

RoHS Compliant Product

www.DataSheet4U.net

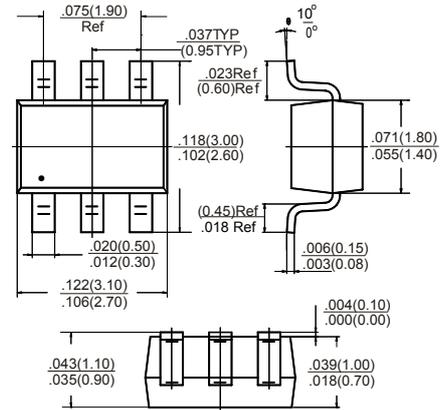
## DESCRIPTION

- . Designed to protect voltage sensitive components from ESD.
- . Excellent clamping capability, low leakage and fast response.
- . Cellular phones, MP3 players, digital cameras ... etc.
- . Suitable for electronics where board space is a major design consideration.

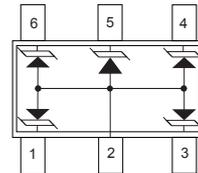
## FEATURES

- . Response time is typically < 1 ns
- . Low leakage
- . Stand-off voltage:5.0V
- . Ultra Low Capacitance : 22pF
- . IEC61000-4-2 level 4 ESD protection

TSOP-6



Dimensions in inches and (millimeters)



## MAXIMUM RATINGS

Rating 25°C ambient temperature unless otherwise specified.

| TYPE NUMBER                                      | SYMBOL                            | LIMITS     | UNITS |
|--|-----------------------------------|------------|-------|
| IEC61000-4-2, Level 4 (ESD)                      | Air Contact                       | >15<br>>8  | kV    |
| Pack Pulse power tp=8/20us                       | Ppp                               | 40         | W     |
| Pack Pulse Current tp=8/20us                     | Ipp                               | 3.5        | A     |
| Lead Solder Temperature - Max. (10 sec duration) | T <sub>L</sub>                    | 260        | °C    |
| Thermal Resistance Junction-to-ambient           | R <sub>θJA</sub>                  | 430        | °C/W  |
| Junction and Storage Temperature Range           | T <sub>J</sub> , T <sub>STG</sub> | -55 ~ +150 | °C    |
| Total Power Dissipation on FR-5 board (Note 2)   | P <sub>D</sub>                    | 150        | mW    |

Stresses exceeding "Maximum Ratings" may damage the device. "Maximum Ratings" are stress ratings only. Functional operation above the recommended. Operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

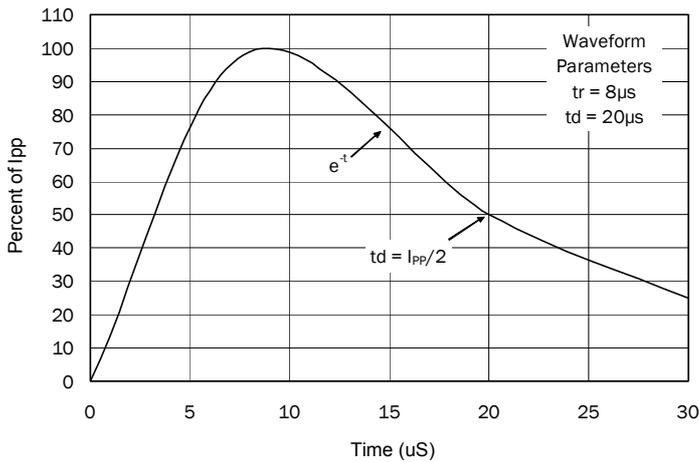
2. Only 1 diode under power. For all 4 diodes under power, P<sub>D</sub> will be 25%. Mounted on FR-4 board with min pad.

