

## ACPDUC5V0U-HF

### High-Reliability and High-Performance

### RoHS Device

### Halogen Free



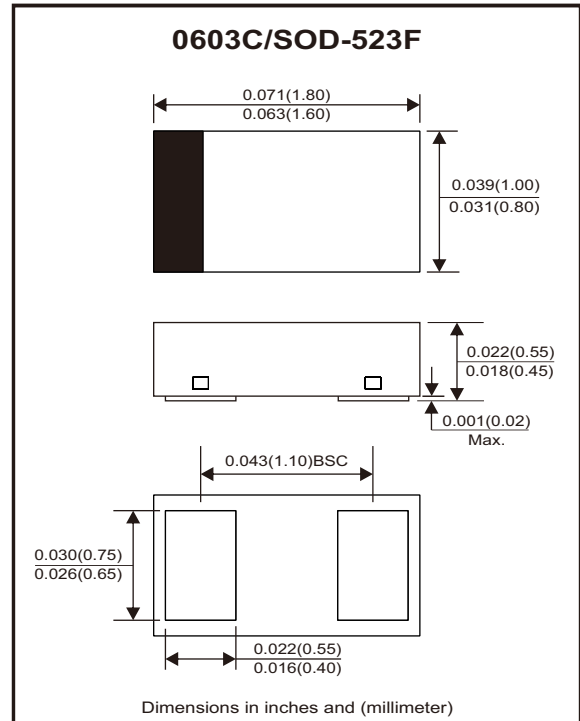
#### Features

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

#### 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 $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	$T_P = 8/20\mu\text{s}$	$P_{PP}$	180	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	$I_{PP}$	15	A
ESD capability	IEC 61000-4-2(air)	ESD	$\pm 30$	kV
	IEC 61000-4-2(contact)	ESD	$\pm 30$	
Operating temperature range		$T_j$	$-40 \sim +125$	$^\circ\text{C}$
Storage temperature range		$T_{STG}$	$-40 \sim +150$	$^\circ\text{C}$

#### Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		$V_{RWM}$			5.0	V
Forward voltage	$I_F = 10\text{mA}$	$V_F$		0.8	1.2	V
Breakdown voltage	$I_T = 1\text{mA}$	$V_{BR}$	6			V
Reverse leakage current	$V_{RWM} = 5\text{V}$	$I_R$		0.2	2.0	$\mu\text{A}$
Clamping voltage	$I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$	$V_C$			7.6	V
	$I_{PP} = 5\text{A}, T_P = 8/20\mu\text{s}$			8	9.4	
	$I_{PP} = 15\text{A}, T_P = 8/20\mu\text{s}$			10	12	
Junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	$C_J$		130		pF

