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## SMD ESD Protection Diode



# ACPDUC5V0U-HF

## RoHS Device

## Halogen Free



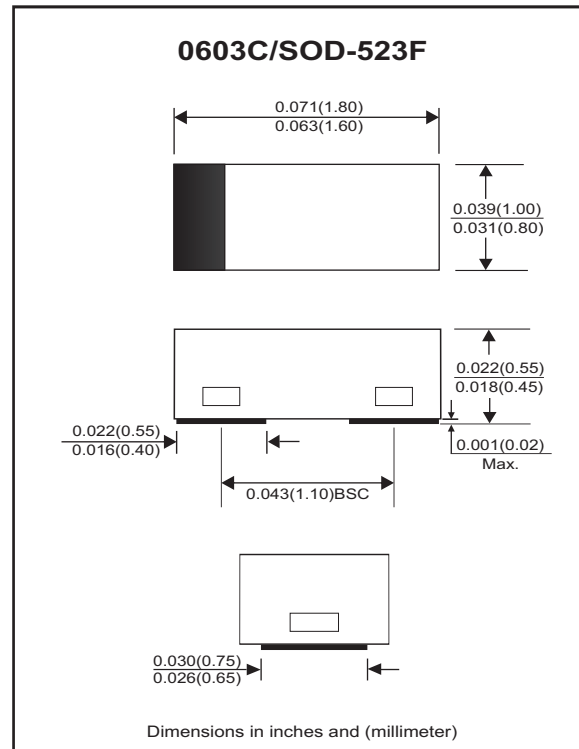
### Features

- Uni-directional ESD protection.
- IEC 61000-4-2 (ESD) ; ±30KV(contact)
- Surface mount package.
- Ultra small SMD package:0603.
- High component density.
- Comply with AEC-Q101

### Mechanical data

- Case: 0603C/SOD-523F standard package, molded plastic.
- Terminals: Matte tin plated, Solderable per MIL-STD-750, Method 2026.
- Mounting position: Any.
- Weight: 0.003 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>	180	W
Peak pulse current	T <sub>P</sub> = 8/20us	I <sub>PP</sub>	15	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~+125	°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>			5.0	V
Forward voltage	I <sub>F</sub> = 10mA	V <sub>F</sub>		0.8	1.2	V
Breakdown voltage	I <sub>T</sub> = 1mA	V <sub>BR</sub>	6			V
Reverse leakage current	V <sub>RWM</sub> = 5V	I <sub>R</sub>		0.2	2.0	μA
Clamping voltage	I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us	V <sub>C</sub>		8	7.6	V
	I <sub>PP</sub> = 5A, T <sub>P</sub> = 8/20us			10	9.4	
	I <sub>PP</sub> = 15A, T <sub>P</sub> = 8/20us				12	
Junction capacitance	V <sub>R</sub> = 0V, f = 1MHz	C <sub>J</sub>		130		pF

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## RATING AND CHARACTERISTIC CURVES (ACP DUC5V0U-HF)

