



## SOCAY 30KW Axial Lead Transient Voltage Suppressor High-Power 30KPA Series TVS Diode 30KPA30A

Our Product Introduction

for more products please visit us on [socaydiode.com](http://socaydiode.com)

### Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: UL, REACH, RoHS, ISO
- Model Number: 30KPAP30A
- Minimum Order Quantity: 250PCS
- Price: Negotiable
- Delivery Time: 2-3weeks

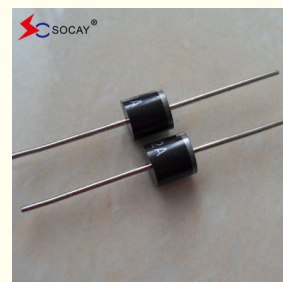


### Product Specification

- Item: TVS Diodes
- Footprint: R6/P600
- Vrwm: 30.0V
- Vbr@It (Min.): 33.51V
- It: 50mA
- Vc@Ipp: 55.2V
- Ipp: 548.9A
- Ir@Vrwm: 5000μA
- Storage Temperature Range: -55 To +150



### More Images



## Product Description

### SOCAY 30KW Axial Lead Transient Voltage Suppressor High-power 30KPA Series TVS Diode 30KPA30A

**DATASHEET:** [30KPA.pdf](#)

#### Introduction :

TVS tubes are widely used for the protection of semiconductors and sensitive devices, usually for diode protection. They are characterised by their fast response time (PS level), small size, high transient pulse suppression power and low clamping voltage.