## Rating and Characteristic Curves (ACPDUC5V0U-HF)

Fig.1 - 8/20 $\mu$ s Peak Pulse Current Waveform Acc. IEC 61000-4-5

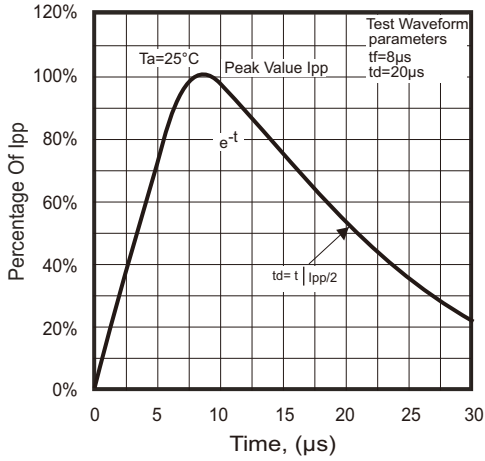


Fig.2 - Power Rating Derating Curve

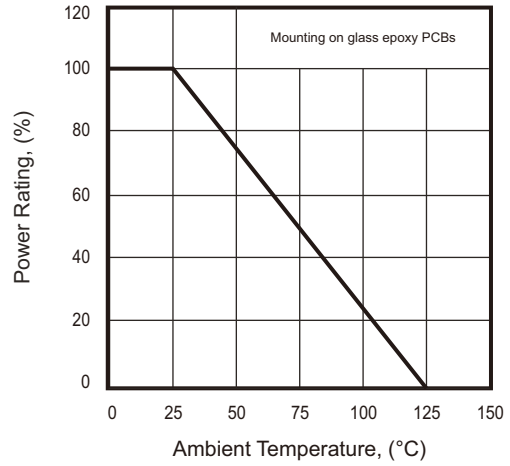


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

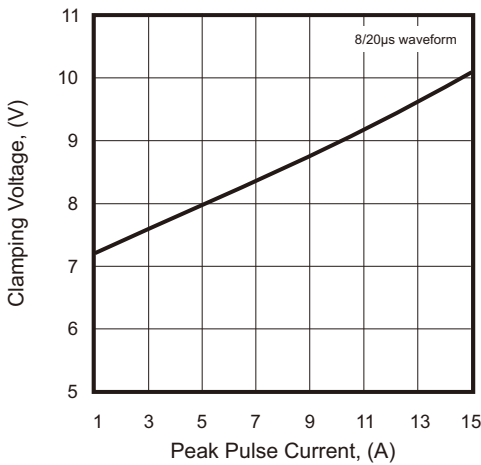


Fig.4 - Forward Characteristic

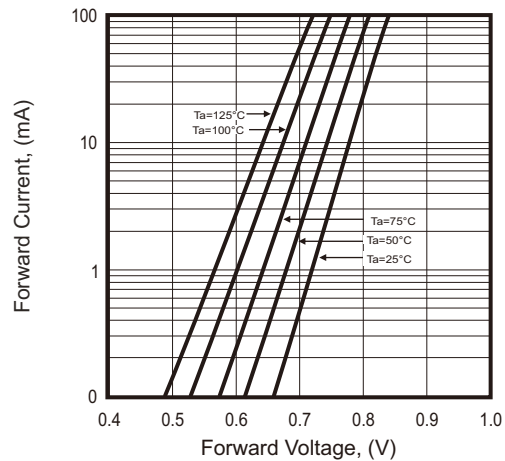
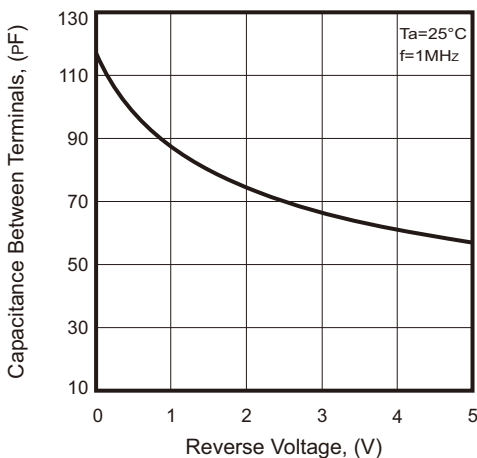
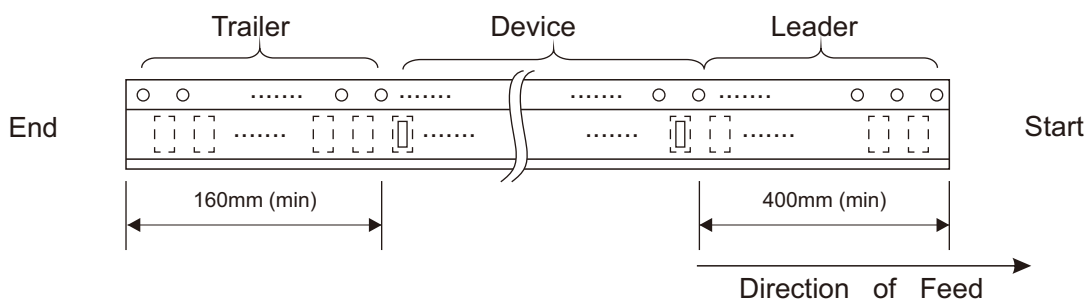
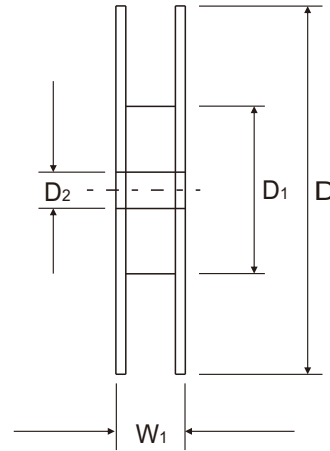
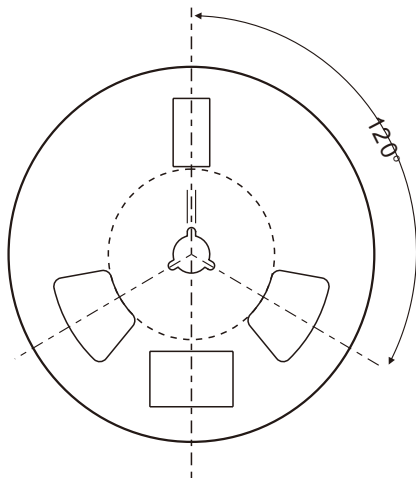
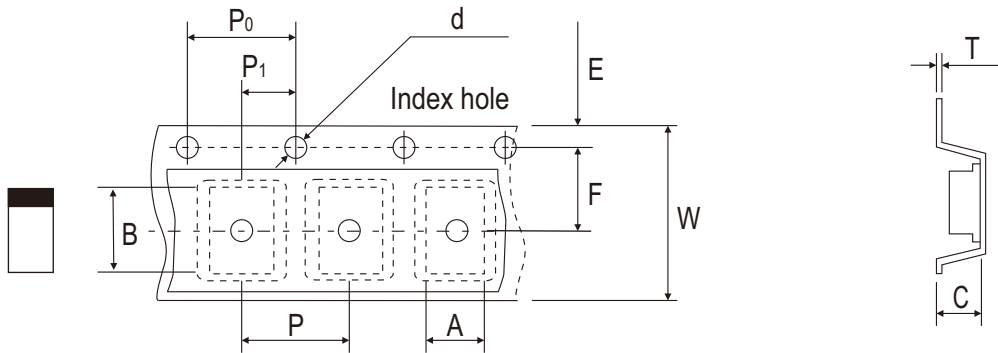


Fig.5 - Capacitance Between Terminals Characteristics



## 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 <sup>+0.10</sup> <sub>-0</sub>	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 <sup>+0.004</sup> <sub>-0</sub>	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 <sup>+0.50</sup> <sub>-0</sub>
	(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 <sup>+0.020</sup> <sub>-0</sub>

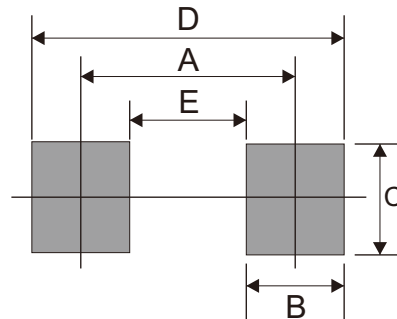
## Marking Code

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