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

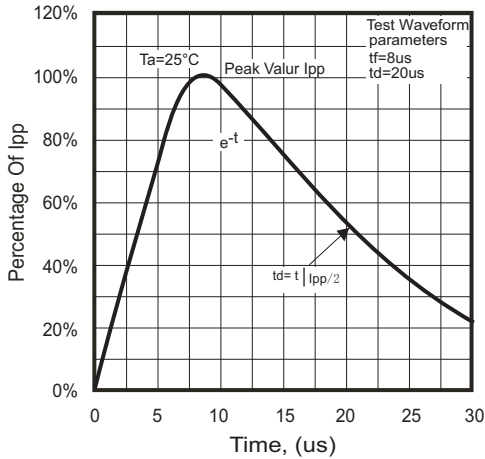


Fig.2 - Power Rating Derating Curve

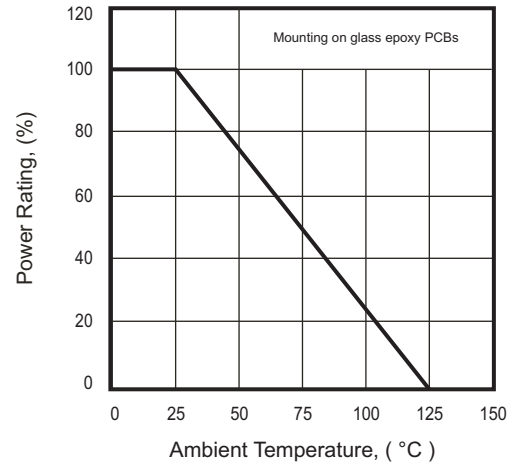


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

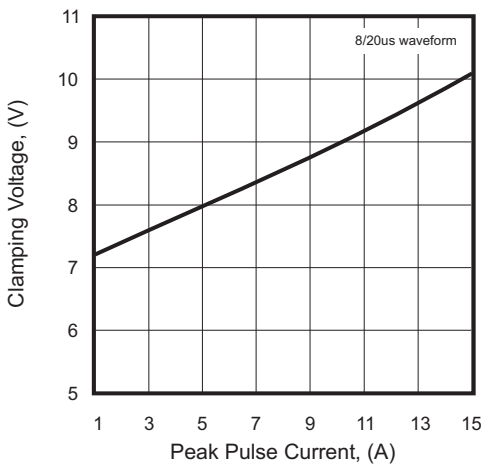


Fig.4 - Forward Characteristic

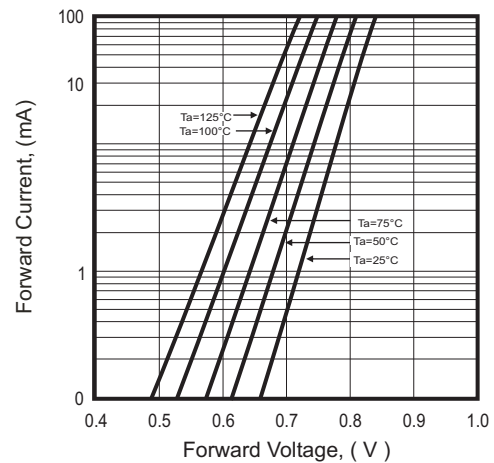
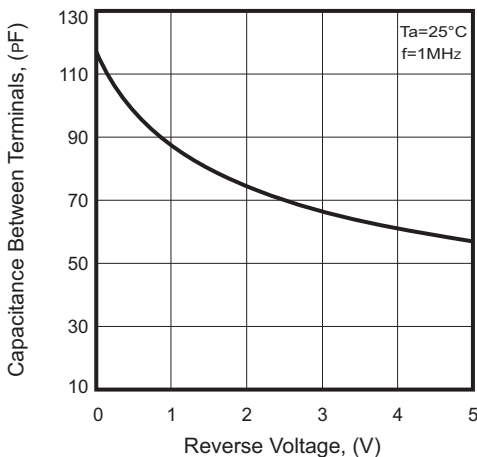


