

Glass Passivated Junction Transient Voltage Suppressor

Stand-Off Voltage - 17 to 280 Volts

15000 Watt Peak Pulse Power

Features

- Plastic package
- Glass passivated chip junction
- 15000W Peak Pulse Power capability on 10/1000 μ s 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 B_V min.
- High temperature soldering guaranteed: 265°C/10 seconds/.375", (9.5mm) lead length, 5lbs., (2.3kg) tension
- Pb-free plated



Mechanical Data

- **Case:** Molded plastic over glass passivated junction
- **Terminals:** Solderable per MIL-STD-750, Method 2026
- **Polarity:** Color band denotes positive end (cathode) except Bipolar
- **Mounting Position:** Any
- **Weight:** 0.07 ounce, 2.5 grams

Devices For Bipolar Application

- For Bidirectional use C or CA Suffix for types 15KPA17 thru types 15KPA280 (e.g. 15KPA17C , 15KPA280CA)
- Electrical characteristics apply in both directions

Maximum Ratings And Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

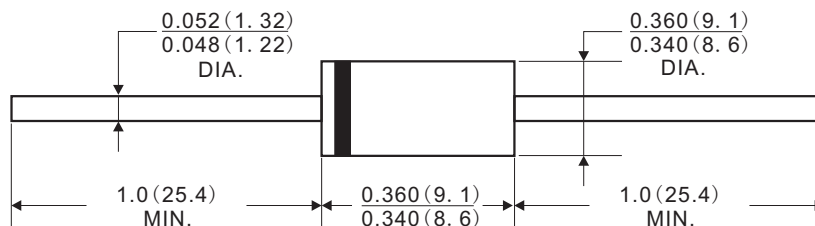
RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note 1, FIG.1)	P_{PPM}	Minimum 15000	Watts
Peak Pulse Current of on 10/1000 μ s waveform (Note 1, FIG.3)	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Lead lengths. 375", (9.5mm) (Note 2)	$P_{M(AV)}$	8	Watts
Peak Forward Surge Current, 1/20 second / 25°C (JEDEC Method)	I_{FSM}	400	Amps
Operating junction and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

Notes :

- 1.Non-repetitive current pulse , per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2 .
- 2.Mounted on Copper Pad area of 0.8×0.8" (20×20mm) per Fig. 5
- 3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

Dimensions

Case Style P600



Dimensions in inches and (millimeters)

Electrical Characteristics

TABLE1

“*”Stand for commonly used models

15KPA Part Number		Reverse Stand-Off Voltage	Breakdown Voltage @IT	Breakdown Voltage @IT	Test Current	Maximum Clamping Voltage @Ipp	Peak Pulse Current	Reverse Leakage @VRWM
UNI-Polar	BI-Polar	VRWM(V)	VBR(V)Min.	VBR(V)Max.	IT(mA)	Vc(V)	Ipp(A)	IR(μA)
15KPA17A	15KPA17CA	17	18.88	20.80	50	29.3	515.4	5000
15KPA18A	15KPA18CA	18	20.00	22.20	50	30.9	488.7	5000
15KPA20A	15KPA20CA	20	22.20	24.60	20	34.3	440.2	1500
15KPA22A	15KPA22CA	22	24.40	27.00	10	37.1	407.0	500
15KPA24A	15KPA24CA	24	26.60	29.40	5	40.7	371.0	150
15KPA26A	15KPA26CA	26	28.80	31.80	5	44.0	343.2	50
15KPA28A	15KPA28CA	28	31.10	34.40	5	47.5	317.9	25
15KPA30A	15KPA30CA	30	33.30	36.90	5	50.7	297.8	15
15KPA33A	* 15KPA33CA	33	36.60	40.50	5	54.7	276.1	2
15KPA36A	15KPA36CA	36	39.90	44.10	5	59.8	252.5	2
15KPA40A	15KPA40CA	40	44.40	49.10	5	65.8	229.5	2
15KPA43A	15KPA43CA	43	47.80	52.80	5	69.8	216.3	2
15KPA45A	15KPA45CA	45	50.10	55.50	5	72.8	207.4	2
15KPA48A	15KPA48CA	48	53.40	59.10	5	77.7	194.3	2
15KPA51A	15KPA51CA	51	56.70	62.70	5	82.9	182.1	2
15KPA54A	15KPA54CA	54	60.00	66.30	5	87.7	172.2	2
15KPA58A	15KPA58CA	58	64.40	71.20	5	93.8	161.0	2
15KPA60A	15KPA60CA	60	66.60	73.50	5	97.4	155.0	2
15KPA64A	15KPA64CA	64	71.10	78.60	5	104.2	144.9	2
15KPA70A	15KPA70CA	70	77.80	86.00	5	113.6	132.9	2
15KPA75A	15KPA75CA	75	83.30	92.10	5	122.0	123.8	2
15KPA78A	15KPA78CA	78	86.70	95.70	5	126.1	119.7	2

