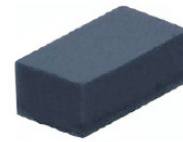


## CPDFR Series-HF

### RoHS Device

### Halogen Free

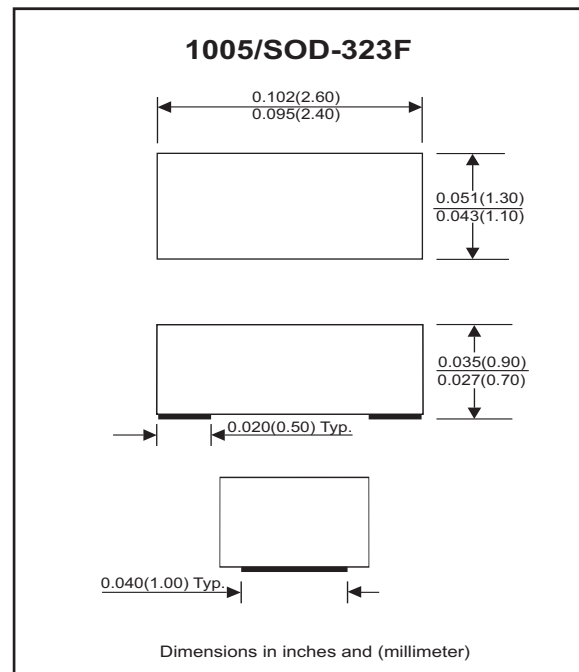


### Features

- Bi-directional ESD protection.
- Surface mount package.
- High component density.

### Mechanical data

- Case: 1005(2512) standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Marking Code:  
CPDFR5V0-HF: E05  
CPDFR12V-HF: E12  
CPDFR24V-HF: E24
- Mounting position: Any.
- Weight: 0.006 gram(approx.).



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

| Parameter               | Conditions                                                                                                                                                                                    | Symbol           | Min             | Typ             | Max              | Unit |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-----------------|------------------|------|
| Diode breakdown voltage | CPDFR5V0-HF<br>CPDFR12V-HF<br>CPDFR24V-HF<br><br>I <sub>R</sub> = 1mA                                                                                                                         | V <sub>BD</sub>  | 5.1<br>13<br>25 | 7.0<br>17<br>28 |                  | V    |
| Leakage current         | CPDFR5V0-HF<br>CPDFR12V-HF<br>CPDFR24V-HF<br><br>V <sub>R</sub> = 5V<br>V <sub>R</sub> = 12V<br>V <sub>R</sub> = 24V                                                                          | I <sub>L</sub>   |                 | 0.1             | 2.0              | uA   |
| Junction capacitance    | CPDFR5V0-HF<br>CPDFR12V-HF<br>CPDFR24V-HF<br><br>V <sub>R</sub> = 0V, f = 1MHz                                                                                                                | C <sub>T</sub>   |                 | 15<br>12<br>10  | 20<br>---<br>--- | pF   |
| ESD capability          | CPDFR Series-HF<br><br>IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                                                                                                                           | ESD              |                 |                 | 16<br>8          | kV   |
| Clamping voltage        | CPDFR5V0-HF<br>CPDFR12V-HF<br>CPDFR24V-HF<br><br>I <sub>PP</sub> = 5A, T <sub>P</sub> =8/20us<br>I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us<br>I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us | V <sub>C</sub>   |                 |                 | 15<br>25<br>47   | V    |
| Peak pulse power        | CPDFR5V0-HF<br>CPDFR12V-HF<br>CPDFR24V-HF<br><br>T <sub>P</sub> =8/20us                                                                                                                       | P <sub>PP</sub>  |                 |                 | 75<br>25<br>47   | W    |
| Operation temperature   | CPDFR Series-HF                                                                                                                                                                               | T <sub>j</sub>   |                 |                 | 125              | °C   |
| Storage temperature     | CPDFR Series-HF                                                                                                                                                                               | T <sub>STG</sub> | -55             |                 | 150              | °C   |

RATING AND CHARACTERISTIC CURVES (CPDFR Series-HF)