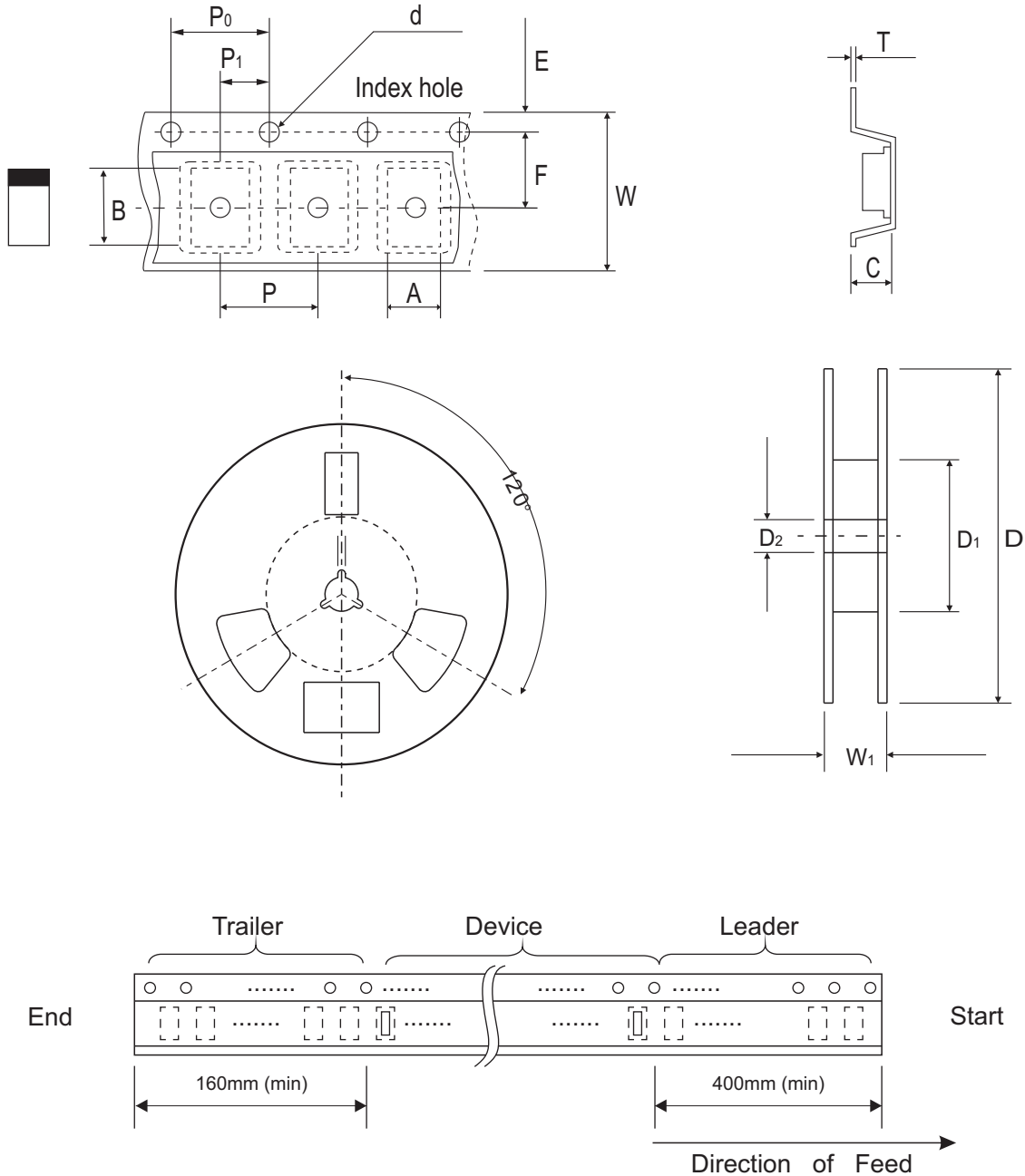
Fig.5 - Capacitance Between Terminals Characteristics



# SMD ESD Protection Diode



## Reel Taping Specification



0603C/ SOD-523F	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	1.05 ± 0.05	1.96 ± 0.05	0.57 ± 0.05	1.50 + 0.10 - 0	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.041 ± 0.002	0.077 ± 0.002	0.022 ± 0.002	0.059 + 0.004 - 0	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0603C/ SOD-523F	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 ± 0.05	2.00 ± 0.05	0.20 ± 0.03	8.00 ± 0.20	12.00 + 0.50 - 0
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.002	0.079 ± 0.002	0.008 ± 0.001	0.315 ± 0.008	0.472 + 0.020 - 0

## SMD ESD Protection Diode

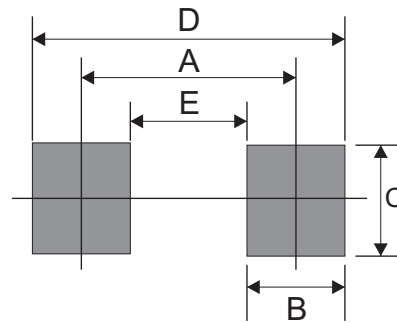
### Marking Code

Part Number	Marking Code
ACPDUC5V0U-HF	E05



### Suggested PAD Layout

SIZE	0603C/SOD-523F	
	(mm)	(inch)
A	1.10	0.043
B	0.70	0.028
C	1.00	0.039
D	1.80	0.071
E	0.40	0.016



### Standard Packaging

Case Type	REEL PACK	
	REEL ( pcs )	Reel Size (inch)
0603C/SOD-523F	4,000	7