

## Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Comchip Technology](#)

[CPDER12V0U-HF](#)

For any questions, you can email us directly:

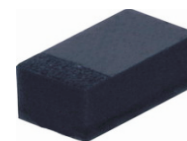
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

## SMD ESD Protection Diode



# CPDER12V0U-HF

RoHS Device  
 Halogen Free

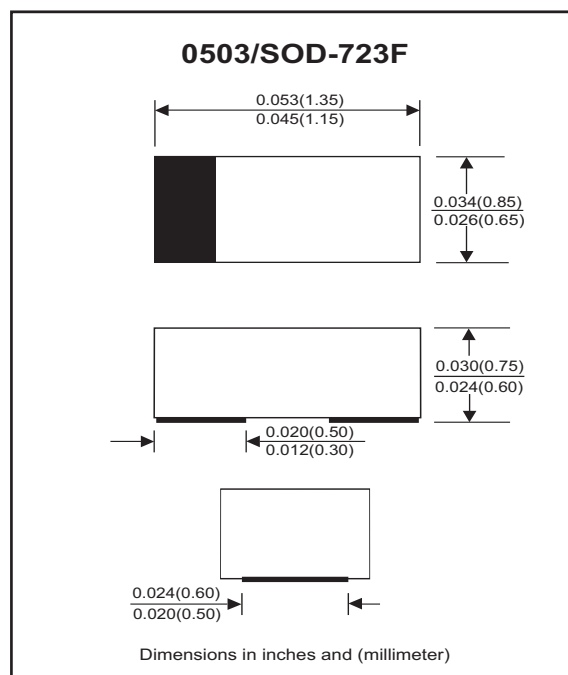


### Features

- Uni-directional ESD protection
- Ultra small SMD package:0503.
- High component density.

### Mechanical data

- Case: 0503/SOD-523F Standard package , molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Marking Code: Cathode band & E12
- Mounting position: Any.
- Weight: 0.002 grams(approx.).



### Circuit Diagram



## 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>	13.3	15.5	17.5	V
Leakage current	V <sub>R</sub> = 12V	I <sub>L</sub>		0.1	1.0	uA
Junction capacitance	V <sub>R</sub> = 0V, f = 1MHz	C <sub>T</sub>			60	pF
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD			30	kV
Clamping voltage	I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us I <sub>PP</sub> = 5A, T <sub>P</sub> =8/20us	V <sub>C</sub>			19 24	V
Peak pulse power		P <sub>PP</sub>			120	W
Operation temperature range		T <sub>J</sub>	-55		125	°C
Storage temperature range		T <sub>STG</sub>	-55		150	°C

