

## CPDFR Series-HF

### RoHS Device

### Halogen Free

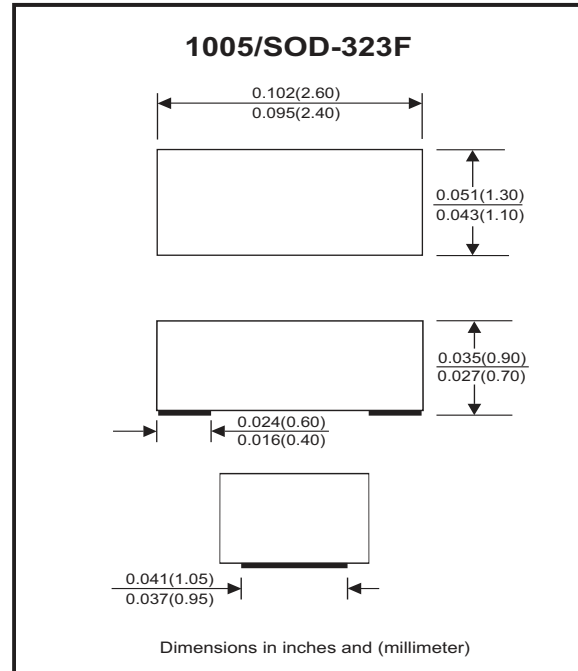


### Features

- 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 grams(approx.).



### Circuit diagram



### Electrical Characteristics (at T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Diode breakdown voltage	CPDFR5V0-HF CPDFR12V-HF CPDFR24V-HF I <sub>R</sub> = 1mA	V <sub>BD</sub>	5.1 13 25	7.0 17 28		V
Leakage current	CPDFR5V0-HF CPDFR12V-HF CPDFR24V-HF V <sub>R</sub> = 5V V <sub>R</sub> = 12V V <sub>R</sub> = 24V	I <sub>L</sub>		0.1	2.0	uA
Junction capacitance	CPDFR5V0-HF CPDFR12V-HF CPDFR24V-HF V <sub>R</sub> = 0V, f = 1MHz	C <sub>T</sub>		15 12 10	20 - -	pF
ESD capability	CPDFR Series-HF IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD			16 8	kV
Clamping voltage	CPDFR5V0-HF CPDFR12V-HF CPDFR24V-HF I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us I <sub>PP</sub> = 5A, T <sub>P</sub> =8/20us I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us	V <sub>C</sub>			10 15 25 47	V
Peak pulse power	CPDFR5V0-HF CPDFR12V-HF CPDFR24V-HF T <sub>P</sub> =8/20us	P <sub>PP</sub>			75 25 47	W
Operation temperature range	CPDFR Series-HF	T <sub>j</sub>	-40		125	°C
Storage temperature range	CPDFR Series-HF	T <sub>STG</sub>	-55		150	°C

