

## CPDK5V0U-HF (RoHS Device)

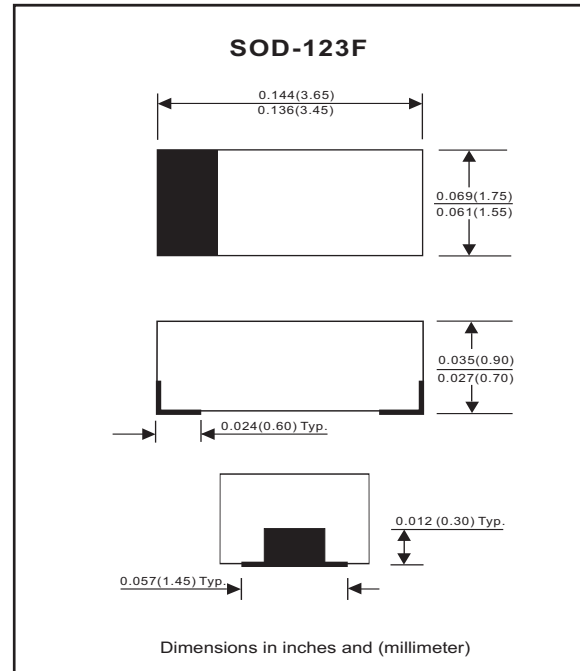


### Features

- Halogen free.
- Uni-directional ESD protection
- IEC 61000-4-2 15kV(contact), 20kV(air).
- Working voltage:5V
- Surface mount package.
- High component density.

### Mechanical data

- Case:SOD-123F standard package ,  
molded plastic.
- Terminals: Gold plated, solderable per  
MIL-STD-750, method 2026.
- Marking Code: Cathode band & E05
- Mounting position: Any.
- Weight: 0.011 gram (approx.).



### Maximum Rating AND Electrical Characteristics (at TA=25 °C unless otherwise noted)

| Parameter               | Conditions                                                                                    | Symbol           | Min | Typ | Max         | Unit |
|-------------------------|-----------------------------------------------------------------------------------------------|------------------|-----|-----|-------------|------|
| Forward voltage         | I <sub>F</sub> = 10mA                                                                         | V <sub>F</sub>   |     | 0.8 |             | V    |
| Diode breakdown voltage | I <sub>R</sub> = 1mA                                                                          | V <sub>BD</sub>  | 6   |     |             | V    |
| Leakage current         | V <sub>R</sub> = 5V                                                                           | I <sub>L</sub>   |     | 0.3 | 2.0         | uA   |
| Junction capacitance    | V <sub>R</sub> = 0V, f = 1MHz                                                                 | C <sub>T</sub>   |     | 90  | 120         | pF   |
| ESD capability          | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                                                  | ESD              |     |     | 20<br>15    | kV   |
| Clamping voltage        | I <sub>PP</sub> = 5A, T <sub>P</sub> =8/20us<br>I <sub>PP</sub> = 16A, T <sub>P</sub> =8/20us | V <sub>C</sub>   |     |     | 9.8<br>12.5 | V    |
| Peak pulse power        |                                                                                               | P <sub>PP</sub>  |     |     | 200         | W    |
| Operation temperature   |                                                                                               | T <sub>J</sub>   |     |     | 125         | °C   |
| Storage temperature     |                                                                                               | T <sub>STG</sub> | -55 |     | 150         | °C   |

