



SOCAY 5000W Uni-directional 10V TVS Diode 5KP Series Axial Lead Transient Voltage Suppressor

Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: UL, REACH, RoHS, ISO
- Model Number: 5KP10A
- Minimum Order Quantity: 250PCS
- Price: Negotiable
- Delivery Time: 5-8 work days



Product Specification

- 5KP10A Vrwm: 10.0V
- 5KP10A Vbr@It (Min.): 11.10V
- 5KP10A Vbr@It (Max.): 12.30V
- 5KP10A It: 1mA
- 5KP10A Vc@lpp: 17.0V
- 5KP10A lpp: 294.12A
- 5KP10A Ir@Vrwm: 5μA

Product Description

SOCAY 5000W Uni-directional 10V TVS Diode 5KP Series Axial Lead Transient Voltage Suppressor

DATASHEET: [5KP.pdf](#)

5KP10A Description:

The 5KP series is designed to protect sensitive electronic equipment against the transient voltages caused by lightning and other switching 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 (μ A) @ 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
5KP12A	5KP12CA	12.0	13.30	14.70	1	19.9	251.26	5
5KP13A	5KP13CA	13.0	14.40	15.90	1	21.5	232.56	5
5KP14A	5KP14CA	14.0	15.60	17.20	1	23.2	215.52	5
5KP15A	5KP15CA	15.0	16.70	18.50	1	24.4	204.92	5

5KP10A 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 V_{BR} min
- u Typical I_R less than 5μ A above 12V.
- u High Temperature soldering: $260^\circ\text{C}/40$ seconds at terminals
- u Typical maximum temperature coefficient $\Delta V_{BR} = 0.1\% \times V_{BR} @ 25^\circ\text{C} \times \Delta T$
- u Plastic package has Underwriters Laboratory Flammability 94V-0
- u Matte tin lead-free Plated
- u Halogen free and RoHS compliant
- u Typical failure mode is short from over-specified voltage or current
- u Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- u IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- u ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- u EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)

5KP10A Applications:

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

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 μ s waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	5000	Watts
Peak Pulse Current with a 10/1000 μ s waveform.(Note1, Fig.3)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	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	°C

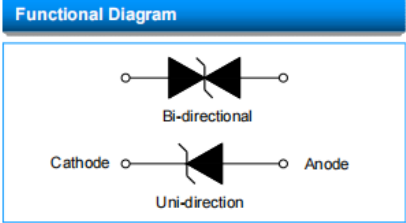
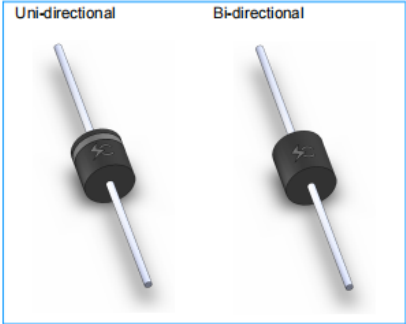


