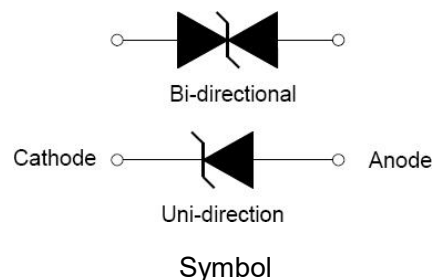
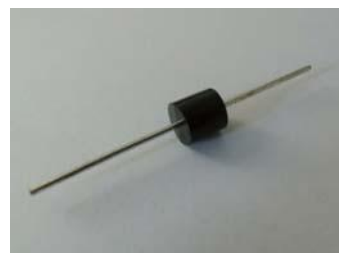


DESCRIPTION:

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:

- ✧ Low zener impedance.
- ✧ Excellent clamping capability.
- ✧ JEDEC R-6/P-600 Molded Plastic.
- ✧ Color band denoted cathode except bidirectional.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ Glass passivated chip junction in R-6/P600 package.
- ✧ 8000W Peak Pulse power capability at 10×1000μs waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High reliability application and automotive grade (AEC-Q101 qualified).

IEC COMPATIBILITY:

- ✧ ISO16750-2 P5A 12V system (87V/1Ω/200ms 10c)
- ✧ ISO16750-2 P5A 24V system (176V/2Ω/200ms 10c)

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000μs waveform	P _{PP}	8000	W
Peak pulse current of on 10/1000μs waveform	I _{PP}	See next table	A
Steady state power dissipation at T _L =75°C	P _{M(AV)}	8	W
Operating junction and Storage temperature range	T _{STG} , T _J	-55 to +150	°C
Peak forward surge current, 8.3ms single half sine-wave	I _{FSM}	500	A

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

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

① Surge waveform: 10/1000 μs

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 I_{PP} I_R :

Reverse Leakage Current

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

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

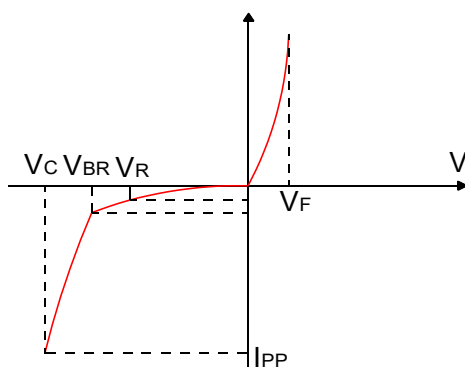


FIG.2:V- I curve characteristics (Bi-directional)

