

ACPDUC5V0U-HF

High-Reliability and High-Performance

RoHS Device

Halogen Free



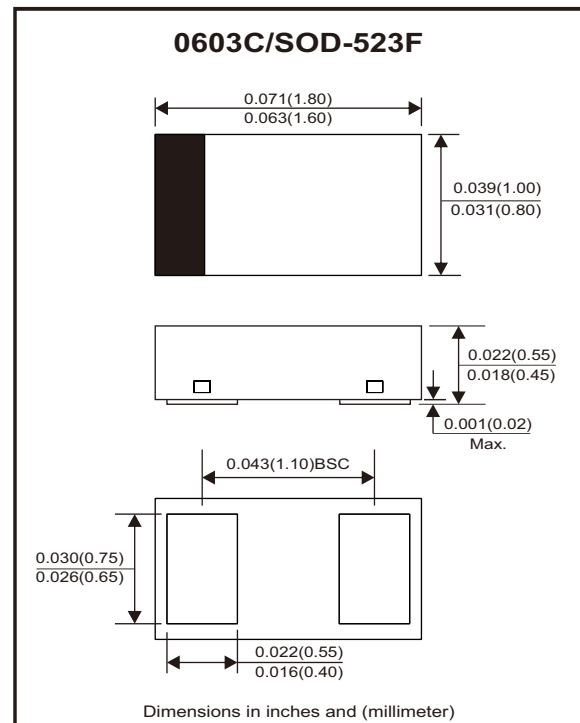
Features

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

Mechanical data

- Case: 0603C/SOD-523F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.

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	± 30	kV
	IEC 61000-4-2(contact)	ESD	± 30	
Operating temperature range		T_J	$-55\sim+125$	$^\circ\text{C}$
Storage temperature range		T_{STG}	$-55\sim+150$	$^\circ\text{C}$

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	μA
Clamping voltage	$I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$	V_C		8	7.6	V
	$I_{PP} = 5\text{A}, T_P = 8/20\mu\text{s}$			10	9.4	
	$I_{PP} = 15\text{A}, T_P = 8/20\mu\text{s}$				12	
Junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	C_J		130		pF

Typical Rating and Characteristic Curves (ACPDUC5V0U-HF)

