8KP Series

8000W Transient Voltage Suppressor

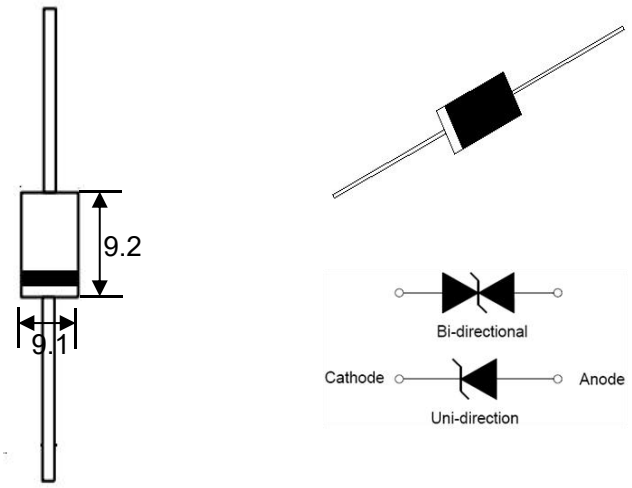
Description

The 8KP series of high current uni/bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer uni/bi-directional port protection from 20 volts to 43 volts. They provide a clamping voltage lower than the avalanche voltage. Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.

Features

- Excellent clamping capability.
- Repetition rate (duty cycle): 0.01%.
- Color band denoted cathode except bidirectional.
- 8000W Peak Pulse power capability at 10×1000μs waveform.
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- High temperature soldering: 260℃/10s at terminals.

Dimensions & Symbol（Unit: mm Max）



Mechanical Characteristics

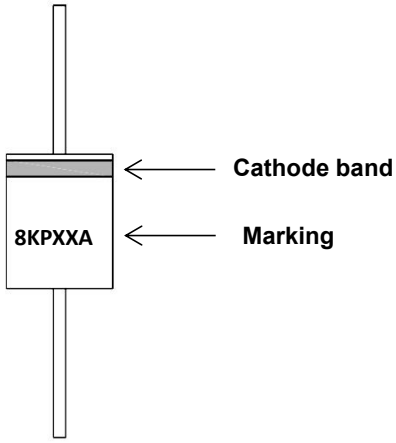
Package:P600

- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Polarity: Color band denotes cathode except bi-directional models
- Standard Packaging: Box
- Weight: 0.40g
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- I/O Interface.
- AC/DC Power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Marking Information



Ordering information

Out line	Reel (pcs)	Per carton (pcs)	Packing Option
Taping	300	3K	box

Electrical characteristics (T_A=25℃)

Part Number		Marking		V_R	I_R@V_R	V_{BR}@I_T		I_T	V_C@I_{PP}	I_{PP}①
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
8KP20A	8KP20CA	8KP20A	8KP20CA	20	5	22.2	24.5	10	32.4	246.9
8KP22A	8KP22CA	8KP22A	8KP22CA	22	5	24.4	26.9	10	35.5	225.3
8KP24A	8KP24CA	8KP24A	8KP24CA	24	5	26.7	29.5	10	38.9	205.6
8KP26A	8KP26CA	8KP26A	8KP26CA	26	5	28.9	31.9	10	42.1	190.1
8KP28A	8KP28CA	8KP28A	8KP28CA	28	5	31.1	34.4	1	45.4	176.2
8KP30A	8KP30CA	8KP30A	8KP30CA	30	5	33.3	36.8	1	48.4	165.3
8KP33A	8KP33CA	8KP33A	8KP33CA	33	5	36.7	40.6	1	53.3	150.1
8KP36A	8KP36CA	8KP36A	8KP36CA	36	5	40.0	44.2	1	58.1	137.7
8KP40A	8KP40CA	8KP40A	8KP40CA	40	5	44.4	49.1	1	64.5	124.1
8KP43A	8KP43CA	8KP43A	8KP43CA	43	5	47.8	52.8	1	69.4	115.3

① Surge waveform: 10/1000μs

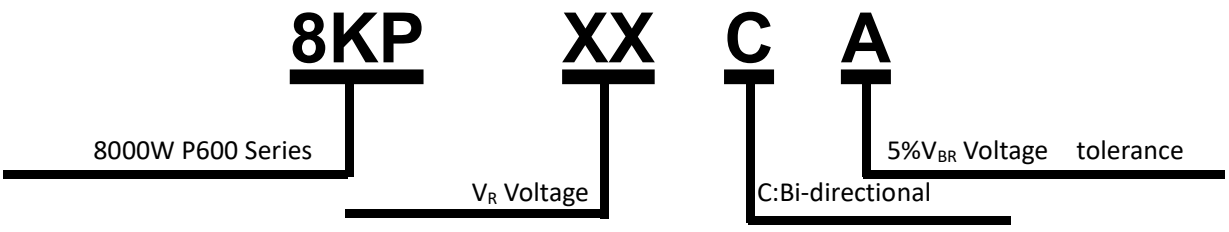
V_R ： Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}： Breakdown Voltage

V_C：Clamping Voltage -- Peak voltage measured across the suppressor at a specified Ipp

I_R： Reverse Leakage Current

Part Number Code



Absolute Maximum Ratings (T_A=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	℃
Operating junction temperature range	T_j	-55 to +150	℃
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	8	W
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	8000	W
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	400	A

