

## Surface Mount Transient Voltage Suppressors

### 15KPS Series 20 To 36V 15000W

#### Description

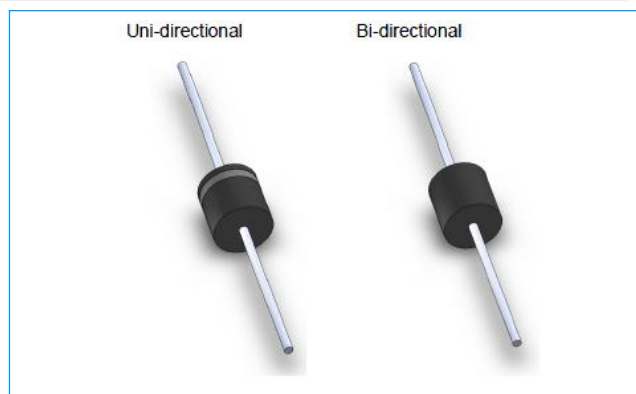
The 15KPS series of high current uni/bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer uni/bi-directional port protection from 20 volts to 36 volts. They provide a clamping voltage lower than the avalanche voltage. 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

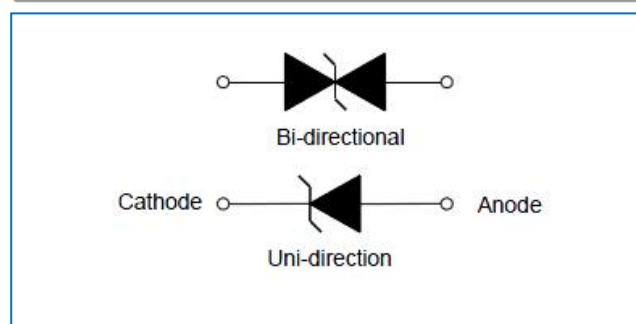
- ◆ JEDEC R-6/P-600 Molded Plastic.
- ◆ Glass passivated chip junction in R-6/P600 package.
- ◆ 15000 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- ◆ Low leakage
- ◆ Excellent clamping capability
- ◆ Very fast response time
- ◆ RoHS compliant
- ◆ Meet with ISO 7637-2,ISO 16750,etc

#### Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application



#### Functional Diagram



#### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25 °C unless otherwise noted)

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000us waveform	P <sub>PPM</sub>	15000	W
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =75°C	P <sub>D</sub>	8.0	W
Peak pulse current with a 10/1000us waveform	I <sub>PP</sub>	See Next Table	A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to +150	° C
Peak forward surge current, 8.3ms single half sine-wave	I <sub>FSM</sub>	500	A

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#### Electrical Characteristics (@ 25°C Unless Otherwise Specified )

Part Number		Stand-Off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$		Test Current $I_T$ (mA)	Maximum Reverse Leakage Current $I_R$ @ $V_{RWM}$ ( $\mu$ A)	Maximum Reverse Surge Current $I_{PP}^{(1)}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
Uni	Bi		min(V)	max(V)				
15KP20AS	15KP20CAS	20.0	22.20	24.50	5.0	15	349.9	34.3
15KP22AS	15KP22CAS	22.0	24.40	26.90	5.0	10	323.5	37.1
15KP24AS	15KP24CAS	24.0	26.70	29.50	5.0	5	294.9	40.7
15KP26AS	15KP26CAS	26.0	28.90	31.90	5.0	5	272.8	44.0
15KP28AS	15KP28CAS	28.0	31.10	34.40	5.0	5	252.7	47.5
15KP30AS	15KP30CAS	30.0	33.30	36.80	5.0	5	236.7	50.7
15KP33AS	15KP33CAS	33.0	36.70	40.60	5.0	5	219.4	54.7
15KP36AS	15KP36CAS	36.0	40.00	44.20	5.0	5	200.7	59.8

