

CPDUC5V0USP-HF

High-Reliability and High-Performance

RoHS Device

Halogen Free



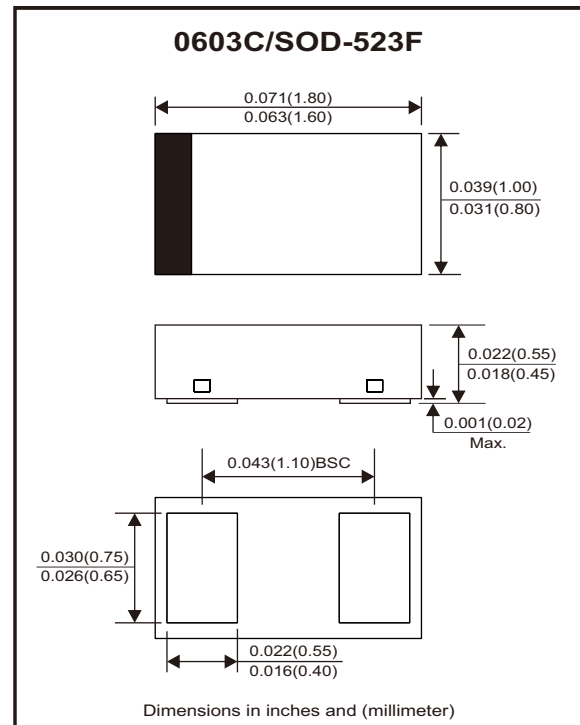
Features

- Uni-directional ESD protection.
- Surface mount package.
- Low capacitance.
- Low Leakage current.
- High component density.

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}	60	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	3	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	± 15 ± 8	kV
Operating temperature range		T_j	$-55\sim+150$	$^{\circ}\text{C}$
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	V
Forward voltage	$I_F = 10\text{mA}$	V_F			1.5	V
Diode breakdown voltage	$I_R = 1\text{mA}$	V_{BR}	5.4			V
Reverse current	$V_{RWM} = 5\text{V}$	I_R		0.1	1.0	μA
Clamping voltage	$I_{PP} = 1\text{A}$, $T_P = 8/20\mu\text{s}$ $I_{PP} = 3\text{A}$, $T_P = 8/20\mu\text{s}$	V_C			13 20	V
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_J		0.6	0.9	pF

Typical Rating and Characteristic Curves (CPDUC5V0USP-HF)