Notes :

- 1.For bidirectional type having VRWM of 10 volts and less, the IR limit is double
- 2.For parts with A , the VBR is ± 5%

Electrical Characteristics

TABLE1

***Stand for commonly used models

15KPA Part Number		Reverse Stand-Off Voltage	Breakdown Voltage @IT	Breakdown Voltage @IT	Test Current	Maximum Clamping Voltage @Ipp	Peak Pulse Current	Reverse Leakage @VRWM
UNI-Polar	BI-Polar	VRWM(V)	VBR(V)Min.	VBR(V)Max.	IT(mA)	Vc(V)	Ipp(A)	IR(μA)
15KPA85A	15KPA85CA	85	94.40	104.00	5	137.6	109.7	2
15KPA90A	15KPA90CA	90	99.90	110.40	5	145.6	103.7	2
15KPA100A	15KPA100CA	100	110.00	123.00	5	161.3	93.6	2
15KPA110A	15KPA110CA	110	122.00	135.00	5	178.6	84.5	2
15KPA120A	15KPA120CA	120	133.20	147.30	5	192.3	78.5	2
15KPA130A	15KPA130CA	130	144.00	159.00	5	208.3	72.5	2
15KPA150A	15KPA150CA	150	167.00	185.00	5	241.9	62.4	2
15KPA160A	15KPA160CA	160	178.00	197.00	5	258.6	58.4	2
15KPA170A	15KPA170CA	170	189.00	209.00	5	272.7	55.4	2
15KPA180A	15KPA180CA	180	200.10	221.10	5	288.5	52.3	2
15KPA200A	15KPA200CA	200	222.00	247.00	5	319.1	47.3	2
15KPA220A	15KPA220CA	220	244.00	272.00	5	428.6	35.2	2
15KPA240A	15KPA240CA	240	267.40	293.90	5	384.6	39.3	2
15KPA260A	15KPA260CA	260	289.60	318.20	5	416.7	36.2	2
15KPA280A	15KPA280CA	280	312.10	342.50	5	454.5	33.2	2

Notes :

- 1.For bidirectional type having VRWM of 10 volts and less, the IR limit is double
- 2.For parts with A , the VBR is ± 5%

Rating And Characteristic Curves

Fig.1 Peak Pulse Power Rating Curve

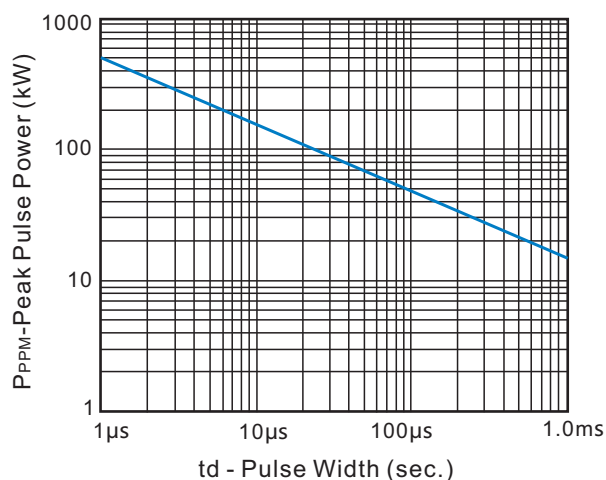
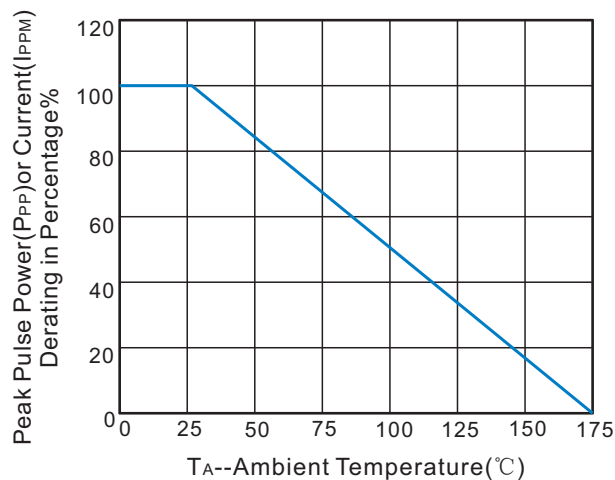