Note:(1)Surge waveform: 10/1000  $\mu$ s

#### Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1 - Pulse Waveform

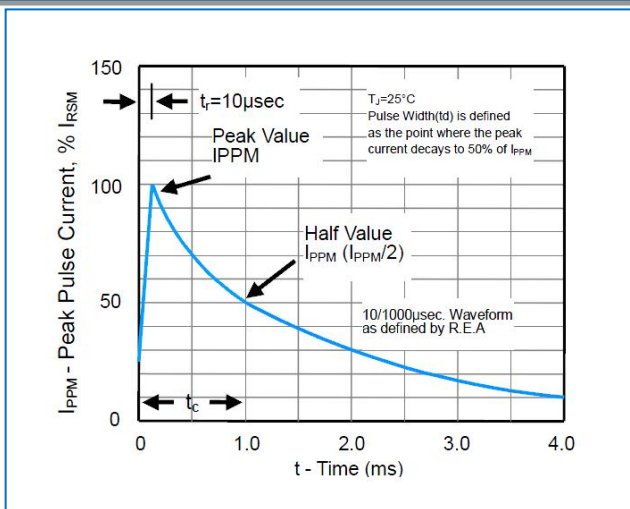


Figure 2 - Pulse Derating Curve

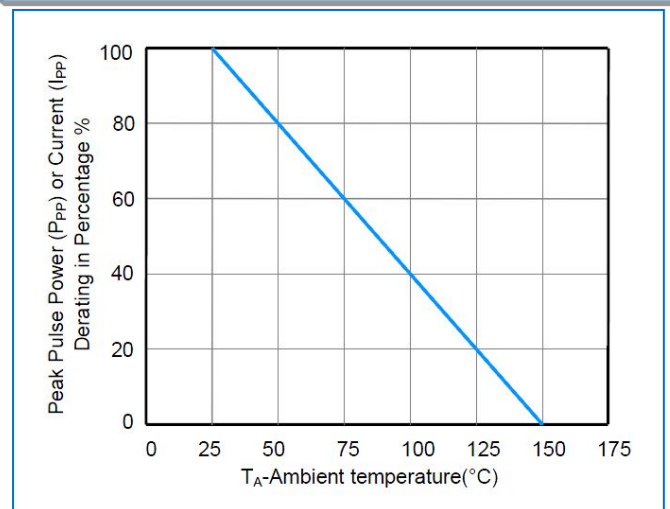


Figure 3 - I-V Curve Characteristics

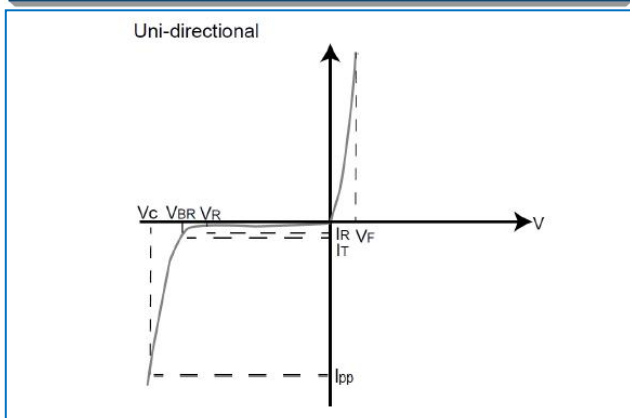
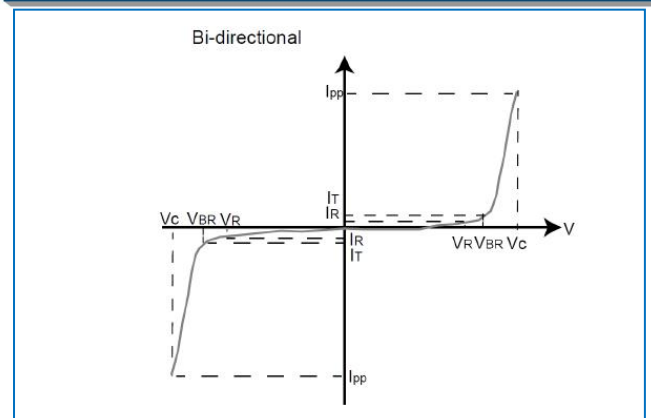


