

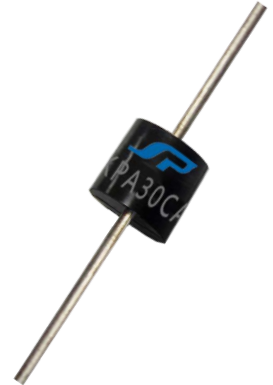
Glass Passivated Junction Transient Voltage Suppressor

Stand-Off Voltage - 20 to 300 Volts

20000 Watt Peak Pulse Power

Features

- Plastic package
- Glass passivated chip junction
- 20000W 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 20KPA20 thru types 20KPA300 (e.g. 20KPA20C , 20KPA300CA)
- Electrical characteristics apply in both directions

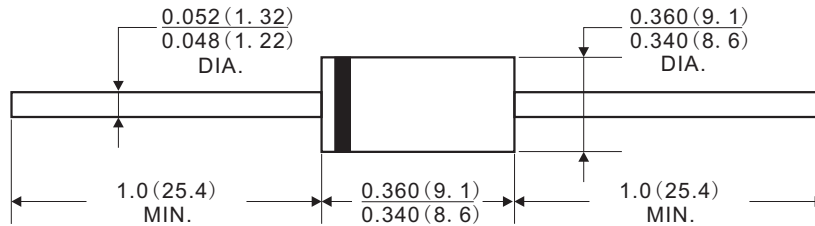
Maximum Ratings And Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μ s waveform	P_{PPM}	Minimum 20000	Watts
Peak Pulse Current of on 10/1000 μ s waveform	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Lead lengths. 375", (9.5mm)	$P_{M(AV)}$	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

Dimensions

Case Style P600



Dimensions in inches and (millimeters)

Electrical Characteristics

TABLE 1

**Stand for commonly used models

20KPA 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)
20KPA20A	20KPA20CA	20	22.20	24.50	50	36.8	548.9	5000
20KPA24A	20KPA24CA	24	26.67	29.49	50	41.2	490.3	5000
20KPA26A	20KPA26CA	26	28.90	31.90	50	44.7	451.9	2000
20KPA28A	20KPA28CA	28	31.10	34.40	50	48.0	420.8	1000
20KPA30A	20KPA30CA	30	33.30	36.90	5	51.5	392.2	250
20KPA32A	20KPA32CA	32	35.60	39.10	5	54.3	372.0	150
20KPA34A	20KPA34CA	34	37.84	41.53	5	57.5	351.3	50
20KPA36A	20KPA36CA	36	39.3	44.1	5	61.5	328.5	20
20KPA40A	* 20KPA40CA	40	44.4	49.1	5	67.8	297.9	15
20KPA44A	20KPA44CA	44	48.8	54.0	5	72.7	277.9	2
20KPA48A	20KPA48CA	48	53.2	58.8	5	79.4	254.4	2
20KPA52A	20KPA52CA	52	57.6	63.6	5	85.8	235.4	2
20KPA56A	20KPA56CA	56	62.4	68.8	5	92.6	218.1	2
20KPA60A	20KPA60CA	60	66.8	74.0	5	97.6	207.0	2
20KPA64A	20KPA64CA	64	71.2	78.8	5	104.0	194.2	2
20KPA68A	20KPA68CA	68	75.6	83.6	5	110.0	183.6	2
20KPA72A	20KPA72CA	72	80.0	88.4	5	116.0	174.1	2
20KPA80A	20KPA80CA	80	88.8	98.0	5	130.0	155.4	2
20KPA88A	20KPA88CA	88	97.6	107.6	5	142.0	142.3	2
20KPA96A	20KPA96CA	96	106.8	118.0	5	155.0	130.3	2
20KPA104A	20KPA104CA	104	115.6	127.6	5	168.0	120.2	2
20KPA112A	20KPA112CA	112	124.4	137.6	5	182.0	111.0	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