## RATING AND CHARACTERISTIC CURVES (CPDFR Series-HF)

Fig.1 - Peak Pulse Current Wave  
Form Acc. IEC 61000-4-5

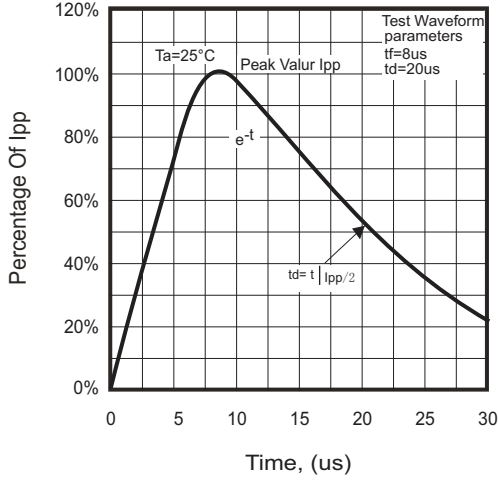


Fig.2-1 - Reverse Characteristics

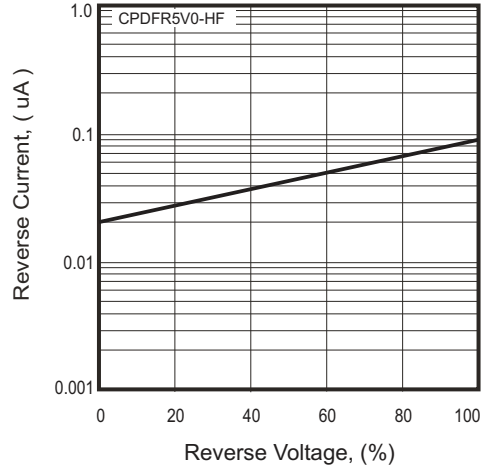


Fig.2-2 - Reverse Characteristics

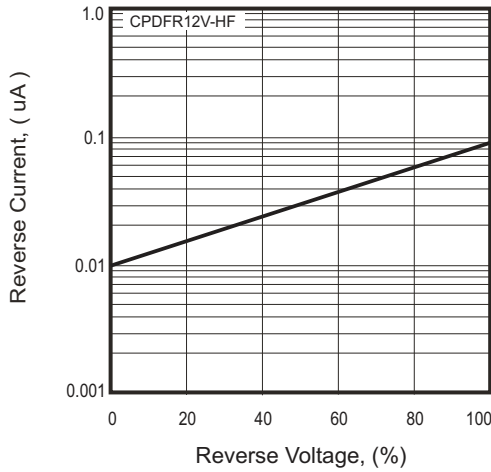


Fig.2-3 - Reverse Characteristics

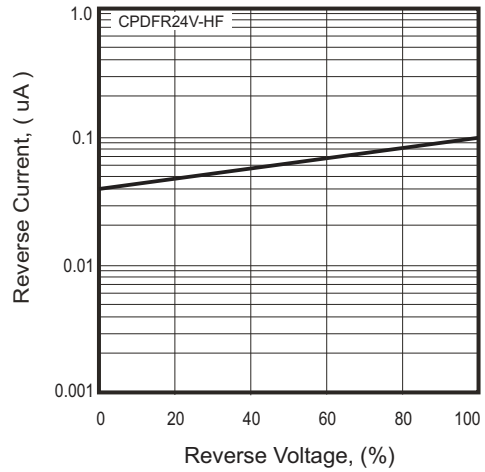


Fig.3 - Capacitance Between  
Terminals Characteristics

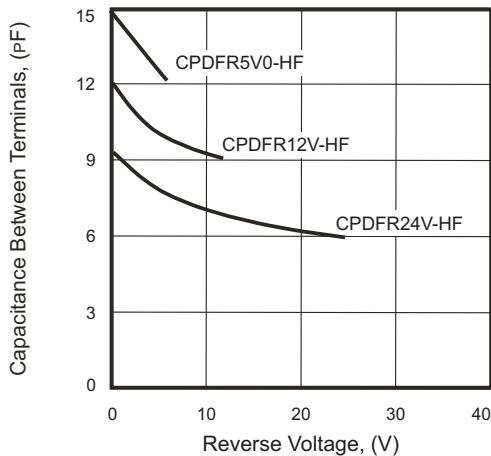
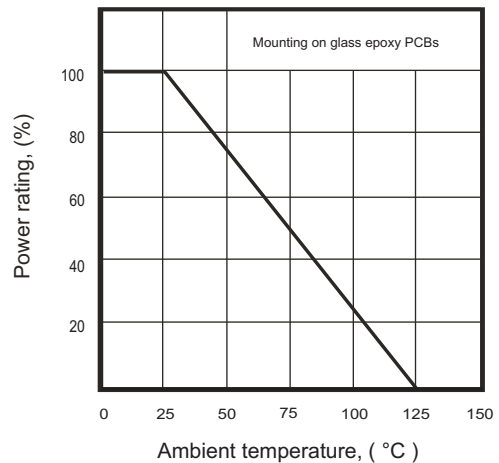
