

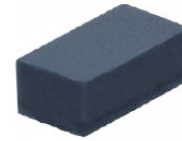


# THE DATASHEET OF CPDFR5V0R-HF



## CPDFR5V0R-HF

RoHS Device  
Halogen Free

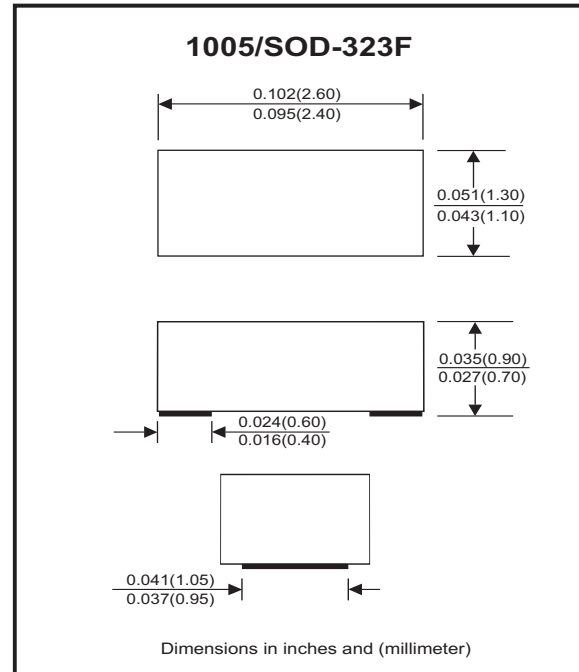


### Features

- Bi-directional ESD protection.
- IEC61000-4-2(ESD); ±30kV(contact)
- Surface mount package.
- Operating voltage: 5V

### Mechanical data

- Case: 1005/SOD-323F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750,method 2026
- Mounting position: Any
- Weight: 0.006 grams(approx.).



### Circuit Diagram



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

| Parameter                   | Conditions              | Symbol           | Value    | Unit |
|-----------------------------|-------------------------|------------------|----------|------|
| Peak pulse power            | T <sub>P</sub> = 8/20us | P <sub>PP</sub>  | 150      | W    |
| Peak pulse current          | T <sub>P</sub> = 8/20us | I <sub>PP</sub>  | 11       | A    |
| ESD capability              | IEC 61000-4-2(air)      | ESD              | ±30      | kV   |
|                             | IEC 61000-4-2(contact)  | ESD              | ±30      |      |
| Operation temperature range |                         | T <sub>J</sub>   | -40~+150 | °C   |
| Storage temperature range   |                         | T <sub>STG</sub> | -40~+150 | °C   |

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

| Parameter                    | Conditions                                     | Symbol           | Min | Typ | Max | Unit |
|------------------------------|--|------------------|-----|-----|-----|------|
| Working peak reverse voltage |  | V <sub>RWM</sub> |     |     | 5   | V    |
| Diode breakdown voltage      | I <sub>T</sub> = 1mA                           | V <sub>BR</sub>  | 5.6 |     | 9.4 | V    |
| Reverse current              | V <sub>RWM</sub> = 5V                          | I <sub>R</sub>   |     | 5   | 90  | nA   |
| Clamping voltage             | I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us  | V <sub>C</sub>   |     |     | 8   | V    |
|                              | I <sub>PP</sub> = 11A, T <sub>P</sub> = 8/20us | V <sub>C</sub>   |     |     | 14  | V    |
| Junction capacitance         | V <sub>R</sub> = 0V, f = 1MHz                  | C <sub>J</sub>   |     | 20  | 30  | pF   |

