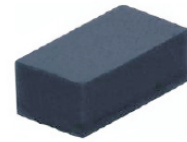


## CPDER Series-HF

### RoHS Device

### Halogen Free

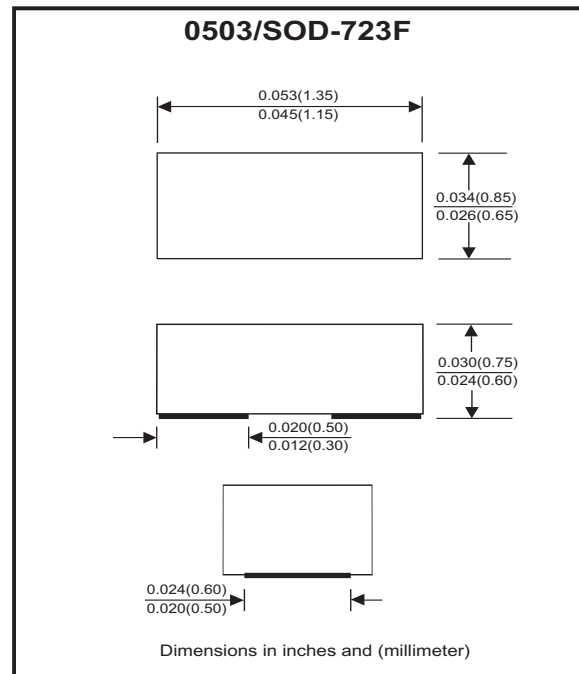


### Features

- Bi-directional ESD protection.
- Surface mount package.
- Ultra small SMD package:0503.
- High component density.

### Mechanical data

- Case: 0503/SOD-723F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750,method 2026.
- Marking Code:
  - CPDER5V0-HF: E05
  - CPDER12V-HF: E12
  - CPDER24V-HF: E24
- Mounting position: Any.
- Weight: 0.002 grams(approx.).



### Circuit Diagram



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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit	
Diode breakdown voltage	CPDER5V0-HF	$I_R = 1\text{mA}$	$V_{BD}$	5.1	7.0		V
	CPDER12V-HF			13	17		
	CPDER24V-HF			25	28		
Leakage current	CPDER5V0-HF	$V_R = 5\text{V}$ $V_R = 12\text{V}$ $V_R = 24\text{V}$	$I_L$		0.1	2.0	$\mu\text{A}$
	CPDER12V-HF						
	CPDER24V-HF						
Junction capacitance	CPDER5V0-HF	$V_R = 0\text{V}, f = 1\text{MHz}$	$C_T$		15	20	$\text{pF}$
	CPDER12V-HF				12	-	
	CPDER24V-HF				10	-	
ESD capability	CPDER Series-HF	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD		16 8	kV	
Clamping voltage	CPDER5V0-HF	$I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$ $I_{PP} = 5\text{A}, T_P = 8/20\mu\text{s}$ $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$ $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$	$V_C$		10	15	V
	CPDER12V-HF				25	47	
	CPDER24V-HF						
Peak pulse power	CPDER5V0-HF CPDER12V-HF CPDER24V-HF	$T_P = 8/20\mu\text{s}$	$P_{PP}$		75 25 47	W	
Operation temperature range	CPDER Series-HF		$T_j$	-40		125	$^{\circ}\text{C}$
Storage temperature range	CPDER Series-HF		$T_{STG}$	-55		150	$^{\circ}\text{C}$