## ELECTRICAL CHARACTERISTICS (T = 25°C unless otherwise noted, Per Diode)

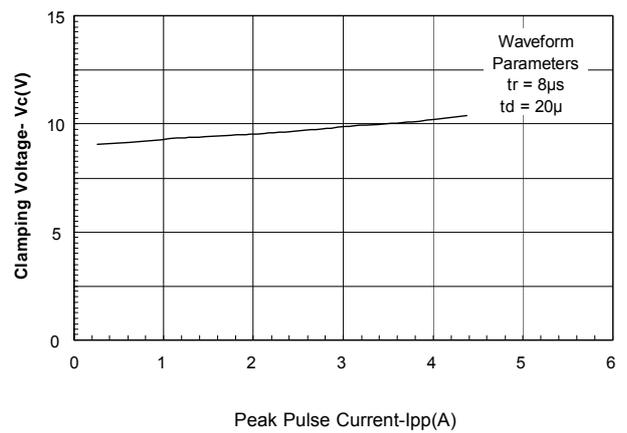
| TYPE NUMBER               | SYMBOL           | Min. | Typ. | Max. | UNIT | TEST CONDITIONS             |
|---------------------------|------------------|------|------|------|------|-----------------------------|
| Reverse Stand-Off Voltage | V <sub>RWM</sub> | -    | -    | 5.0  | V    |                             |
| Reverse Leakage Current   | I <sub>R</sub>   | -    | 10   | 35   | nA   | V <sub>RWM</sub> = 5 V      |
| Peak Pulse Current        | I <sub>PP</sub>  | -    | -    | 3.5  | A    |                             |
| Clamping Voltage          | V <sub>C</sub>   | -    | -    | 9.5  | V    | I <sub>PP</sub> = 1 A       |
| Clamping Voltage          | V <sub>C</sub>   | -    | -    | 11   | V    | I <sub>PP</sub> = 2.5A      |
| Clamping Voltage          | V <sub>C</sub>   | -    | -    | 12   | V    | I <sub>PP</sub> = 3.5A      |
| Reverse Breakdown Voltage | V <sub>BR</sub>  | 6.1  | -    | 7.2  | V    | I <sub>T</sub> = 1mA,       |
| Test Current              | I <sub>T</sub>   | -    | 1.0  | -    | mA   |                             |
| Diode Capacitance         | Cd               | -    | 22   | 28   | pF   | F=1MHz, V <sub>R</sub> =0V. |

## ELECTRICAL CHARACTERISTIC CURVES

Pulse Waveform



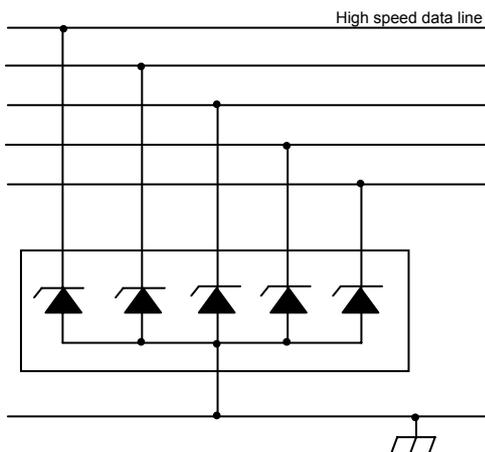
Clamping Voltage vs. Peak Pulse Current



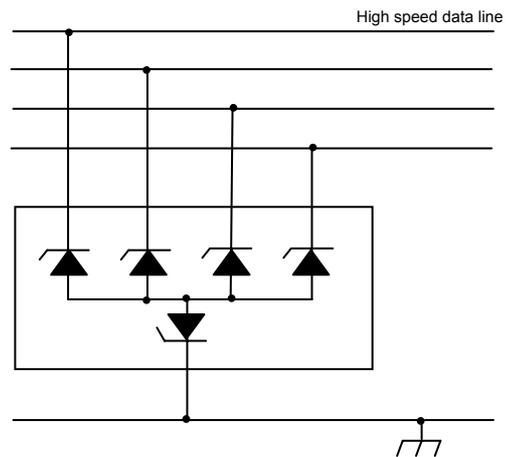
## Application Information

The SK05V5 is designed for the uni-direction of up to five lines of bi-direction protection of four lines from the damage caused by Electronic Discharge (ESD) and surge pulses.

The SK05V5 may be used on line where the signal polarities are above or below ground. KS05V5 can withstand and provides protection from a surge of 40 watts peak pulse power per line for a 8/20 us waveform



Typical application for uni-directional protection of five lines



Typical application for bi-directional protection of four lines