TABLE 1

***Stand for commonly used models

20KPA 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)
20KPA120A	20KPA120CA	120	133.2	147.2	5	194.0	104.1	2
20KPA132A	20KPA132CA	132	146.8	162.4	5	213.0	94.8	2
20KPA144A	20KPA144CA	144	160.0	176.8	5	232.0	87.1	2
20KPA160A	20KPA160CA	160	177.6	196.4	5	258.0	78.3	2
20KPA172A	20KPA172CA	172	191.2	211.2	5	277.0	72.9	2
20KPA180A	20KPA180CA	180	200.0	221.2	5	291.0	69.4	2
20KPA192A	20KPA192CA	192	213.2	235.6	5	309.0	65.4	2
20KPA204A	20KPA204CA	204	226.8	250.8	5	329.0	61.4	2
20KPA216A	20KPA216CA	216	240.0	265.2	5	348.0	58.0	2
20KPA232A	20KPA232CA	232	257.6	284.8	5	374.0	54.0	2
20KPA240A	20KPA240CA	240	266.8	294.8	5	387.0	52.2	2
20KPA256A	20KPA256CA	256	284.4	314.4	5	412.0	49.0	2
20KPA280A	20KPA280CA	280	311.2	344.0	5	451.0	44.8	2
20KPA300A	20KPA300CA	300	333.2	368.4	5	483.0	41.8	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

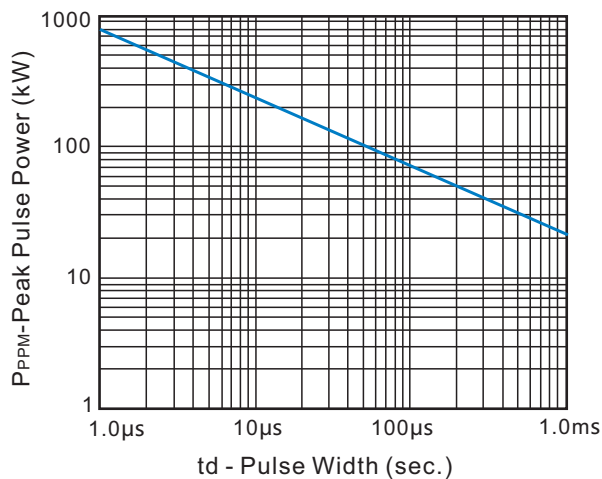
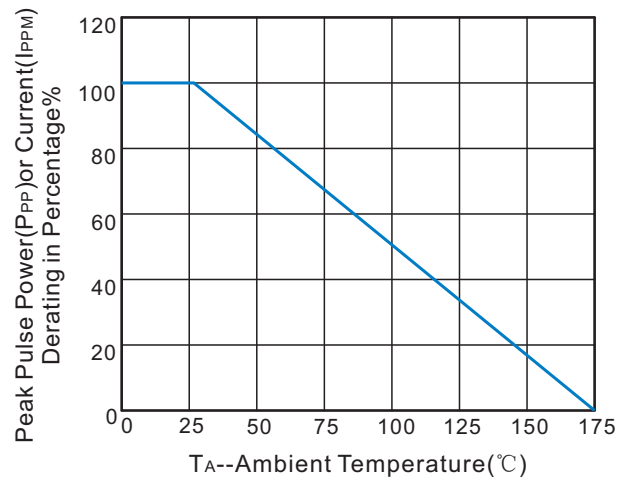