Fig.2 Pulse Derating Curve



Rating And Characteristic Curves

Fig.3 Pulse Waverform

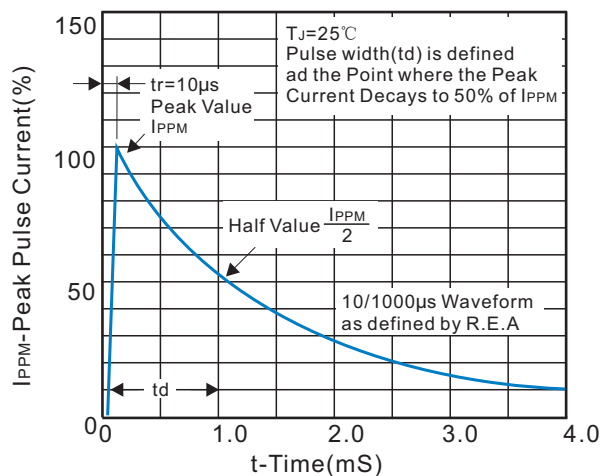


Fig.4 Typical Junction Capacitance

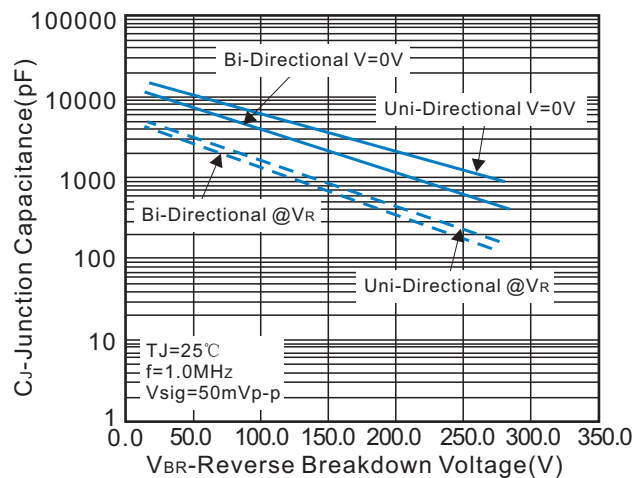


Fig.5 Steady State Power Dissipation Derating Curve

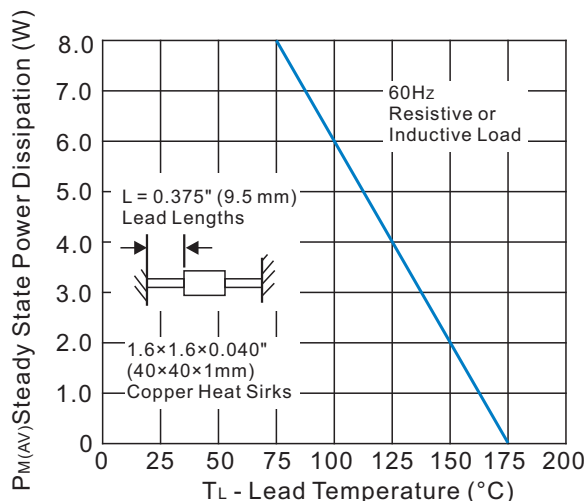
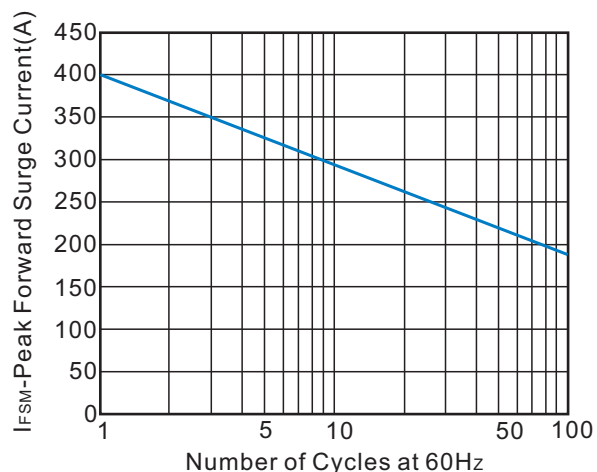