| Part Number |            | Reverse Stand-Off Voltage $V_{RWM}$ (V) | Breakdown Voltage $V_{BR}$ (V) @ $I_T$ | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V) | Maximum Peak Pulse Current $I_{PP}$ (A) | Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu A$ ) |
|-------------|------------|-----------------------------------------|----------------------------------------|-------------------------|-----------------------------------------------|-----------------------------------------|-------------------------------------------------------|
| Uni         | Bi         | MIN                                     |                                        |                         |                                               |                                         |                                                       |
| 30KPA28A    | 30KPA28CA  | 28                                      | 31.28                                  | 50                      | 50.0                                          | 606.0                                   | 5000                                                  |
| 30KPA30A    | 30KPA30CA  | 30                                      | 33.51                                  | 50                      | 55.2                                          | 548.9                                   | 5000                                                  |
| 30KPA33A    | 30KPA33CA  | 33                                      | 36.90                                  | 50                      | 58.5                                          | 517.9                                   | 5000                                                  |
| 30KPA36A    | 30KPA36CA  | 36                                      | 40.20                                  | 50                      | 61.8                                          | 490.3                                   | 5000                                                  |
| 30KPA39A    | 30KPA39CA  | 39                                      | 43.60                                  | 20                      | 67.2                                          | 450.9                                   | 2000                                                  |
| 30KPA42A    | 30KPA42CA  | 42                                      | 46.90                                  | 10                      | 72.0                                          | 420.8                                   | 1000                                                  |
| 30KPA43A    | 30KPA43CA  | 43                                      | 48.00                                  | 10                      | 73.0                                          | 415.1                                   | 1000                                                  |
| 30KPA45A    | 30KPA45CA  | 45                                      | 50.30                                  | 5                       | 77.4                                          | 391.5                                   | 250                                                   |
| 30KPA48A    | 30KPA48CA  | 48                                      | 53.60                                  | 5                       | 81.6                                          | 371.3                                   | 150                                                   |
| 30KPA51A    | 30KPA51CA  | 51                                      | 57.00                                  | 5                       | 86.4                                          | 350.7                                   | 50                                                    |
| 30KPA54A    | 30KPA54CA  | 54                                      | 60.30                                  | 5                       | 91.4                                          | 331.5                                   | 20                                                    |
| 30KPA58A    | 30KPA58CA  | 58                                      | 64.80                                  | 5                       | 92.4                                          | 327.9                                   | 20                                                    |
| 30KPA60A    | 30KPA60CA  | 60                                      | 67.00                                  | 5                       | 102.0                                         | 297.1                                   | 15                                                    |
| 30KPA64A    | 30KPA64CA  | 64                                      | 71.50                                  | 5                       | 104.0                                         | 291.3                                   | 10                                                    |
| 30KPA66A    | 30KPA66CA  | 66                                      | 73.70                                  | 5                       | 107.0                                         | 283.2                                   | 2                                                     |
| 30KPA70A    | 30KPA70CA  | 70                                      | 78.20                                  | 5                       | 109.0                                         | 278.0                                   | 2                                                     |
| 30KPA71A    | 30KPA71CA  | 71                                      | 79.30                                  | 5                       | 111.5                                         | 271.7                                   | 2                                                     |
| 30KPA72A    | 30KPA72CA  | 72                                      | 80.40                                  | 5                       | 114.0                                         | 265.8                                   | 2                                                     |
| 30KPA75A    | 30KPA75CA  | 75                                      | 83.80                                  | 5                       | 119.4                                         | 253.8                                   | 2                                                     |
| 30KPA78A    | 30KPA78CA  | 78                                      | 87.10                                  | 5                       | 129.0                                         | 234.9                                   | 2                                                     |
| 30KPA84A    | 30KPA84CA  | 84                                      | 93.80                                  | 5                       | 139.2                                         | 217.7                                   | 2                                                     |
| 30KPA90A    | 30KPA90CA  | 90                                      | 100.50                                 | 5                       | 146.4                                         | 207.0                                   | 2                                                     |
| 30KPA96A    | 30KPA96CA  | 96                                      | 107.20                                 | 5                       | 156.0                                         | 194.2                                   | 2                                                     |
| 30KPA102A   | 30KPA102CA | 102                                     | 113.90                                 | 5                       | 165.6                                         | 183.0                                   | 2                                                     |
| 30KPA108A   | 30KPA108CA | 108                                     | 120.60                                 | 5                       | 175.2                                         | 172.9                                   | 2                                                     |
| 30KPA120A   | 30KPA120CA | 120                                     | 134.00                                 | 5                       | 194.4                                         | 155.9                                   | 2                                                     |
| 30KPA132A   | 30KPA132CA | 132                                     | 147.40                                 | 5                       | 213.0                                         | 142.3                                   | 2                                                     |
| 30KPA144A   | 30KPA144CA | 144                                     | 160.80                                 | 5                       | 223.2                                         | 135.8                                   | 2                                                     |
| 30KPA150A   | 30KPA150CA | 150                                     | 167.60                                 | 5                       | 233.4                                         | 129.8                                   | 2                                                     |
| 30KPA156A   | 30KPA156CA | 156                                     | 174.30                                 | 5                       | 245.0                                         | 123.7                                   | 2                                                     |
| 30KPA160A   | 30KPA160CA | 160                                     | 178.70                                 | 5                       | 252.6                                         | 120.0                                   | 2                                                     |
| 30KPA168A   | 30KPA168CA | 168                                     | 187.70                                 | 5                       | 272.4                                         | 111.2                                   | 2                                                     |
| 30KPA170A   | 30KPA170CA | 170                                     | 189.90                                 | 5                       | 275.0                                         | 110.2                                   | 2                                                     |
| 30KPA180A   | 30KPA180CA | 180                                     | 201.10                                 | 5                       | 290.4                                         | 104.3                                   | 2                                                     |
| 30KPA198A   | 30KPA198CA | 198                                     | 221.20                                 | 5                       | 319.8                                         | 94.7                                    | 2                                                     |
| 30KPA216A   | 30KPA216CA | 216                                     | 241.30                                 | 5                       | 348.6                                         | 86.9                                    | 2                                                     |
| 30KPA240A   | 30KPA240CA | 240                                     | 268.10                                 | 5                       | 387.0                                         | 78.3                                    | 2                                                     |
| 30KPA258A   | 30KPA258CA | 258                                     | 188.20                                 | 5                       | 416.4                                         | 72.8                                    | 2                                                     |
| 30KPA260A   | 30KPA260CA | 260                                     | 290.40                                 | 5                       | 416.0                                         | 72.8                                    | 2                                                     |
| 30KPA270A   | 30KPA270CA | 270                                     | 301.60                                 | 5                       | 436.2                                         | 69.5                                    | 2                                                     |
| 30KPA280A   | 30KPA280CA | 280                                     | 312.80                                 | 5                       | 464.0                                         | 65.3                                    | 2                                                     |
| 30KPA288A   | 30KPA288CA | 288                                     | 321.70                                 | 5                       | 469.9                                         | 64.5                                    | 2                                                     |