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

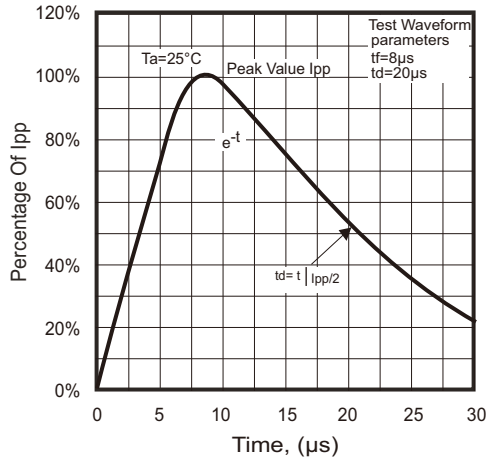


Fig.2 - Power Rating Derating Curve

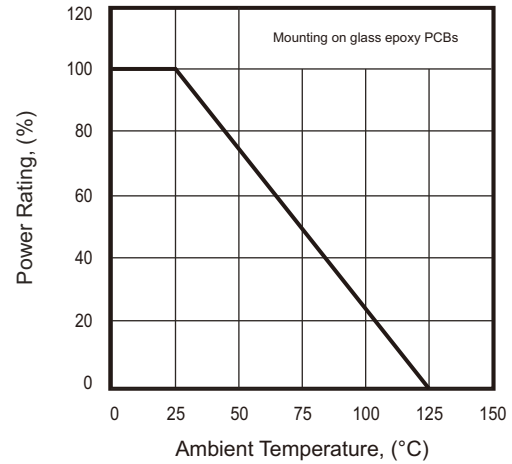


Fig.3 - Clamping Voltage Vs.
Peak Pulse Current

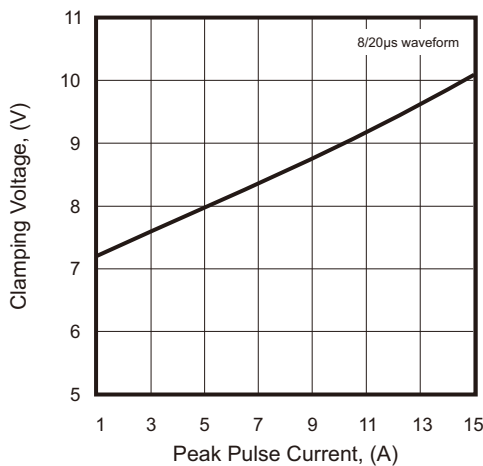


Fig.4 - Forward Characteristic

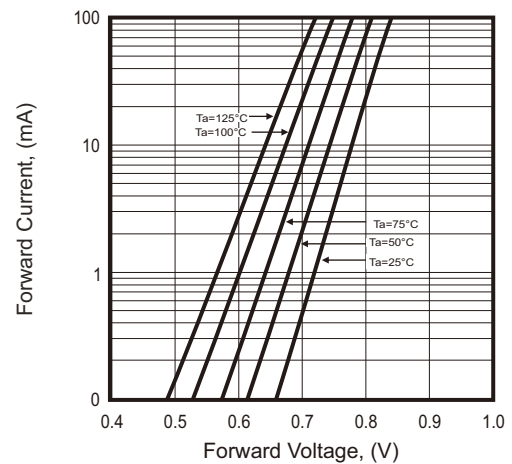
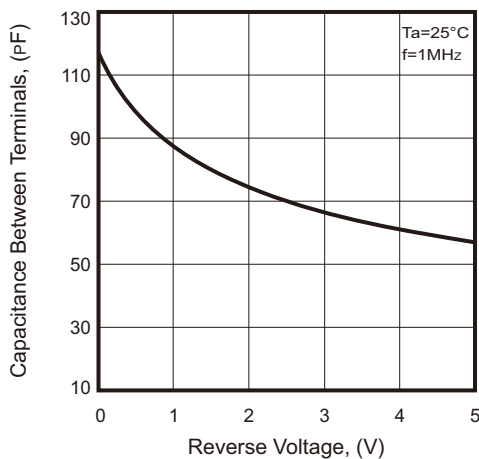
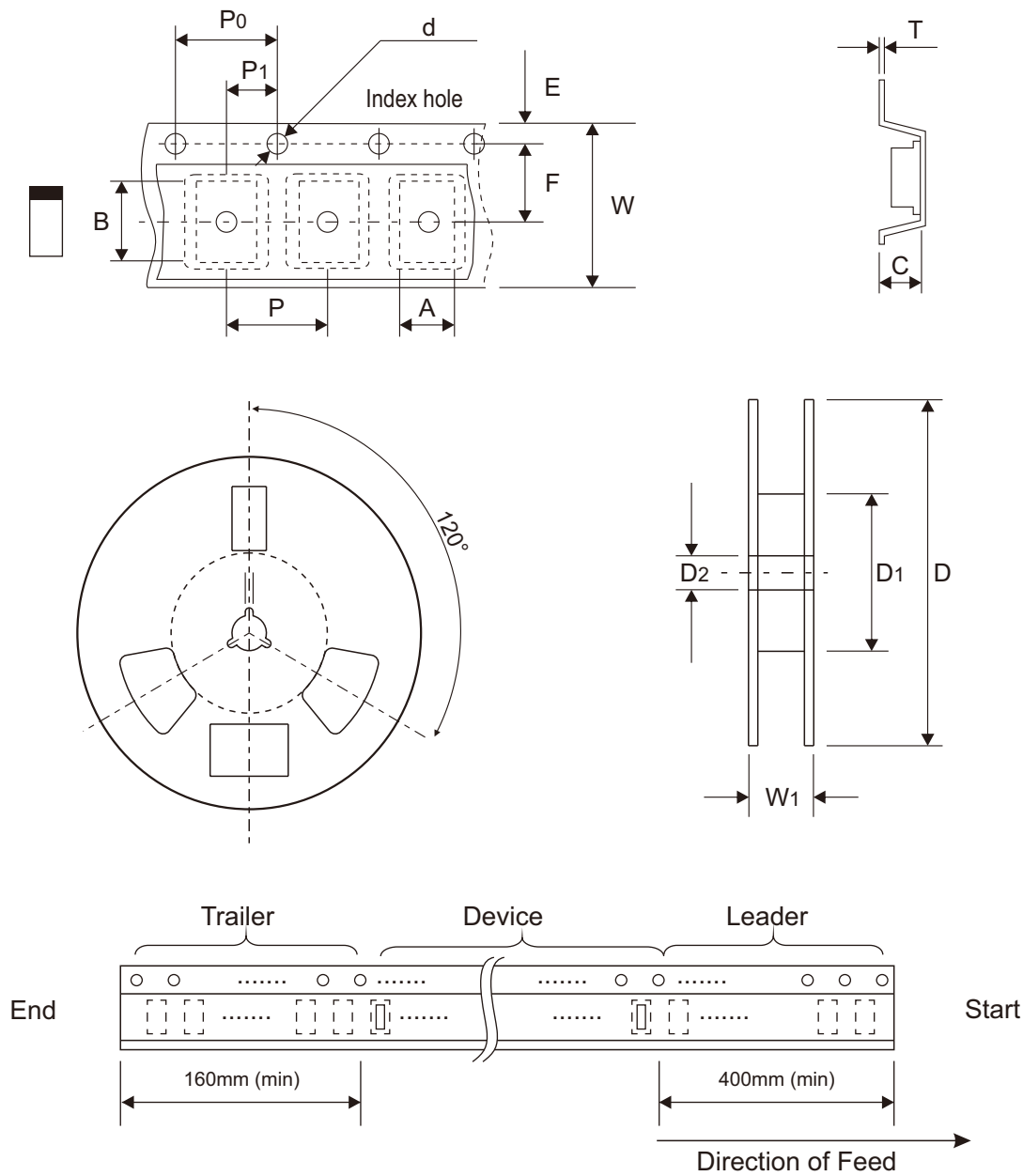


Fig.5 - Capacitance Between
Terminals Characteristics



Reel Taping Specification



0603C (SOD-523F)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.05 ± 0.05	1.96 ± 0.05	0.57 ± 0.05	$1.50 + 0.10 - 0.00$	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	$0.059 + 0.004 - 0.000$	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0603C (SOD-523F)	SYMBOL	E	F	P	P0	P1	T	W	W1
	(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	$12.00 + 0.50 - 0.00$
	(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	$0.472 + 0.020 - 0.000$

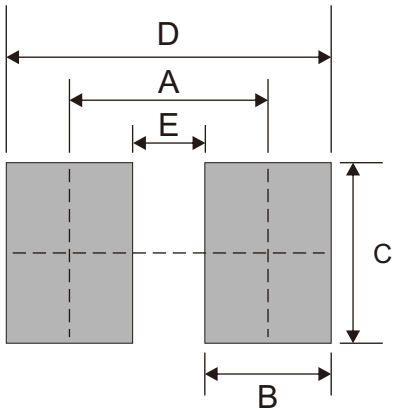
Marking Code

Part Number	Marking Code
ACPDUC5V0U-HF	E05



Suggested P.C.B. 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