



SOCAY 5000W High-power 5KP Series TVS Diode Axial Lead Transient Voltage Suppressor 5KP5.0A 5.0CA

Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: UL, REACH, RoHS, ISO
- Model Number: 5KP5.0A 5KP5.0CA
- Minimum Order Quantity: 250PCS
- Price: Negotiable
- Delivery Time: 5-8 work days



Product Specification

- V_{rw}: 5.0V
- V_{br@It} (Min.): 6.40V
- V_{br@It} (Max.): 7.00V
- I_t: 10mA
- V_{c@Ipp}: 9.2V
- I_{pp}: 543.48A
- I_{r@Vrw}: 800μA

Product Description

SOCAY 5000W High-power 5KP Series TVS Diode Axial Lead Transient Voltage Suppressor 5KP5.0A 5.0CA

DATASHEET: [5KP.pdf](#)

Description:

The 5KP series is designed for the protection of sensitive electronic equipment against transient voltages caused by lightning strikes and other transient voltage events.

Part Number		Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C (V) @ I_{PP}	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R (μA) @ V_{RWM}
Uni	Bi		MIN	MAX				
5KP5.0A	5KP5.0CA	5.0	6.40	7.00	10	9.2	543.48	800
5KP6.0A	5KP6.0CA	6.0	6.67	7.37	10	10.3	485.44	800
5KP6.5A	5KP6.5CA	6.5	7.22	7.89	10	11.2	446.43	500
5KP7.0A	5KP7.0CA	7.0	7.78	8.60	10	12.0	416.67	200
5KP7.5A	5KP7.5CA	7.5	8.33	9.21	1	12.9	416.67	200
5KP8.0A	5KP8.0CA	8.0	8.89	9.83	1	13.6	367.65	50
5KP8.5A	5KP8.5CA	8.5	9.44	10.40	1	14.4	347.22	20
5KP9.0A	5KP9.0CA	9.0	10.00	11.10	1	15.4	324.68	10
5KP10A	5KP10CA	10.0	11.10	12.30	1	17.0	294.12	5
5KP11A	5KP11CA	11.0	12.20	13.50	1	18.2	274.73	5

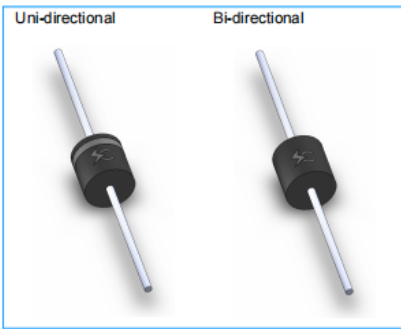
Features:

- u Glass passivated chip junction in P600 Package
- u Low leakage
- u Uni and Bidirectional unit
- u Excellent clamping capability
- u 5000W Peak power with $10 \times 1000\mu s$ waveform Duty cycle: 0.01%
- u Fast to respond and respond
- u RoHS compliant
- u Fast response time: typically less than 1.0ps from 0 Volts to VBR min

Applications:

TVS devices are an ideal choice for protecting I/O interfaces, VCC buses and other sensitive circuits in telecommunications, computer, industrial and consumer electronics applications.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	5000	Watts
Peak Pulse Current with a 10/1000 μs waveform.(Note1, Fig.3)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at $T_L=75^\circ C$	$P_{M(AV)}$	8.0	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	500	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	T_F	3.5/5.0	Voltage
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	$^\circ C$