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

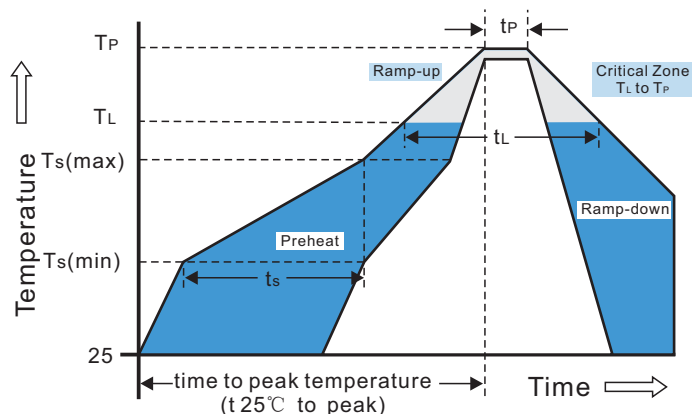


Recommended Soldering Conditions

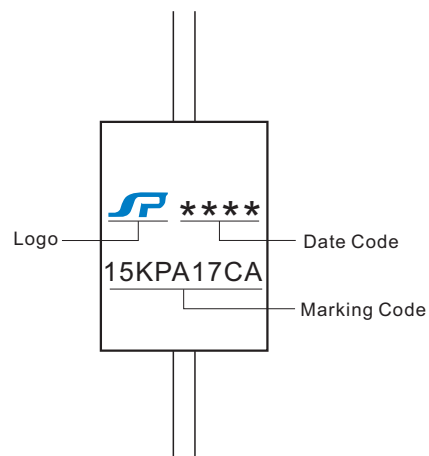
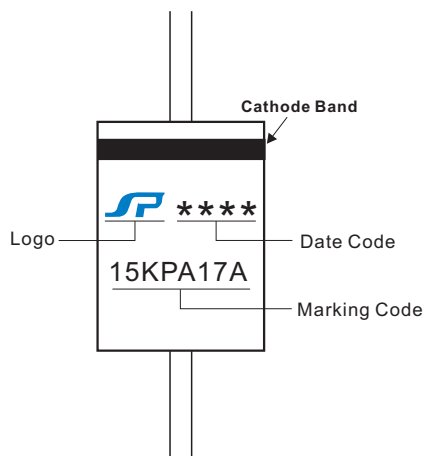
Recommended Conditions

Reflow Condition		Pb-Free assembly (see Fig.1)
Pre Heat	-Temperature Min($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time(Min to Max)(t_s)	60-180secs
Average ramp up rate (Liquidus Temp(T_L) to peak)		3°C/sec.Max.
$T_{s(max)}$ to T_L -Ramp-up Rate		3°C/sec.Max.
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150secs
Peak Temp(T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp(t_P)		30 secs.Max.
Ramp-down Rate		6°C/sec.Max.
Time 25°C to Peak Temp(T_P)		8 min.Max.
Do not exceed		+260°C

Reflow Soldering

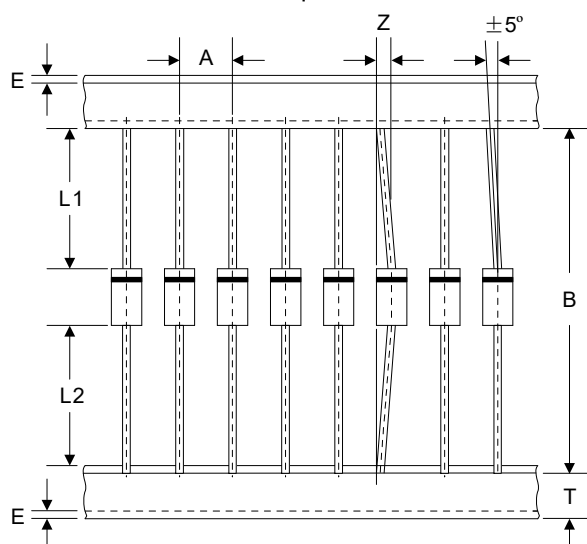


Marking Code

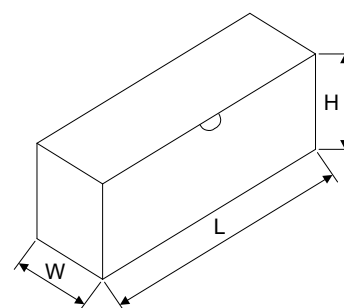


Packaging

Tape



Box



Dimensions in millimeters

A	B	Z	T	E	L1-L2
10.0±0.5	52.0±1.0	1.2Max	6.0±0.4	1.0Max	1.0Max

L	W	H	Quantity
250.0±5.0	78.0±5.0	114.0±5.0	300PCS