#### Features:

Please Kindly contact us get full datasheet of 30KP diodes

#### Applications:

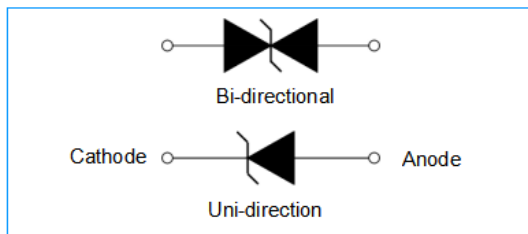
Transmission systems,  
Instruments, meters,  
Communication products,  
Control panels, GPS navigators .

| Parameter                                                                              | Symbol         | Value          | Unit             |
|----------------------------------------------------------------------------------------|----------------|----------------|------------------|
| Peak Pulse Power Dissipation with a 10/1000 $\mu$ s waveform (Fig.1)(Note 1), (Note 2) | $P_{PPM}$      | 30000          | Watts            |
| Peak Pulse Current with a 10/1000 $\mu$ 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             |
| Operating junction and Storage Temperature Range.                                      | $T_J, T_{STG}$ | -55 to +150    | $^\circ\text{C}$ |

**Notes:**

1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4.  $V_F < 3.5\text{V}$  for  $V_{BR} < 200\text{V}$  and  $V_F < 6.5\text{V}$  for  $V_{BR} > 201\text{V}$ .

### Functional Diagram



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

Figure 1 - Peak Pulse Power Rating Curve

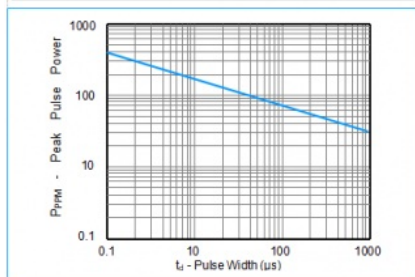


Figure 2 - Pulse Derating Curve

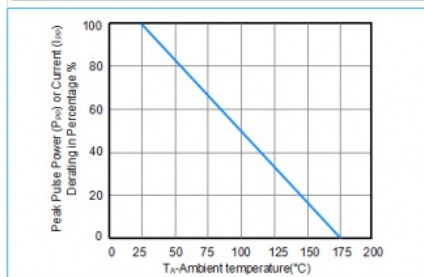


Figure 3 - Pulse Waveform

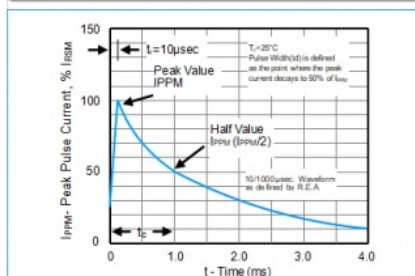


Figure 4 - Typical Junction Capacitance

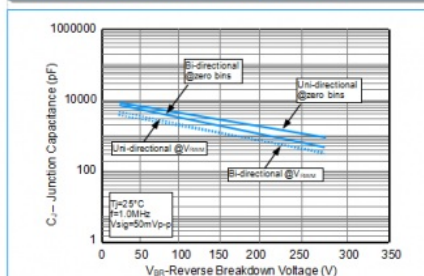


Figure 5 - Steady State Power Derating Curve

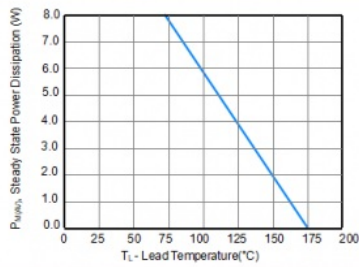
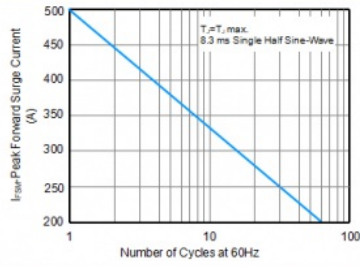
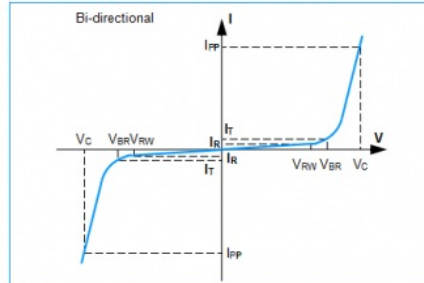
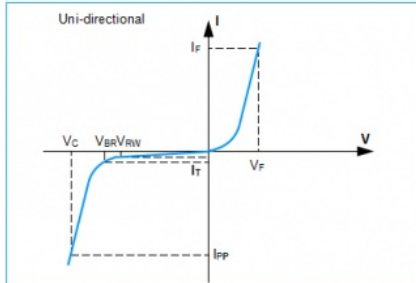