## RATING AND CHARACTERISTIC CURVES (CPDK5V0U-HF)

Fig. 1 - 8/20us Peak pulse current waveform acc. IEC 61000-4-5

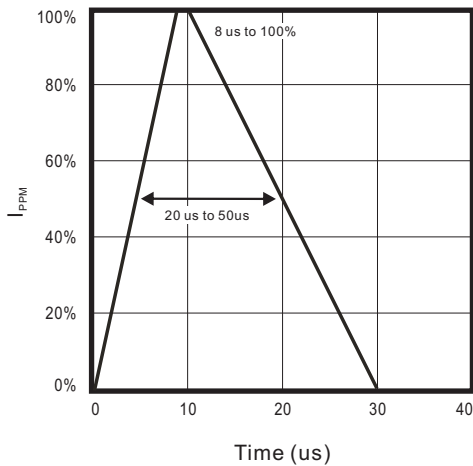


Fig. 2 - Power rating derating curve

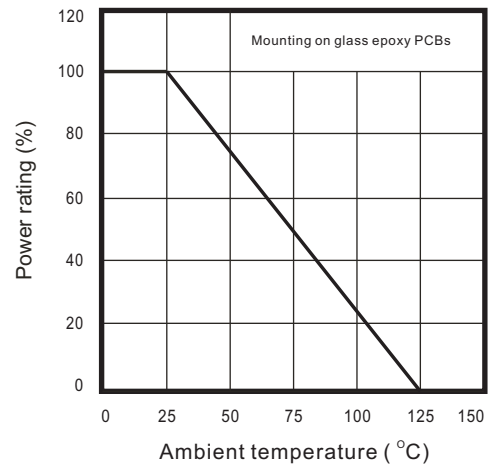


Fig. 3 - Clamping voltage vs. peak pulse current

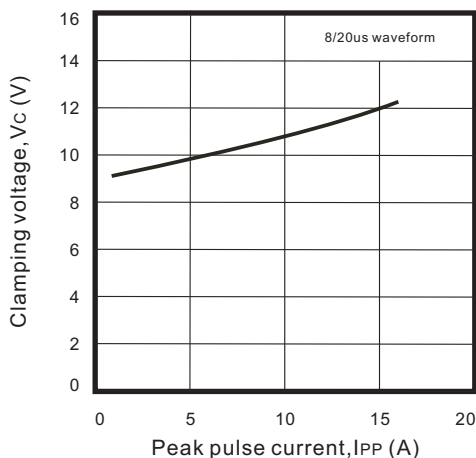


Fig. 4 - Forward voltage vs. forward current

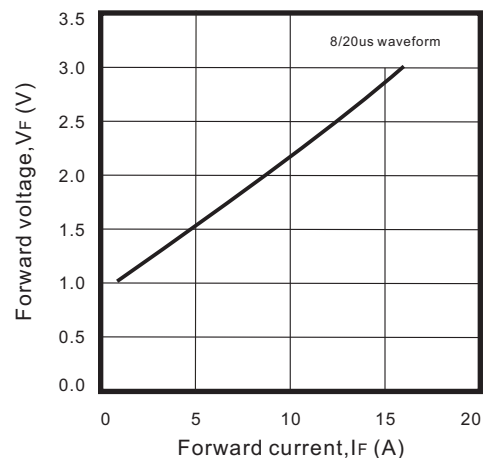


Fig. 5 - Capacitance between terminals characteristics

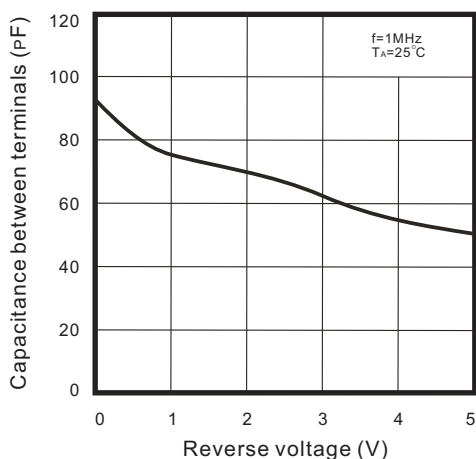
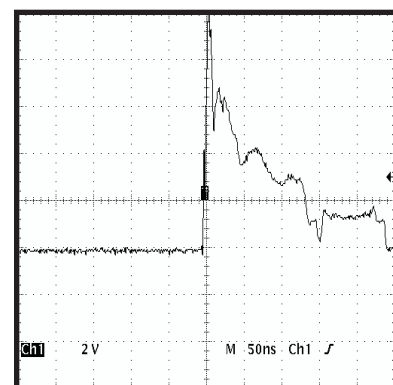
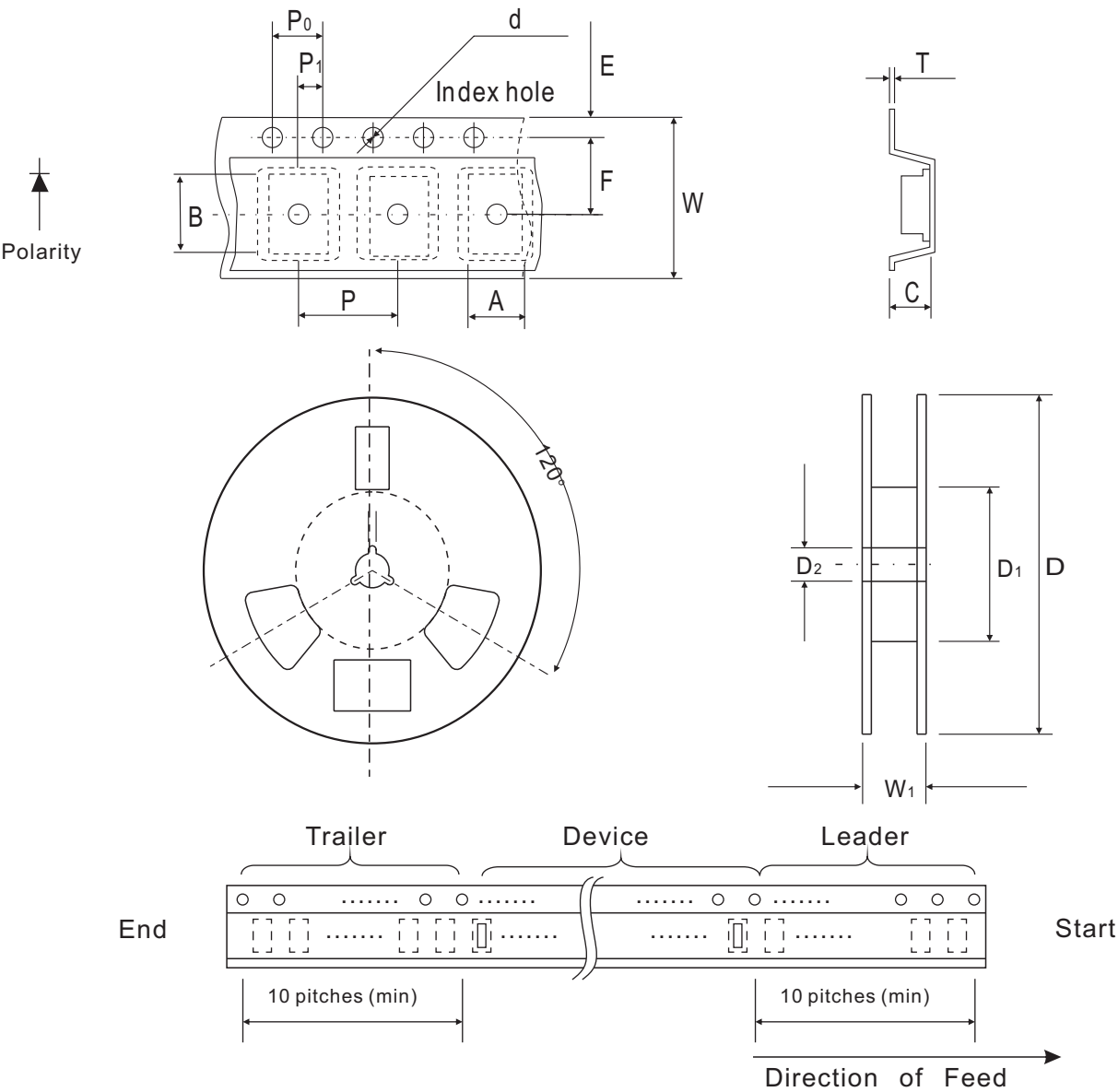


Fig. 6 - ESD Clamping (8kv Contant per IEC 61000-4-2)



Reel Taping Specification



|               |        |               |               |               |               |              |                |                |
|---------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| K<br>SOD-123F | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|               | (mm)   | 1.90 ± 0.10   | 3.80 ± 0.10   | 1.05 ± 0.10   | 1.55 ± 0.10   | 178 ± 1      | 60.0 MIN.      | 13.0 ± 0.20    |
|               | (inch) | 0.075 ± 0.004 | 0.150 ± 0.004 | 0.041 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 2.362 MIN.     | 0.512 ± 0.008  |

