CA	UC	BC	20	22.34	20	440.2	1500	34.3
SMD15KPA22A	SMD15KPA22CA	UD	BD	22	24.57	10	407.0	500	37.1
SMD15KPA24A	SMD15KPA24CA	UE	BE	24	26.81	5	371.0	150	40.7
SMD15KPA26A	SMD15KPA26CA	UF	BF	26	29.04	5	343.2	50	44.0
SMD15KPA28A	SMD15KPA28CA	UG	BG	28	31.28	5	317.9	25	47.5
SMD15KPA30A	SMD15KPA30CA	UH	BH	30	33.51	5	297.8	15	50.7
SMD15KPA33A	SMD15KPA33CA	UJ	BJ	33	36.9	5	276.1	10	54.7
SMD15KPA36A	SMD15KPA36CA	UK	BK	36	40.2	5	252.5	10	59.8
SMD15KPA40A	SMD15KPA40CA	UL	BL	40	44.7	5	229.5	10	65.8
SMD15KPA43A	SMD15KPA43CA	UM	BM	43	48.0	5	216.3	10	69.8
SMD15KPA45A	SMD15KPA45CA	UN	BN	45	50.3	5	206.3	10	73.2
SMD15KPA48A	SMD15KPA48CA	UP	BP	48	53.6	5	194.3	10	77.7
SMD15KPA51A	SMD15KPA51CA	UQ	BQ	51	57.0	5	182.1	10	82.9
SMD15KPA54A	SMD15KPA54CA	UR	BR	54	60.3	5	172.2	10	87.7
SMD15KPA58A	SMD15KPA58CA	US	BS	58	64.8	5	161.0	10	93.8
SMD15KPA60A	SMD15KPA60CA	UT	BT	60	67.0	5	155.0	10	97.4
SMD15KPA64A	SMD15KPA64CA	UU	BU	64	71.5	5	144.9	10	104.2
SMD15KPA70A	SMD15KPA70CA	UV	BV	70	78.2	5	132.9	10	113.6
SMD15KPA75A	SMD15KPA75CA	UW	BW	75	83.8	5	123.8	10	122.0
SMD15KPA78A	SMD15KPA78CA	UX	BX	78	87.1	5	119.7	10	126.1
SMD15KPA85A	SMD15KPA85CA	UY	BY	85	94.9	5	109.7	10	137.6
SMD15KPA90A	SMD15KPA90CA	UZ	BZ	90	100.5	5	103.7	10	145.6
SMD15KPA100A	SMD15KPA100CA	DA	CA	100	111.7	5	93.6	10	161.3
SMD15KPA110A	SMD15KPA110CA	DB	CB	110	122.9	5	84.5	10	178.6
SMD15KPA120A	SMD15KPA120CA	DC	CC	120	134.0	5	78.5	10	192.3
SMD15KPA130A	SMD15KPA130CA	DD	CD	130	145.2	5	72.5	10	208.3
SMD15KPA150A		DE		150	167.6	5	62.4	10	241.9
SMD15KPA160A		DF		160	178.7	5	58.4	10	258.6
SMD15KPA170A		DG		170	189.9	5	55.4	10	272.7
SMD15KPA180A		DH		180	201.1	5	52.3	10	288.5
SMD15KPA200A		DJ		200	223.4	5	47.3	10	319.1
SMD15KPA220A		DK		220	245.7	5	42.4	10	356.0
SMD15KPA240A		DL		240	268.1	5	39.3	10	384.6
SMD15KPA260A		DM		260	290.4	5	36.2	10	416.7
SMD15KPA280A		DN		280	312.8	5	33.2	10	454.5

For bidirectional type having Vrwm of 30 volts and less, the IR limit is double.