Fig.2 Pulse Derating Curve



Rating And Characteristic Curves

Fig.3 Pulse Waverform

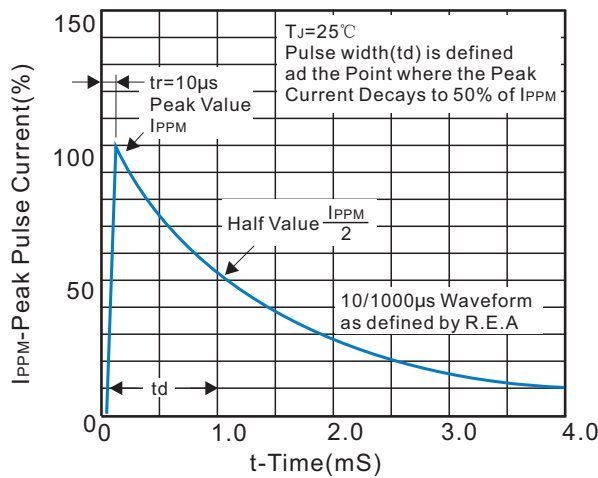


Fig.4 Typical Junction Capacitance

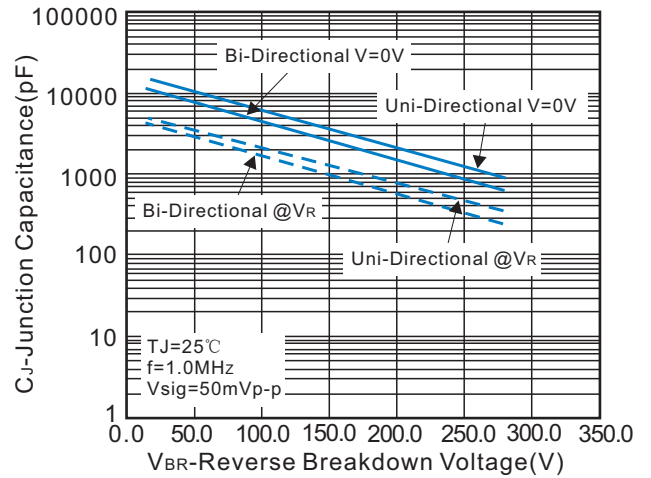


Fig.5 Steady State Power Dissipation Derating Curve

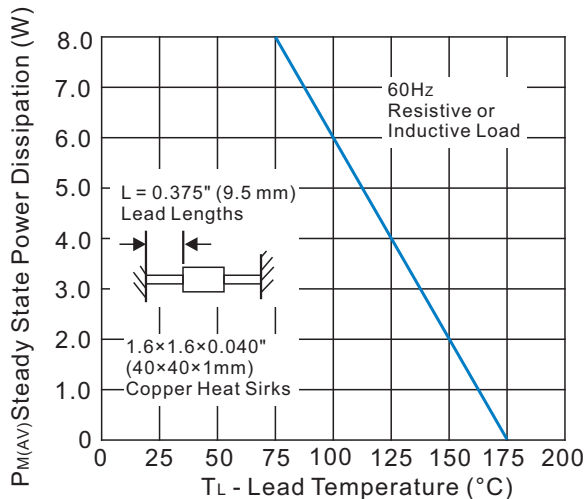
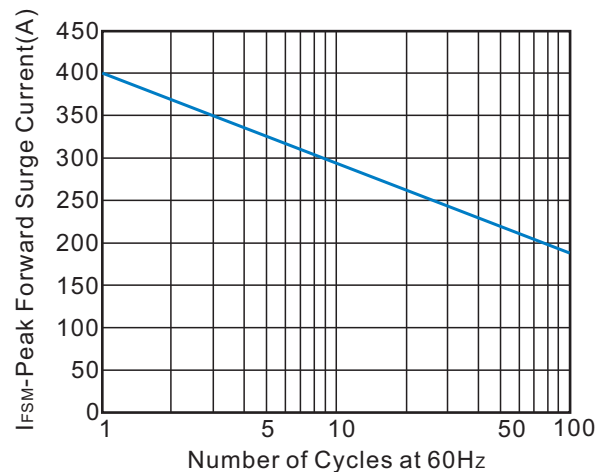