## RATING AND CHARACTERISTIC CURVES (CPDFR5V0R-HF)

Fig. 1 - Reverse Characteristics

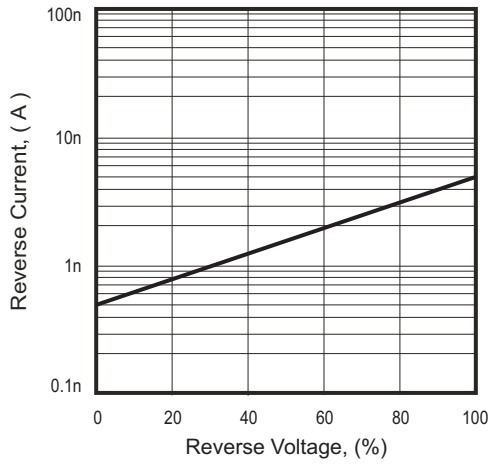


Fig. 2 - Capacitance Between Terminals Characteristics

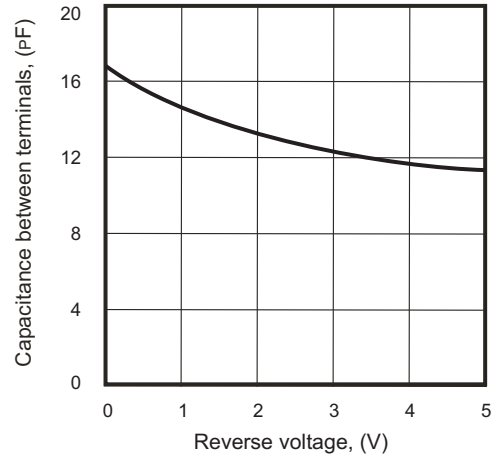


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

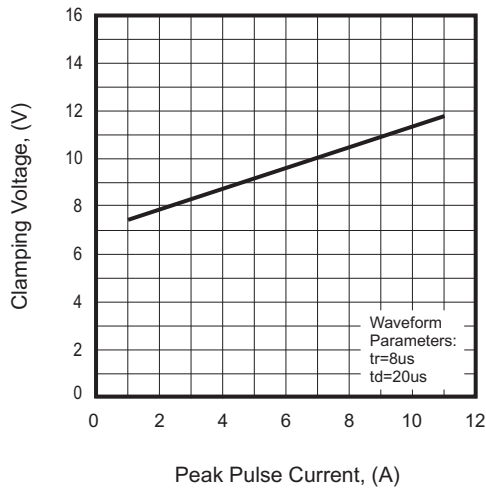
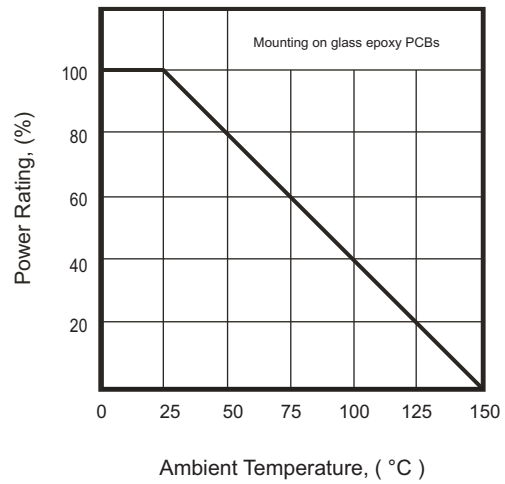
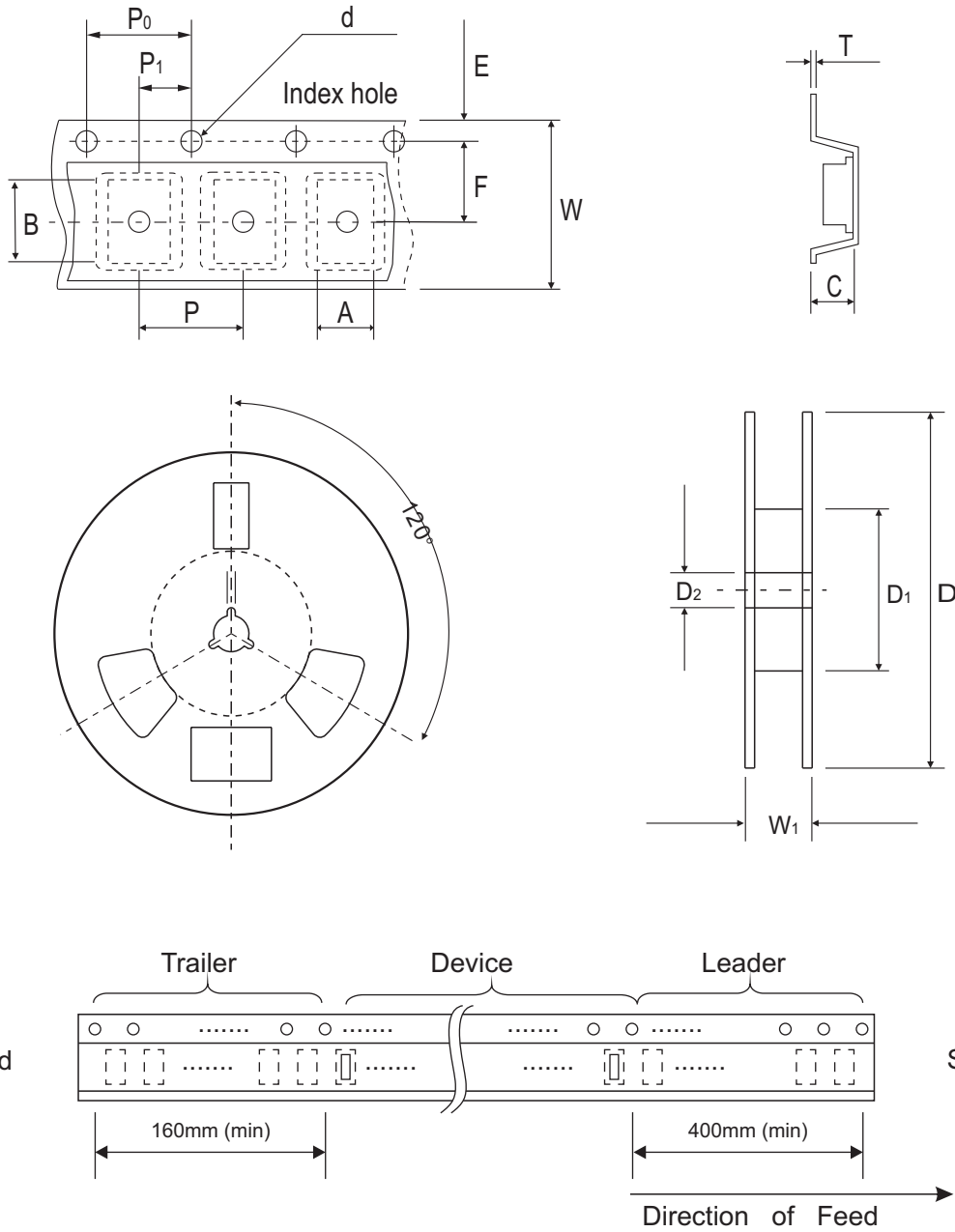


