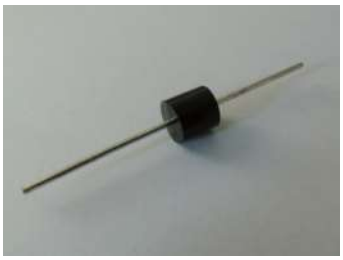
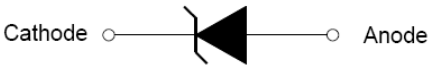
DESCRIPTION:

The P8S 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.



Bi-directional



Uni-direction

Symbol

FEATURES:

- ✧ Low zener impedance.
- ✧ Excellent clamping capability.
- ✧ JEDEC R-6/P-600 Molded Plastic.
- ✧ Repetition rate (duty cycle): 0.01%.
- ✧ Color band denoted cathode except bidirectional.
- ✧ High temperature soldering: 260℃/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.
- ✧ AEC-Q101 qualified.

ABSOLUTE MAXIMUM RATINGS (T_A=25ºC, 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℃	$P_{M(AV)}$	8	W
Operating junction and Storage temperature range	T_{STG}, T_J	-55 to +150	℃
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	500	A

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ELECTRICAL CHARACTERISTICS (T_A=25℃)

Part Number		V_R	I_R@V_R	V_{BR}@I_T		I_T	V_C@I_{PP}	I_{PP}①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
P8S20A	P8S20CA	20	5	22.2	24.5	5	32.4	246.9
P8S22A	P8S22CA	22	5	24.4	26.9	5	35.5	225.3
P8S24A	P8S24CA	24	5	26.7	29.5	5	38.9	205.6
P8S26A	P8S26CA	26	5	28.9	31.9	5	42.1	190.1
P8S28A	P8S28CA	28	5	31.1	34.4	5	45.4	176.2
P8S30A	P8S30CA	30	5	33.3	36.8	5	48.4	165.3
P8S33A	P8S33CA	33	5	36.7	40.6	5	53.3	150.1
P8S36A	P8S36CA	36	5	40.0	44.2	5	58.1	137.7
P8S40A	P8S40CA	40	5	44.4	49.1	5	64.5	124.1
P8S43A	P8S43CA	43	5	47.8	52.8	5	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

RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25ºC, unless otherwise noted)

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

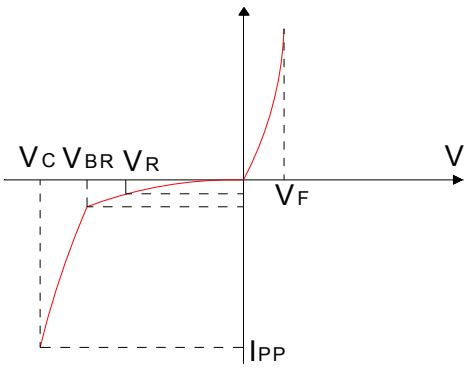

FIG.2:V- I curve characteristics (Bi-directional)