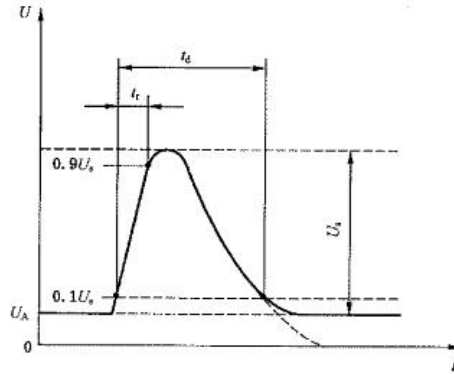
Figure 4 - I-V Curve Characteristics



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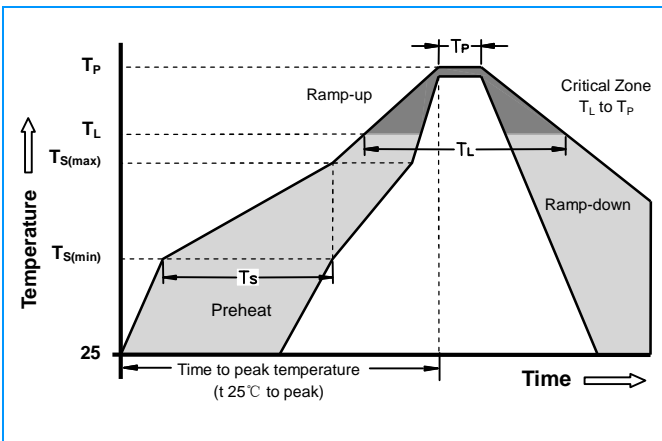
Load dump ratings are tested on PRIMA ISO7637-P5a



试验脉冲 5a

SYSTEM	TEST LEVEL	Us(V)	Td (ms)	Ri (Ω)	NUMBER OF PULSE
12V	IV	87	400	0.5	10 pulse
24V	IV	174	350	2	10 pulse

### Soldering Parameters

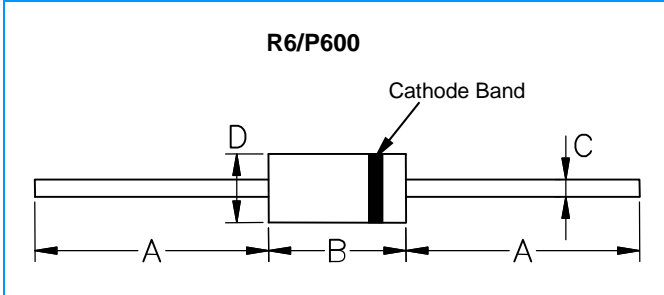


Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 - 180 Seconds
Average ramp up rate ( Liquidus Temp $T_L$ to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_s$ )	60 - 150 Seconds
Peak Temperature ( $T_P$ )		260 +0/-5°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 - 40 Seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_P$ )		8 minutes Max
Do not exceed		260°C

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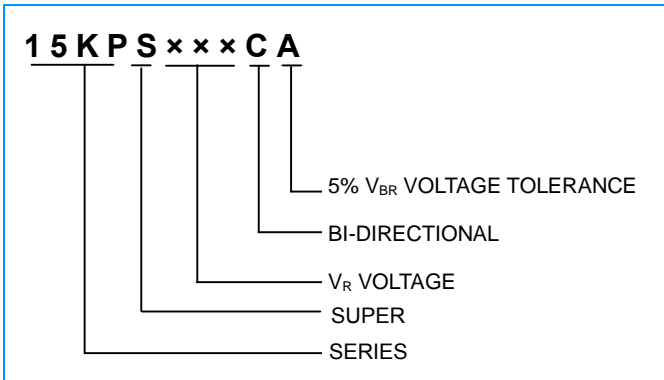
### 15KPS Series 20 To 36V 15000W

#### Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
<b>A</b>	1.000	-	25.40	-
<b>B</b>	0.340	0.360	8.64	9.14
<b>C</b>	0.048	0.052	1.22	1.32
<b>D</b>	0.340	0.360	8.64	9.14

#### Part Numbering



#### Packaging

Part Number	Component Package	Quantity	Packaging Option
15KPSXXXXX	R6/P600	300	Box

#### Packaging Dimensions Unit: Inches (Millimeters)