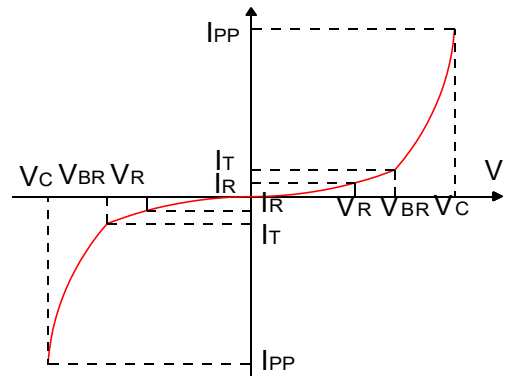
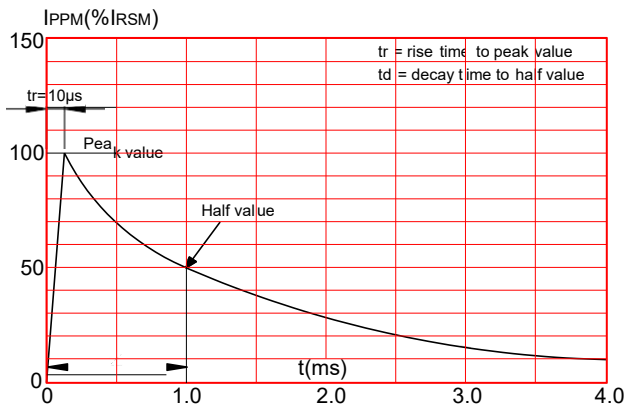
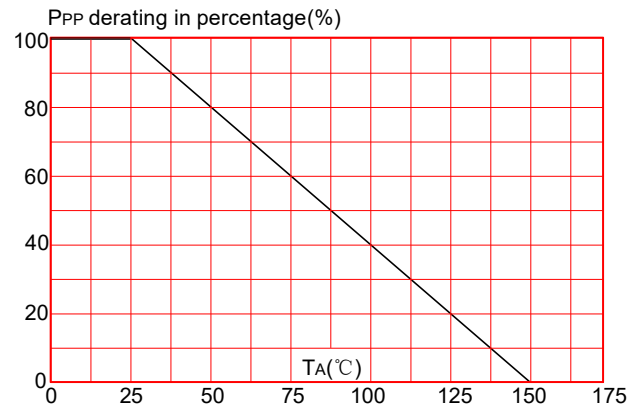
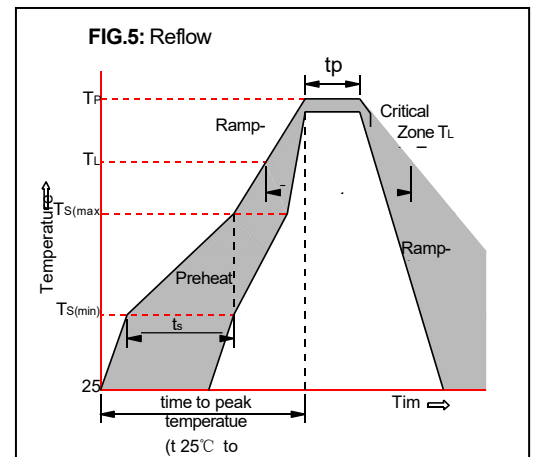


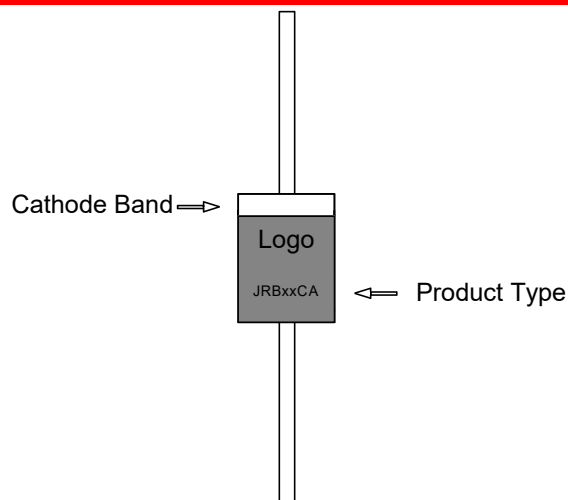
FIG.3: Pulse waveform

FIG.4: Pulse derating curve


SOLDERING PARAMETERS

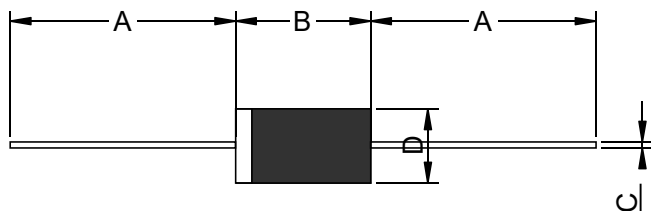
Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
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



MARKING & ORDERING INFORMATION



- 8KP XX C A
 (1) (2) (3) (4)
- (1) Series:8000 watts series
 - (2) Reverse Stand-off Voltage
 - (3) Bi-directional
 - (4) 5% V_{BR} Voltage tolerance

PACKAGE MECHANICAL DATA


Ref.	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	1.000	-	25.40	-
B	0.339	0.370	8.60	9.40
C	0.048	0.052	1.20	1.40
D	0.340	0.360	8.60	9.10

Part Number	Case Type	Quantity	Packing Option
8KPXXCA/A	R6/P600	300	Box