Fig. 4 - Power Rating Derating Curve



## Reel Taping Specification



| 1005<br>(SOD-323F) | SYMBOL | A             | B             | C             | d                  | D             | D <sub>1</sub> | D <sub>2</sub> |
|--------------------|--------|---------------|---------------|---------------|--------------------|---------------|----------------|----------------|
|                    | (mm)   | 1.45 ± 0.05   | 2.80 ± 0.05   | 1.00 ± 0.05   | 1.50 +0.10<br>-0   | 178.00 ± 1.00 | 60.0 ± 0.50    | 13.50 ± 0.20   |
|                    | (inch) | 0.057 ± 0.002 | 0.110 ± 0.002 | 0.039 ± 0.002 | 0.059 +0.004<br>-0 | 7.008 ± 0.039 | 2.362 ± 0.020  | 0.531 ± 0.008  |

| 1005<br>(SOD-323F) | 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    | 0.23 ± 0.05   | 8.00 ± 0.10   | 12.00 +0.50<br>-0  |
|                    | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.002  | 0.009 ± 0.002 | 0.315 ± 0.004 | 0.472 +0.020<br>-0 |

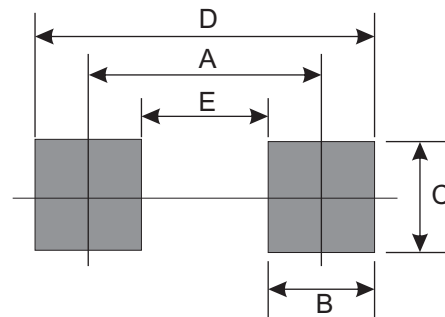
## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| CPDFR5V0P-HF | E5R          |



## Suggested PAD Layout

| SIZE | 1005/SOD-323F |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 2.00          | 0.079  |
| B    | 0.70          | 0.028  |
| C    | 1.30          | 0.051  |
| D    | 2.70          | 0.106  |
| E    | 1.30          | 0.051  |



## Standard Packaging

| Case Type     | Qty Per Reel | Reel Size |
|---------------|--------------|-----------|
|               | (Pcs)        | (inch)    |
| 1005/SOD-323F | 4,000        | 7         |

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