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

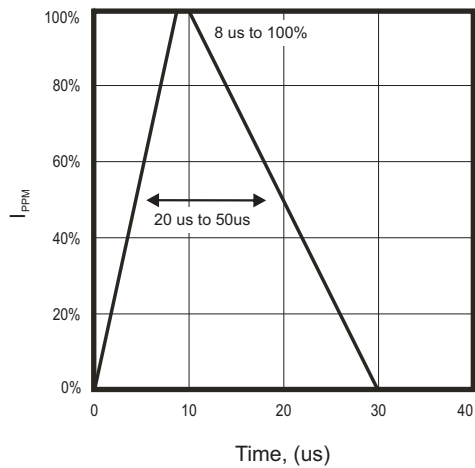


Fig. 2 - Reverse characteristics

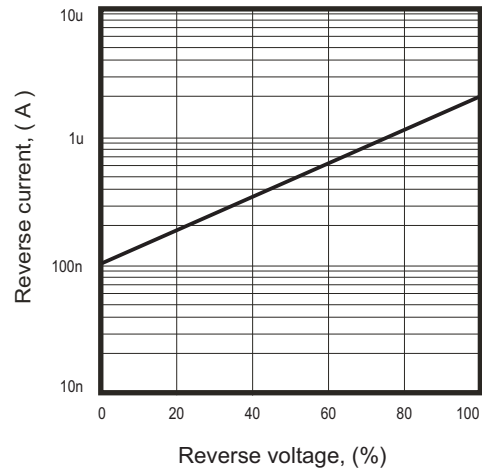


Fig. 3 - Capacitance between terminals characteristics

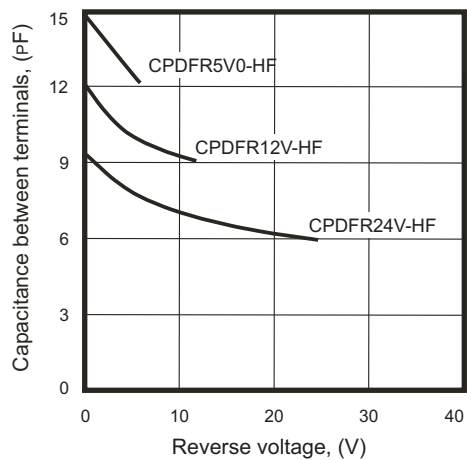
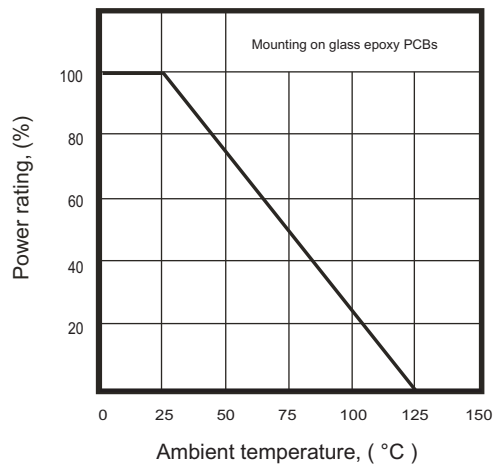
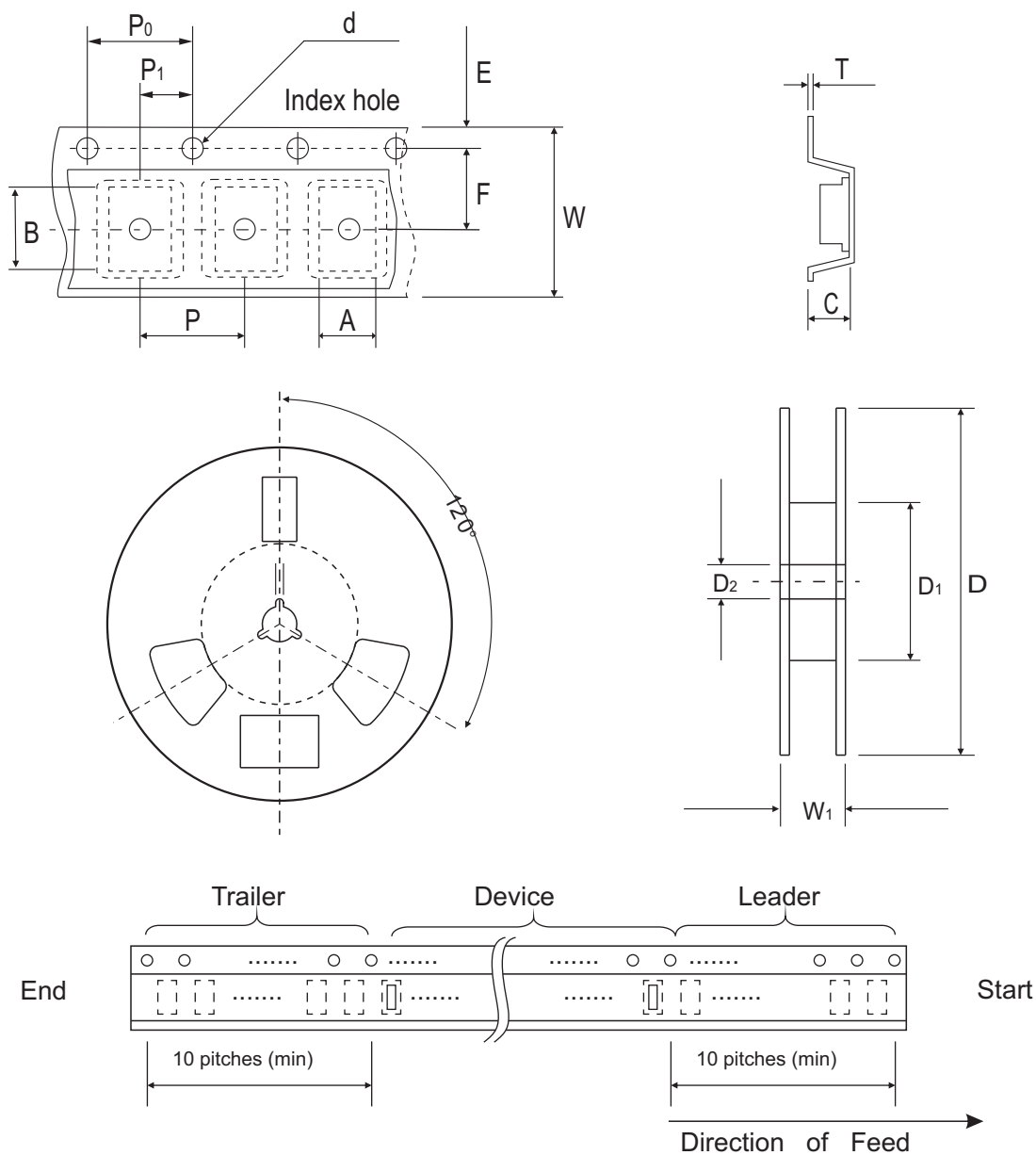


Fig. 4 - Power rating derating curve



Reel Taping Specification



|                    |        |               |               |               |               |              |                |                |
|--------------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| 1005<br>(SOD-323F) | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|                    | (mm)   | 1.55 ± 0.10   | 2.65 ± 0.10   | 1.05 ± 0.10   | 1.55 ± 0.05   | 178 ± 1      | 60.0 MIN.      | 13.0 ± 0.20    |
|                    | (inch) | 0.061 ± 0.004 | 0.104 ± 0.004 | 0.041 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.04 | 2.362 MIN.     | 0.512 ± 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 ± 0.20   | 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

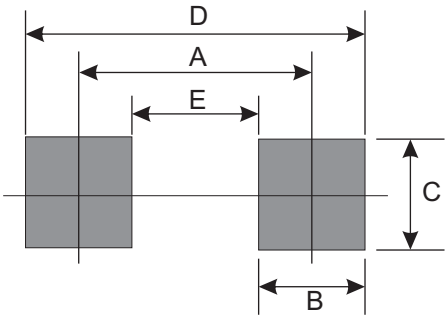
| Part Number | Marking Code |
|-------------|--------------|
| CPDFR5V0-HF | E05          |
| CPDFR12V-HF | E12          |
| CPDFR24V-HF | E24          |



xxx = Product type marking code

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         |

# Mouser Electronics

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