|               |        |               |               |               |                |                |               |               |                |
|---------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| K<br>SOD-123F | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | T             | W             | W <sub>1</sub> |
|               | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.05    | 0.22 ± 0.05   | 8.00 ± 0.20   | 13.5 MAX.      |
|               | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX.     |

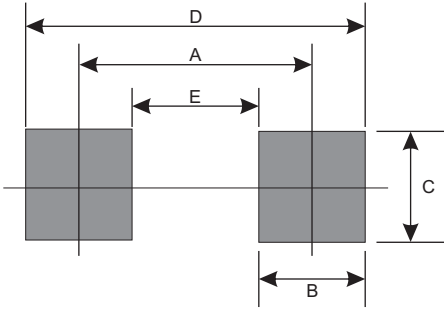
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| CPDK5V0U-HF | E05          |



Suggested PAD Layout

| SIZE | K/SOD-123F |        |
|------|------------|--------|
|      | (mm)       | (inch) |
| A    | 3.45       | 0.136  |
| B    | 1.30       | 0.051  |
| C    | 1.60       | 0.063  |
| D    | 4.75       | 0.187  |
| E    | 2.15       | 0.085  |



Standard Package

| Case Type  | Qty per Reel | Reel Size |
|------------|--------------|-----------|
|            | (Pcs)        | (inch)    |
| K/SOD-123F | 4000         | 7         |