Figure 1 - Peak Pulse Power Rating Curve

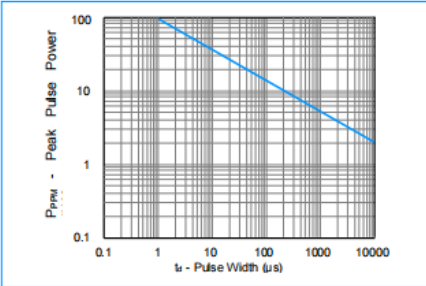


Figure 3 - Pulse Waveform

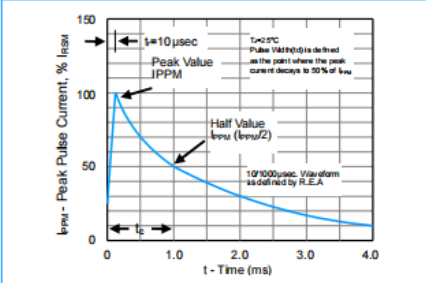


Figure 5 - Steady State Power Derating Curve

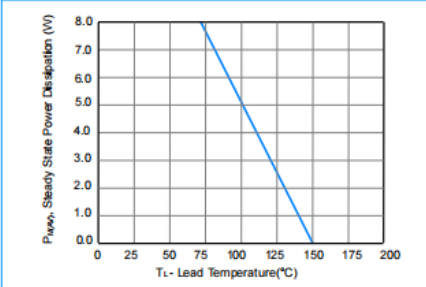


Figure 2 - Pulse Derating Curve

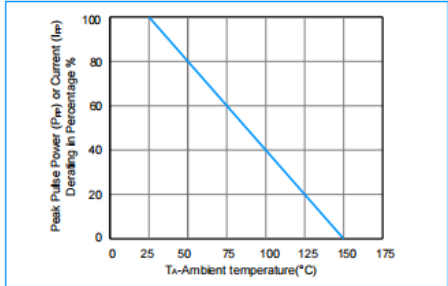


Figure 4 - Typical Junction Capacitance

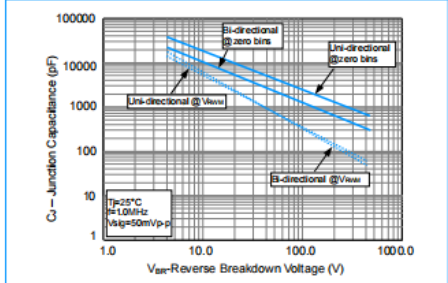
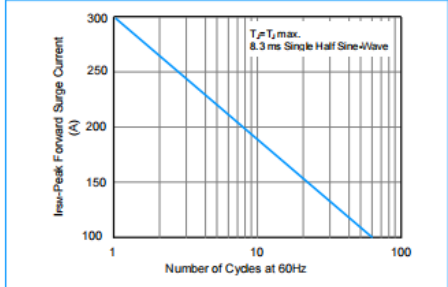
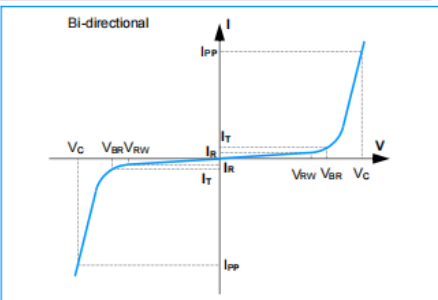
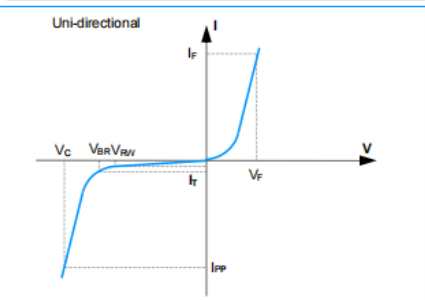


Figure 6 - Maximum Non-Repetitive Surge Current



I-V Curve Characteristics



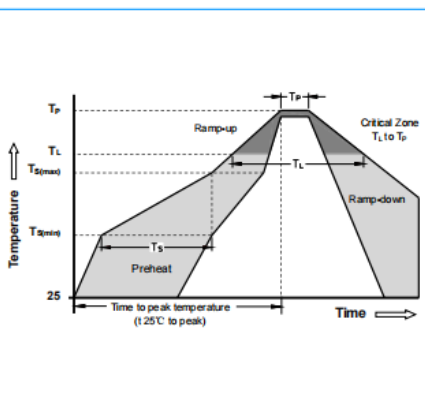
Physical Specifications

Weight	0.07 ounce, 2.1 gram
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

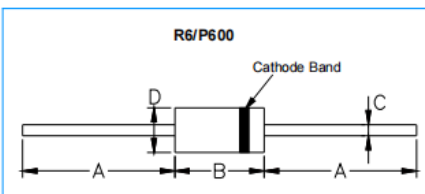
Environmental Specifications

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

Soldering Parameters

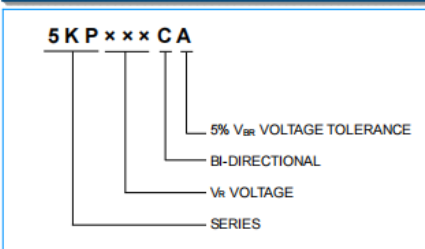


Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (T_s)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L to peak)		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature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

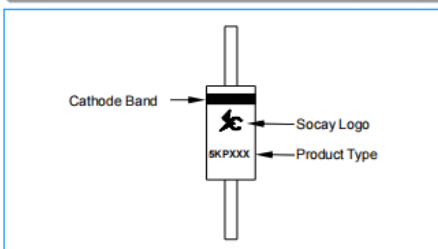


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	1.000	-	25.40	-
B	0.340	0.360	8.64	9.14
C	0.048	0.052	1.22	1.32
D	0.340	0.360	8.64	9.14

Part Numbering



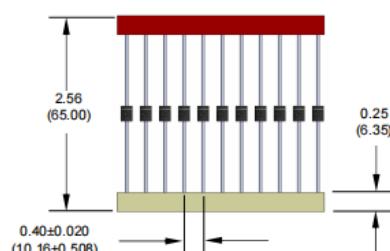
Part Marking



Packaging

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

Packaging Dimensions Unit: Inches (Millimeters)	
Length	10.0 (254)
Width	4.0 (101.6)
Height	1.0 (25.4)



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