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

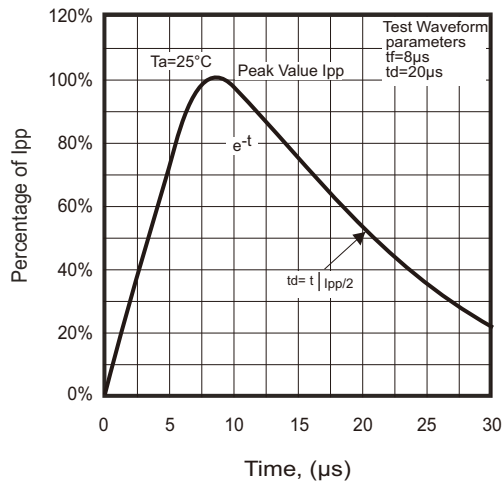


Fig.2 - Power Rating Derating Curve

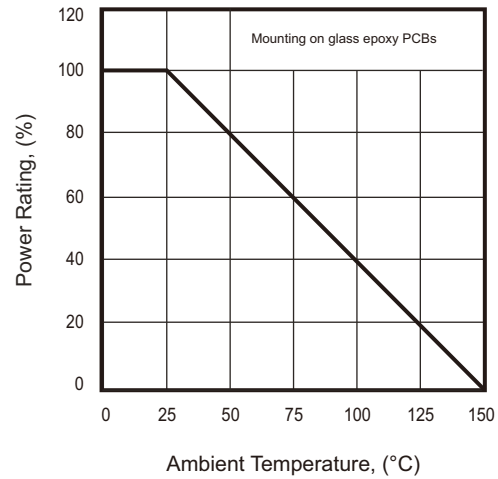


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

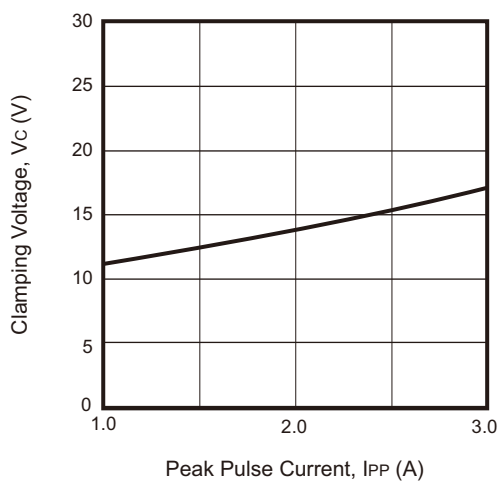


Fig.4 - Forward Voltage Vs. Forward Current

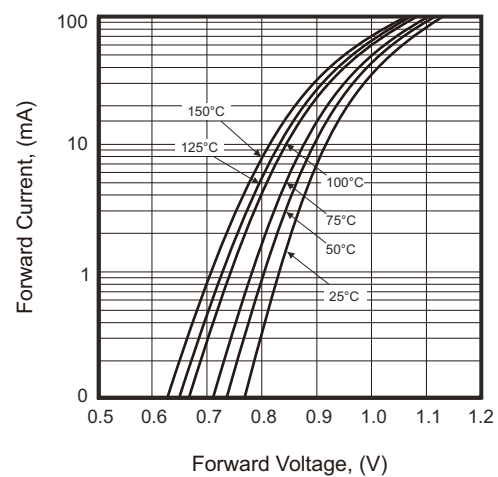
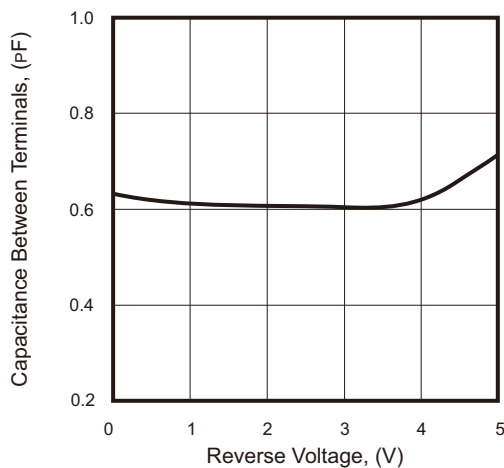
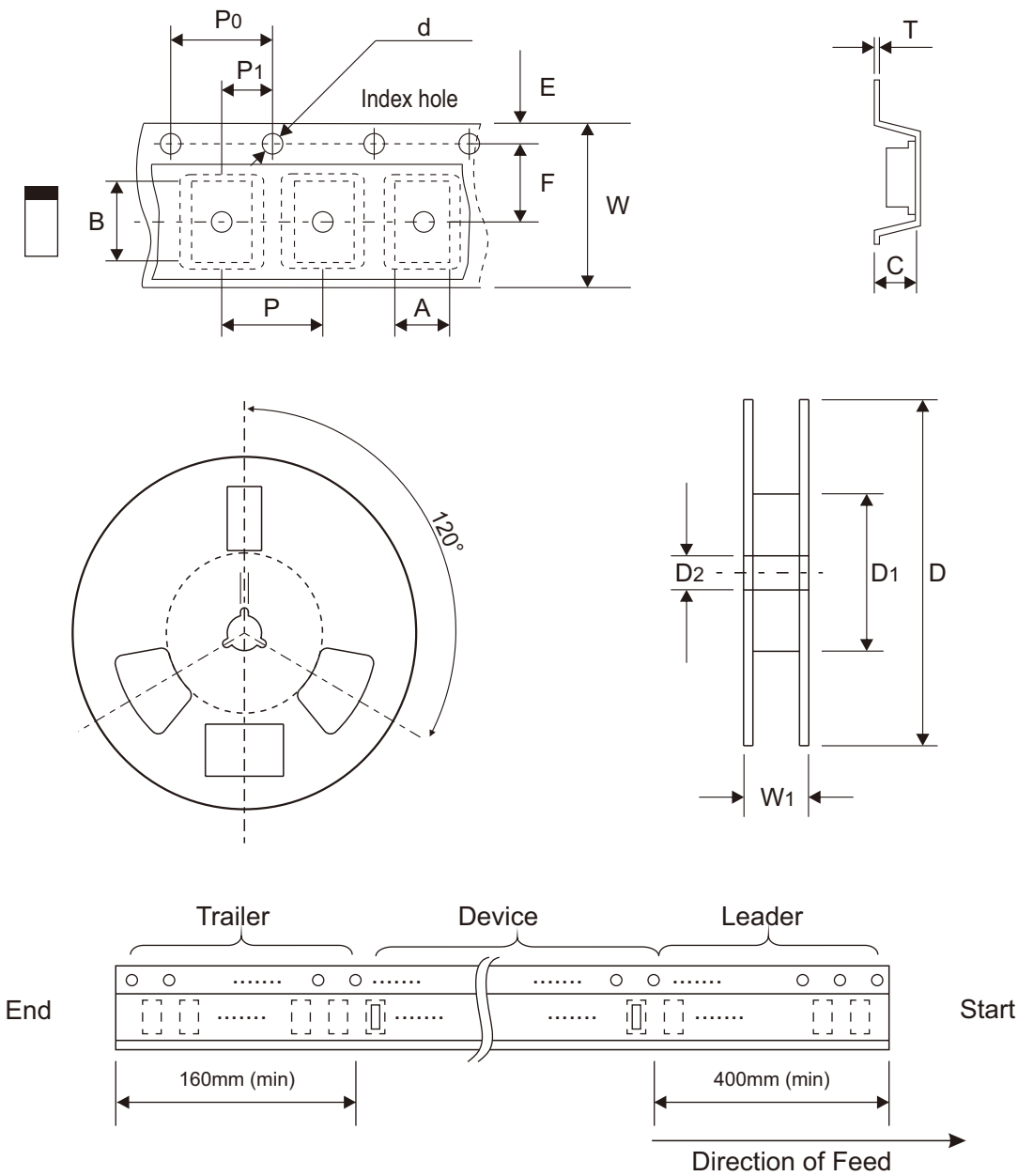


Fig.5 - Capacitance Between Terminals Characteristics



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

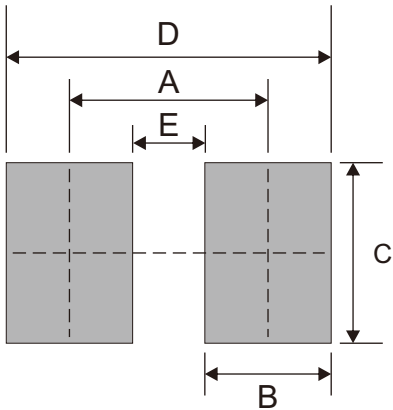
Marking Code

Part Number	Marking Code
CPDUC5V0USP-HF	E5P



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