For parts without A , the V_{BR} is $\pm$ 10%

RATINGS AND CHARACTERISTIC CURVES

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating

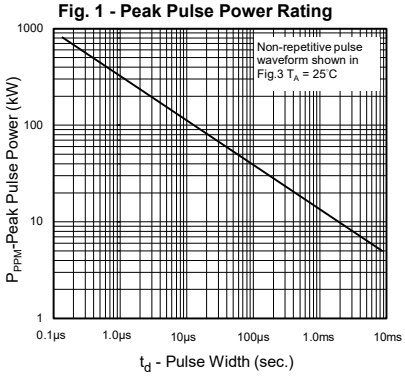


Fig.2 - Pulse Derating Curve

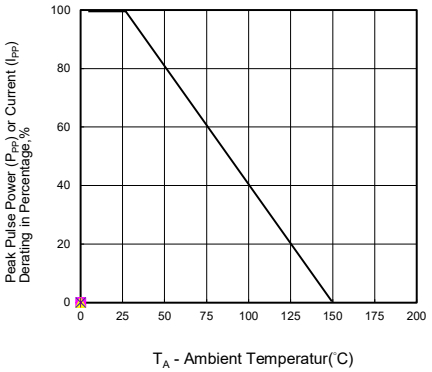


Fig.3 - Test Pulse Waveform

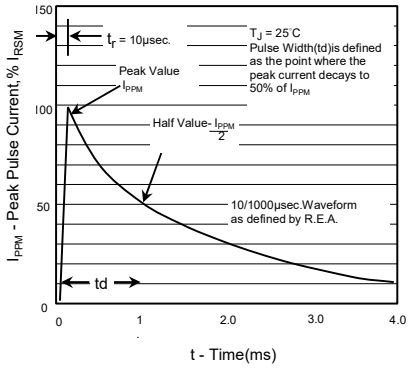


Fig. 4 - Typical Junction Capacitance

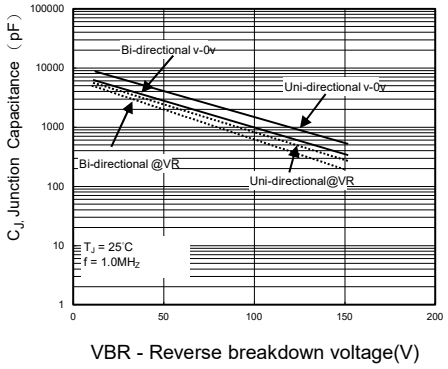


Fig. 5 - Steady State Power Derating Curve

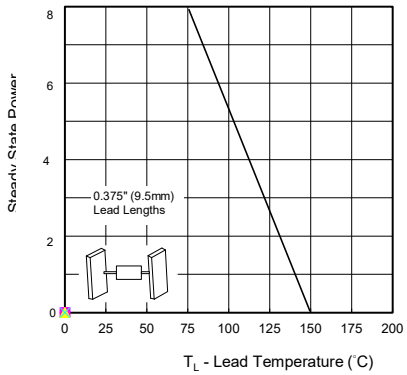
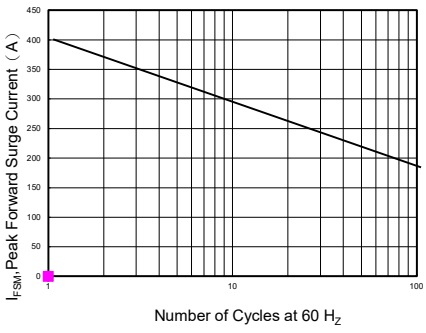


Fig.6 - Maximum Non-repetitive Forward Surge current



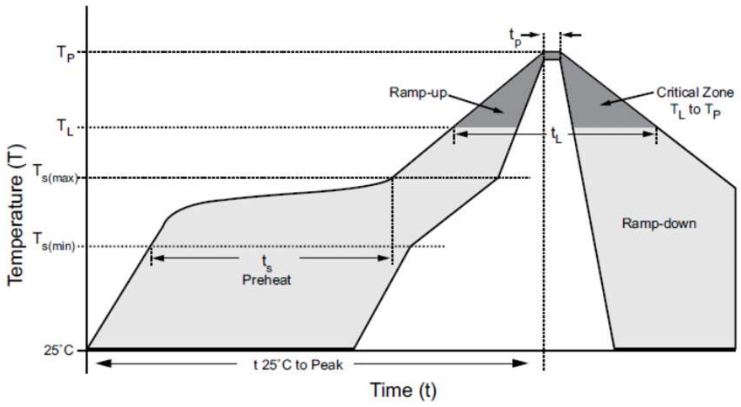
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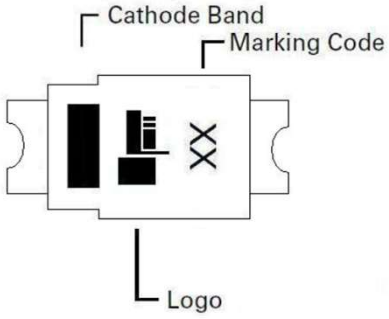
Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150℃
	-Temperature Max ($T_{s(max)}$)	200℃
	-Time (min to max) (t_s)	60 -120 secs
Average ramp up rate(Liquidus Temp(T_L) to peak		3℃/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/second max
Reflow	-Temperature Min (T_L)	217℃
	Time (t_L) maintained above T_L	60 - 150 seconds
Peak temperature(T_P)		245 $^{+0/-5}$℃
Time within 5℃ of actual peak Temperature(t_p)		20 - 40 seconds
Ramp-down Rate		6℃/second max
Time 2 5℃ to peak Temperature(T_p)		8 minutes Max.

Soldering Profile



Part Marking System



Packing

Part number	Quantity	Remark
SMD15KPAxxx	20	Bulk packing