Functional Diagram

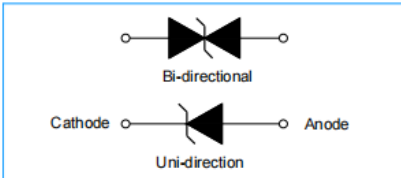


Figure 1 - Peak Pulse Power Rating Curve

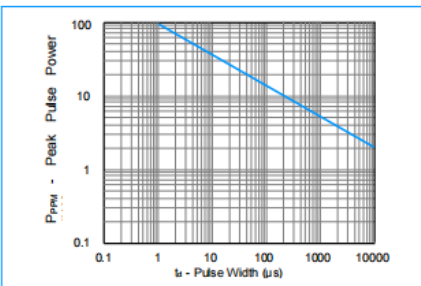


Figure 3 - Pulse Waveform

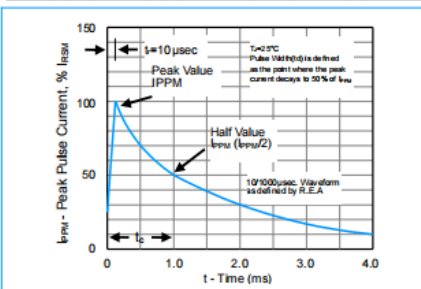


Figure 5 - Steady State Power Derating Curve

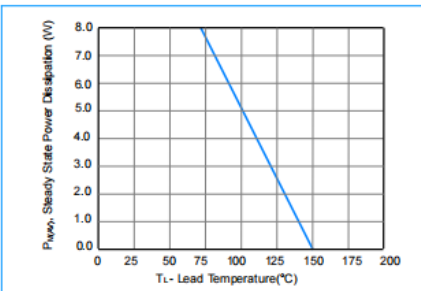


Figure 2 - Pulse Derating Curve

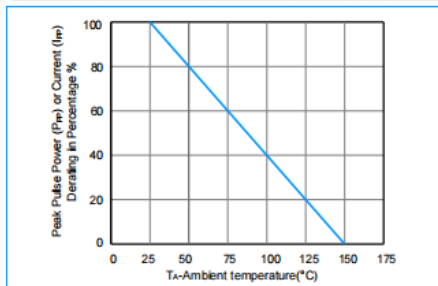


Figure 4 - Typical Junction Capacitance

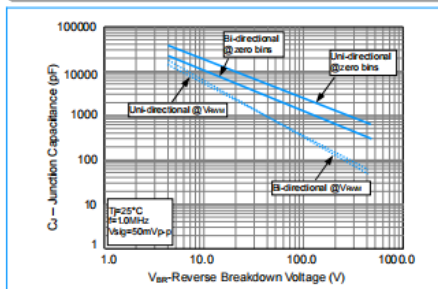
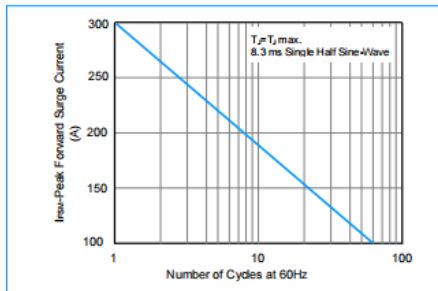
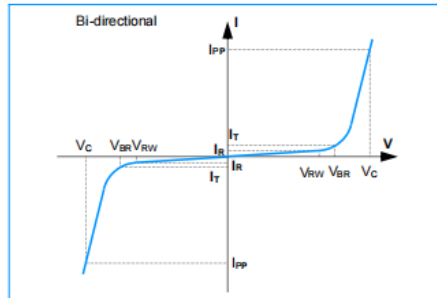
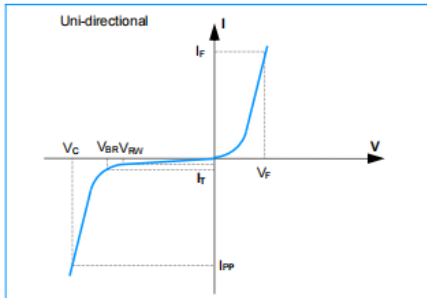


Figure 6 - Maximum Non-Repetitive Surge Current



I-V Curve Characteristics



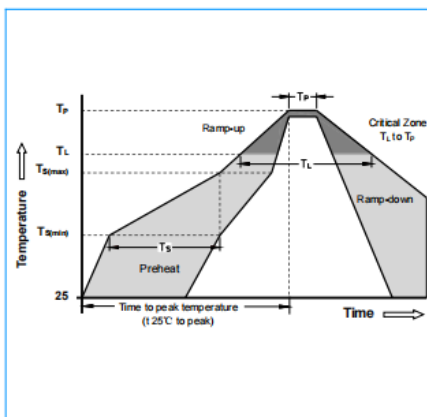
Physical Specifications

Weight	0.07 ounce, 2.1gram
Case	JEDEC R-6/P600 Molded Plastic over glass passivated junction
Polarity	Color band denotes cathode except Bipolar
Terminal	Matte Tin-plated leads, Solderable per JESD22-B102D

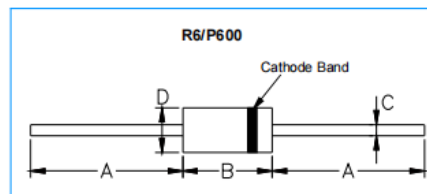
Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Soldering Parameters

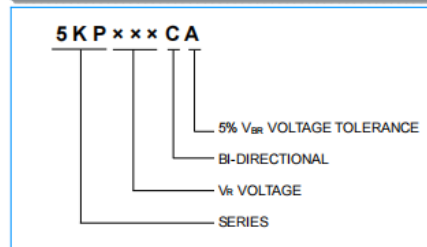


Reflow Condition	Lead-free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$) 150°C
	-Temperature Max ($T_{s(max)}$) 200°C
	-Time (min to max) (T_s) 60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L) to peak	3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate	3°C/second max
Reflow	-Temperature (T_L) (Liquidus) 217°C
	-Time (min to max) (T_L) 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	280°C

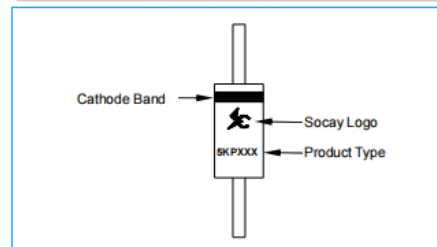


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	1.000	-	25.40	-
B	0.340	0.360	8.64	9.14
C	0.048	0.052	1.22	1.32
D	0.340	0.360	8.64	9.14

Part Numbering



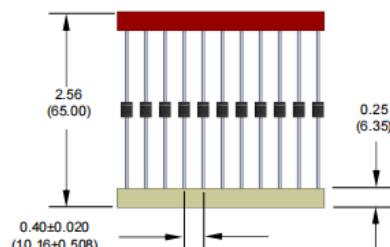
Part Marking



Packaging

Part Number	Component Package	Quantity	Packaging Option
5KPXXXXX	R6/P600	800 PCS	Reel
		250 PCS	Box

Packaging Dimensions Unit: Inches (Millimeters)



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