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

Fig.1 - 8/20us Peak Pulse Current Wave Form Acc. IEC 61000-4-5

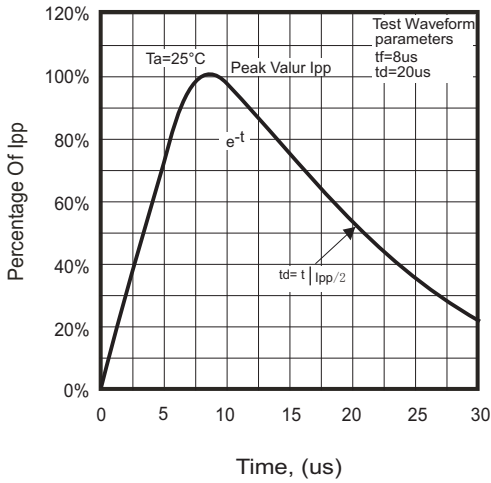


Fig.2-1 - Reverse Characteristics

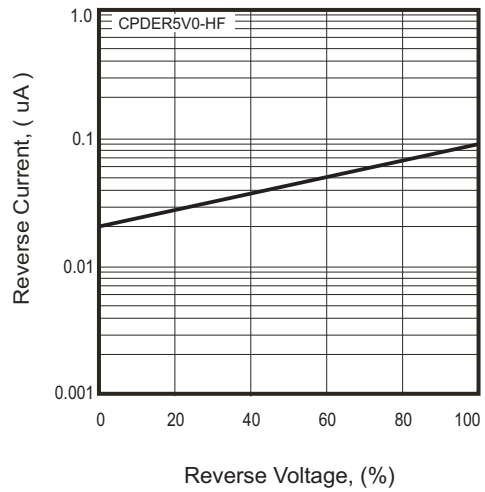


Fig.2-2 - Reverse Characteristics

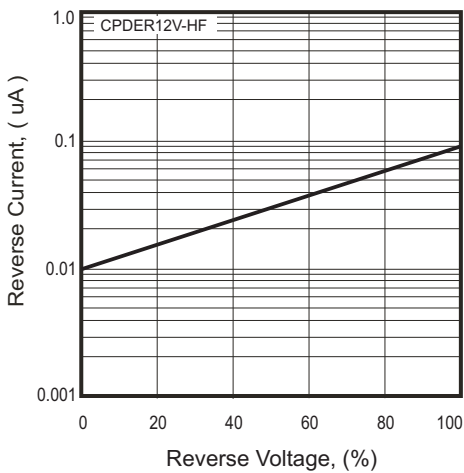


Fig.2-3 - Reverse Characteristics

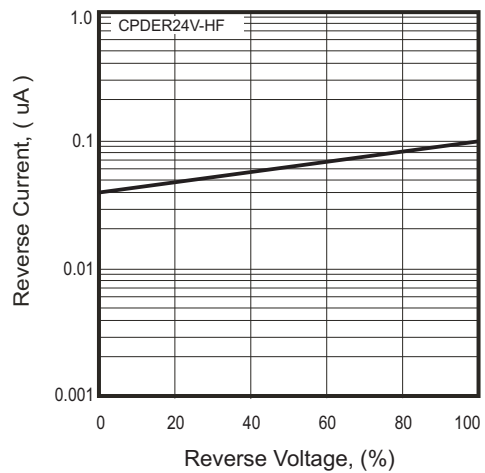


Fig.3 - Capacitance Between Terminals Characteristics

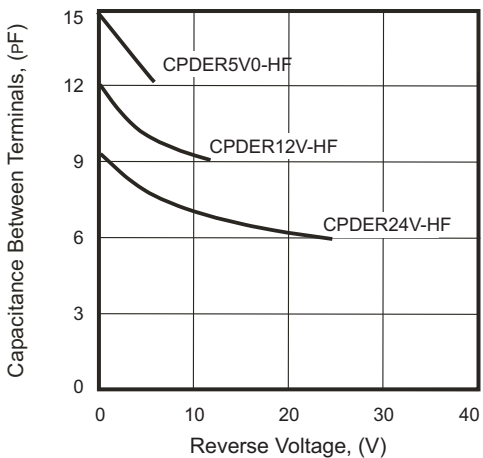
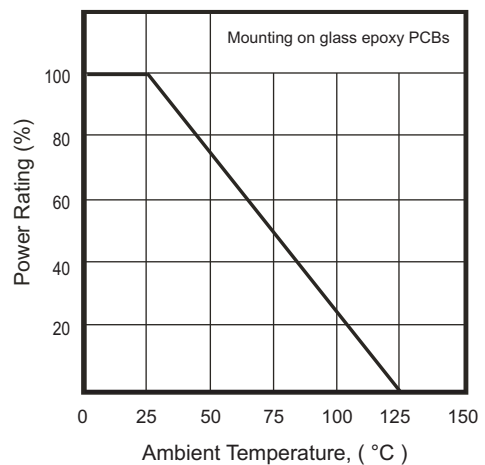
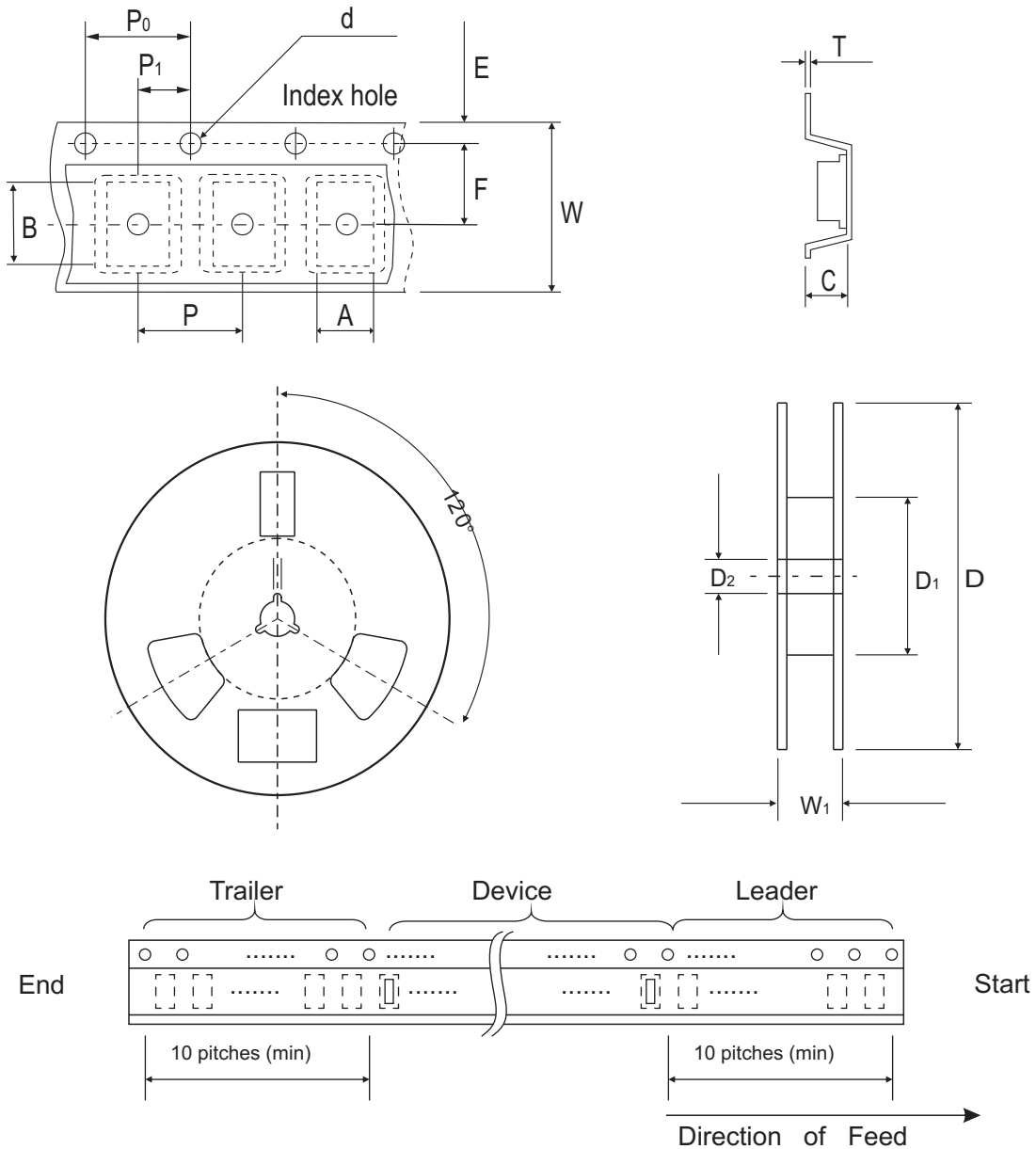


Fig.4 - Power Rating Derating Curve



## Reel Taping Specification



0503 (SOD-723F)	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.90 ± 0.10	1.46 ± 0.10	0.80 ± 0.10	1.55 ± 0.05	178 ± 1	60.0 MIN.	13.0 ± 0.20
	(inch)	0.035 ± 0.004	0.057 ± 0.004	0.031 ± 0.004	0.061 ± 0.002	7.008 ± 0.04	2.362 MIN.	0.512 ± 0.008

0503 (SOD-723F)	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 ± 0.002	0.009 ± 0.002	0.315 ± 0.008	0.531 MAX.

## Marking Code

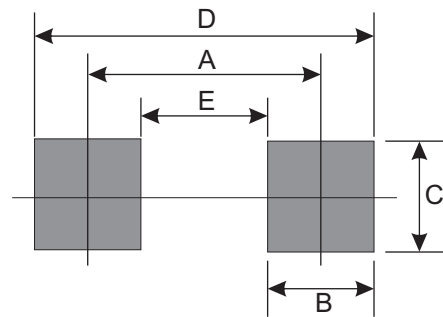
Part Number	Marking Code
CPDER5V0-HF	E05
CPDER12V-HF	E12
CPDER24V-HF	E24



xxx = Product type marking code

## Suggested PAD Layout

SIZE	0503/SOD-723F	
	(mm)	(inch)
A	0.85	0.033
B	0.55	0.022
C	0.85	0.033
D	1.40	0.055
E	0.30	0.012



## Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
0503/SOD-723F	4,000	7

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