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

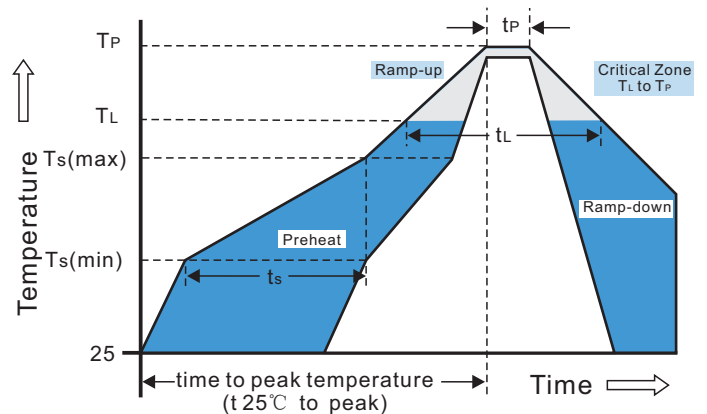


Recommended Soldering Conditions

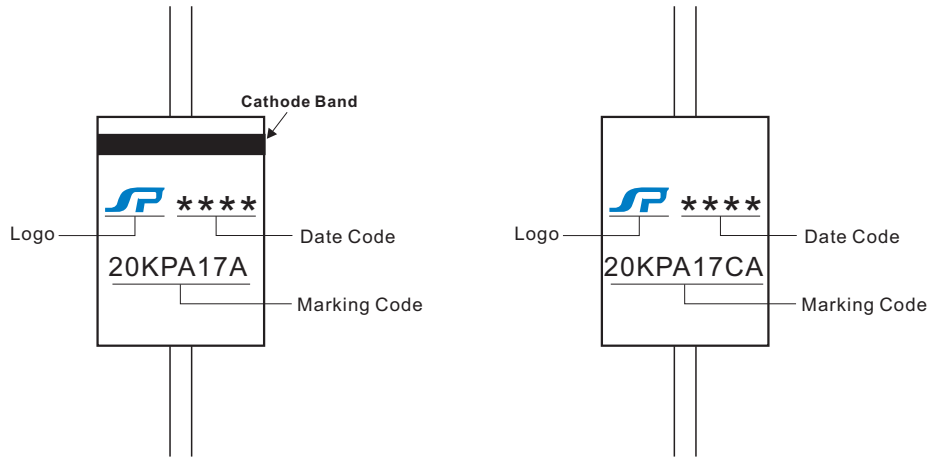
Recommended Conditions

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

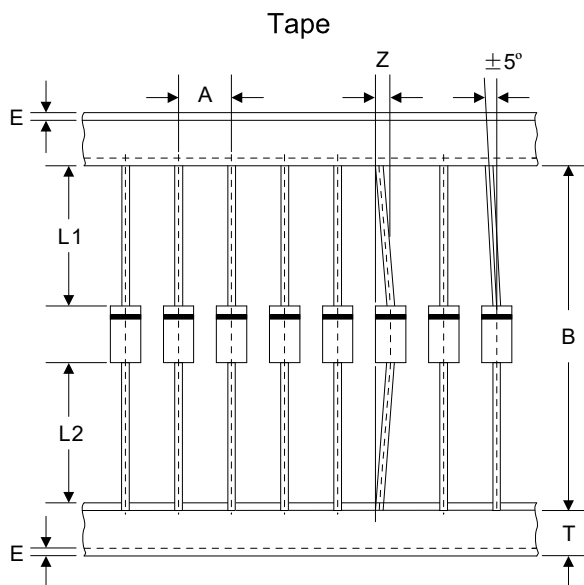
Reflow Soldering



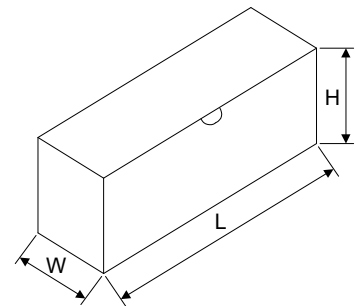
Marking Code



Packaging



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