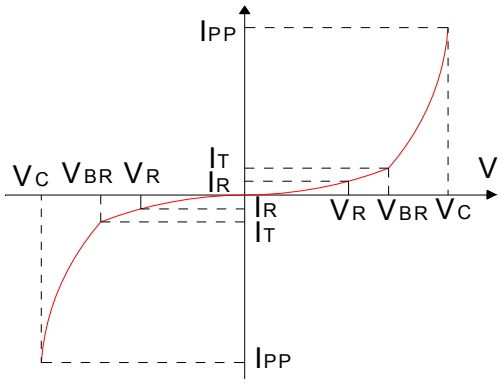

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FIG.3: Pulse waveform

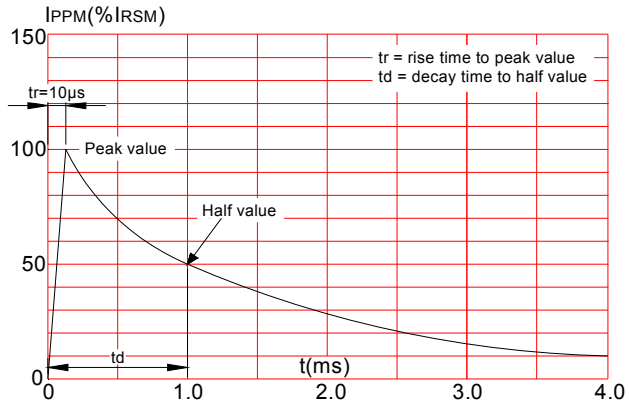
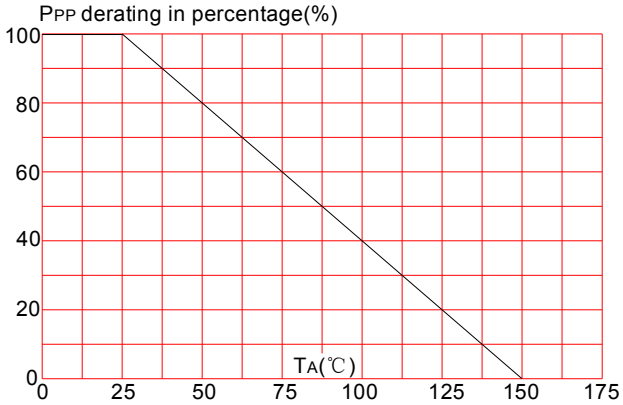


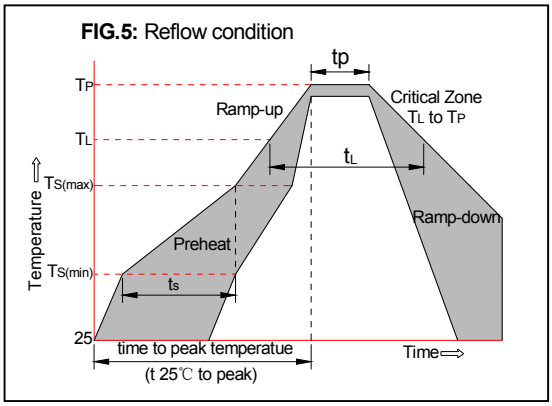
FIG.4: Pulse derating curve



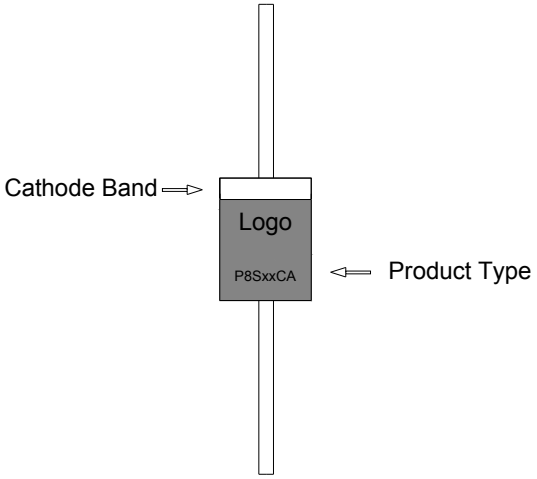
SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (t_s)	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℃

FIG.5: Reflow condition



MARKING & ORDERING INFORMATION



P8S 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

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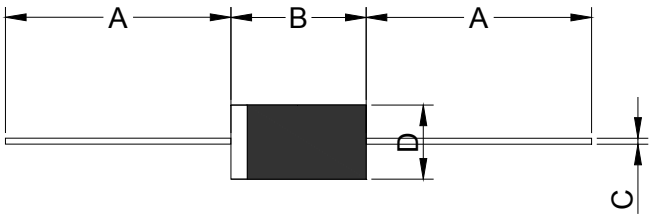
PACKAGE MECHANICAL DATA



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
P8SXXCA/A	R6/P600	300	Box

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