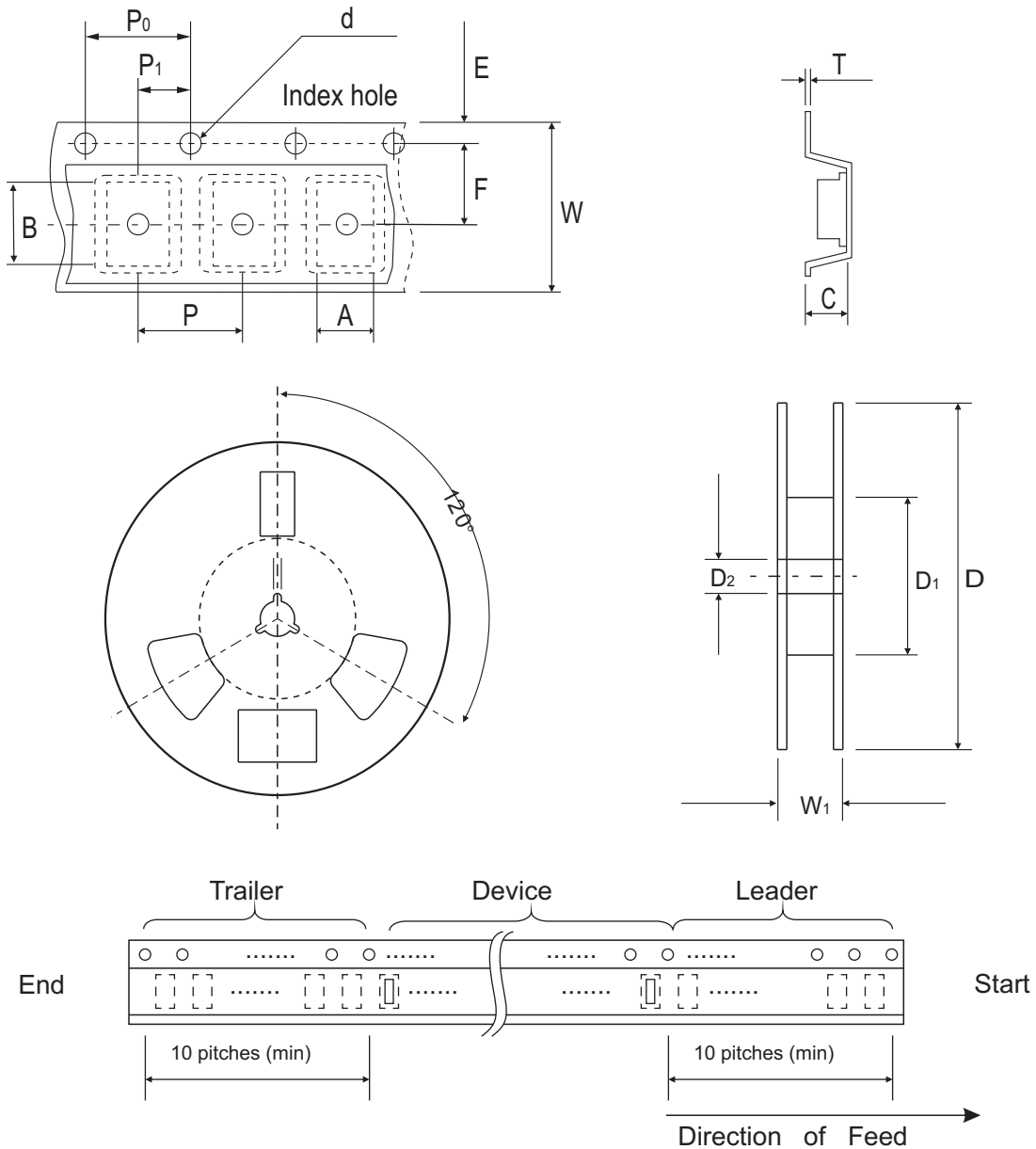


Fig. 4 - Power rating derating curve



## Reel Taping Specification



1005 (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 ± 1.0	60.0 MIN.	13.00 ± 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 (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 ± 0.002	0.009 ± 0.002	0.315 ± 0.008	0.531 MAX.

## Marking Code

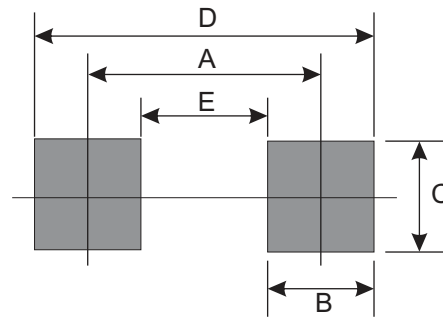
Part Number	Marking Code
CPDFR5V0-HF	E05
CPDFR12V-HF	E12
CPDFR24V-HF	E24



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