Ratings And V-I Characteristics curves (T_A=25ºC, unless otherwise noted)

FIG.1:V- I curve characteristics (Uni-directional)

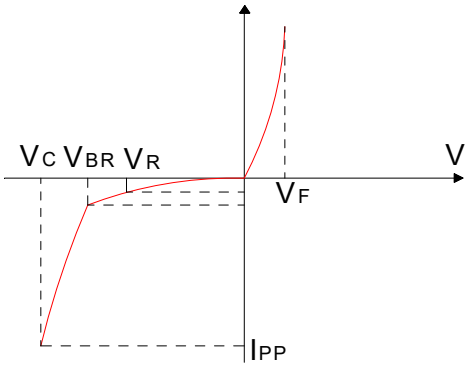


FIG.2:V- I curve characteristics (Bi-directional)

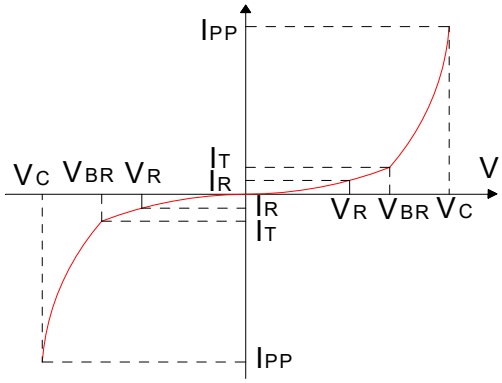


FIG.3: Pulse waveform

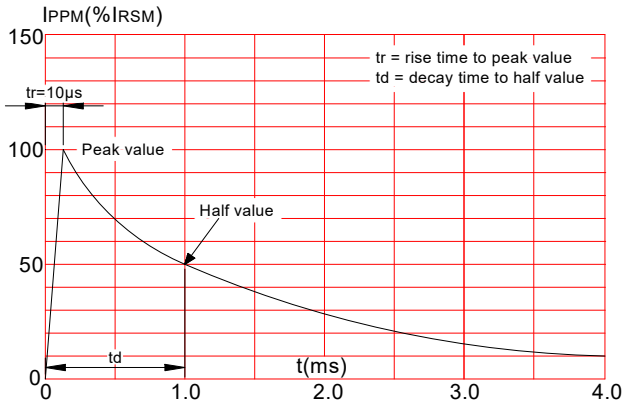
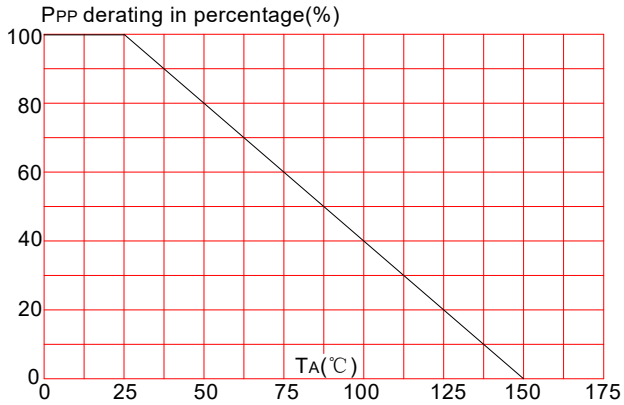
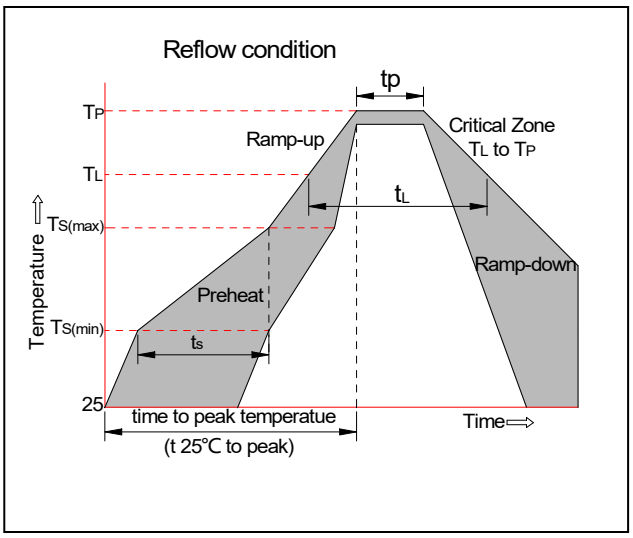


FIG.4: Pulse derating curve

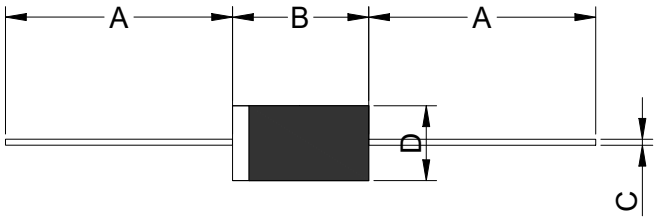


Soldering Parameters

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



Package Mechanical Data



Ref.	Dimension			
	Inches		Millimeters	
	Min	Max	Min	Max
A	1.00	-	25.4	-
B	0.339	0.370	8.60	9.40
C	0.045	0.057	1.15	1.45
D	0.340	0.360	8.60	9.10

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