Figure 6 - Maximum Non-Repetitive Surge Current



## I-V Curve Characteristics



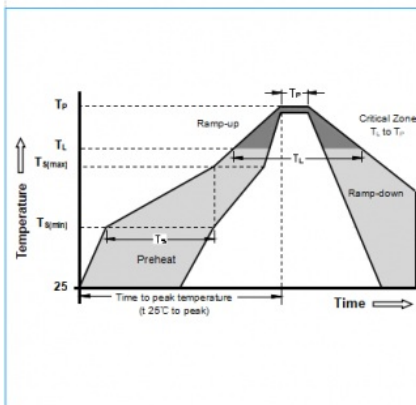
## Physical Specifications

|          |                                                              |
|----------|--------------------------------------------------------------|
| 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

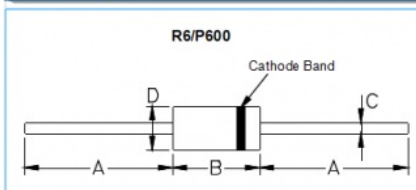
|                    |             |
|--------------------|-------------|
| Temperature Cycle  | JESD22-A104 |
| Pressure Cooker    | JESD22-A102 |
| High Temp. Storage | JESD22-A103 |
| HTRB               | JESD22-A108 |
| Thermal Shock      | JESD22-A106 |

## Soldering Parameters



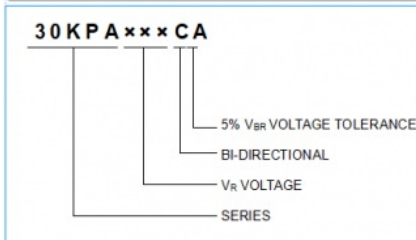
|                                                      |                                               |
|------------------------------------------------------|-----------------------------------------------|
| Reflow Condition                                     | Lead-free assembly                            |
| Pre Heat                                             | -Temperature Min ( $T_{s(min)}$ ) 150°C       |
|                                                      | -Temperature Max ( $T_{s(max)}$ ) 200°C       |
|                                                      | -Time (min to max) ( $T_d$ ) 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

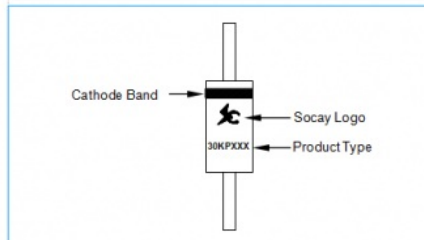


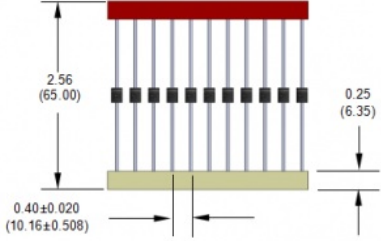
| Dimensions | Inches |       | Millimeters |      |
|------------|--------|-------|-------------|------|
|            | Min    | Max   | Min         | Max  |
| A          | 1.000  | -     | 25.40       | -    |
| B          | 0.340  | 0.360 | 8.64        | 9.14 |
| C          | 0.048  | 0.052 | 1.22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

## Part Numbering



## Part Marking



| Packaging                                                                         |                   |          |                  |
|-----------------------------------------------------------------------------------|-------------------|----------|------------------|
| Part Number                                                                       | Component Package | Quantity | Packaging Option |
| 30KPAXXXX                                                                         | R6/P600           | 250 pcs  | Box              |
| Packaging Dimensions Unit: Inches (Millimeters)                                   |                   |          |                  |
|  |                   |          |                  |

### FAQ

Q1. Can I have a sample order ?

A: Yes, we welcome sample order to test and check quality. Mixed samples are acceptable.

Q2. What about the lead time?

A: Sample needs 1 days, mass production time needs 1-2 weeks for order quantity more than

Q3. Do you have any MOQ ?

A: MOQ depend on the type of product, 1pc for sample checking is available

Q4. How do you ship the goods and how long does it take to arrive?

A: We usually ship by DHL, UPS, FedEx or TNT. It usually takes 3-5 days to arrive. Airline and sea shipping also optional.

Q5. How to proceed an order ?

A: Firstly let us know your requirements or application.

Secondly We quote according to your requirements or our suggestions.

Thirdly customer confirms the samples and places deposit for formal order.

Fourthly We arrange the production.

Q6: Do you offer guarantee for the products?

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