# SMD ESD Protection Diode



## RATING AND CHARACTERISTIC CURVES (CPDER12V0U-HF)

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

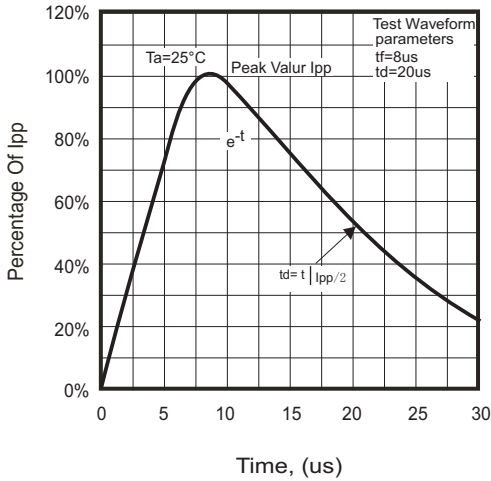


Fig.2 - Power Rating Derating Curve

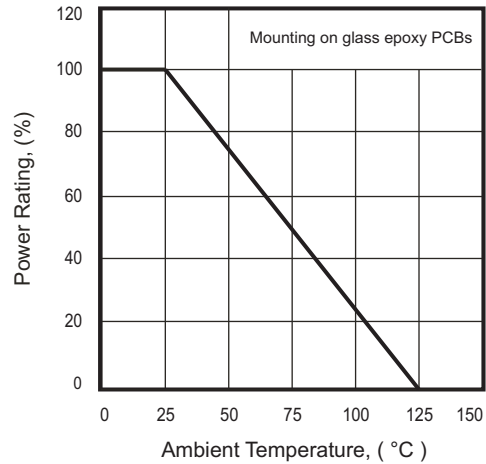


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

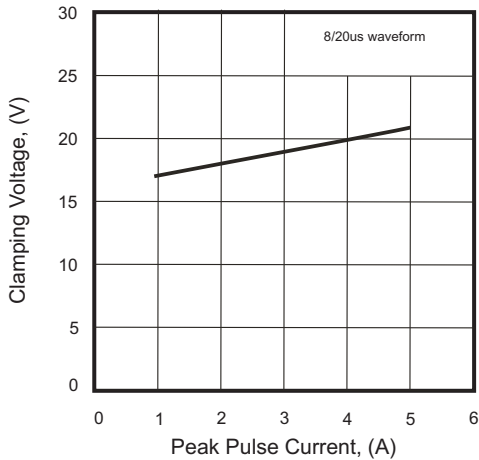


Fig.4 - Clamping Voltage Vs. Forward Peak Pulse Current

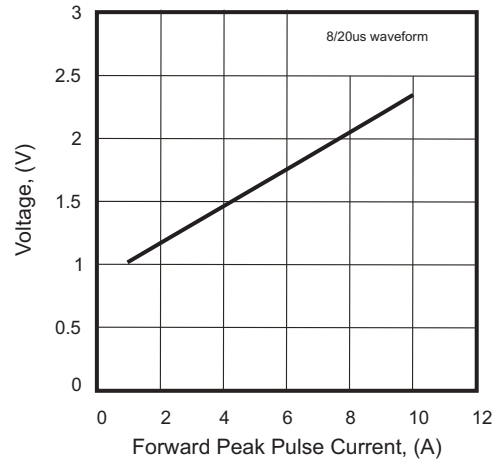
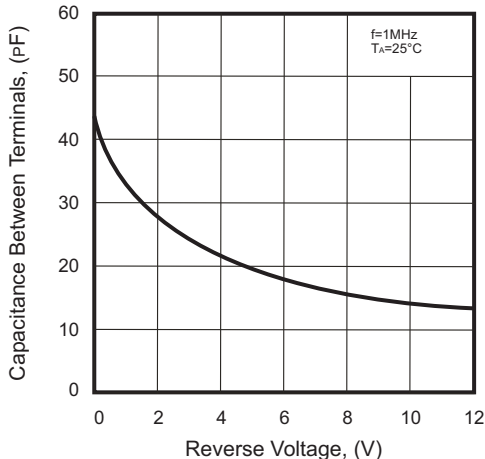


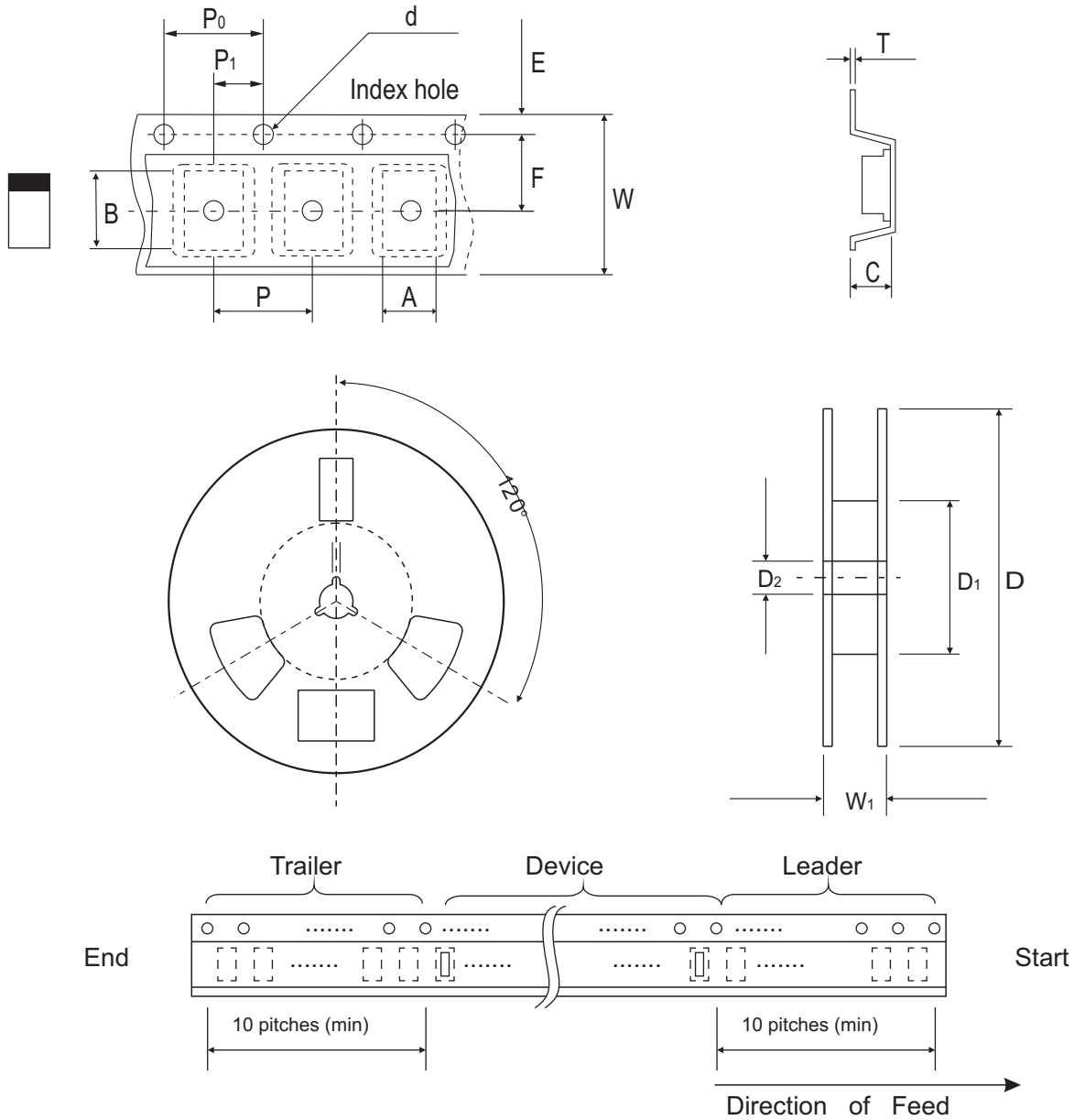
Fig.5 - Capacitance Between Terminals Characteristics



# SMD ESD Protection Diode



## 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	0.314 ± 0.008	0.531 MAX.

## SMD ESD Protection Diode

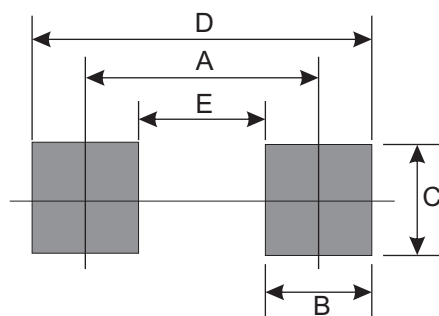
### Marking Code

Part Number	Marking Code
CPDER12V0U-HF	E12



### 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