



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## CPDQC5V0U-HF

### RoHS Device

### Halogen Free



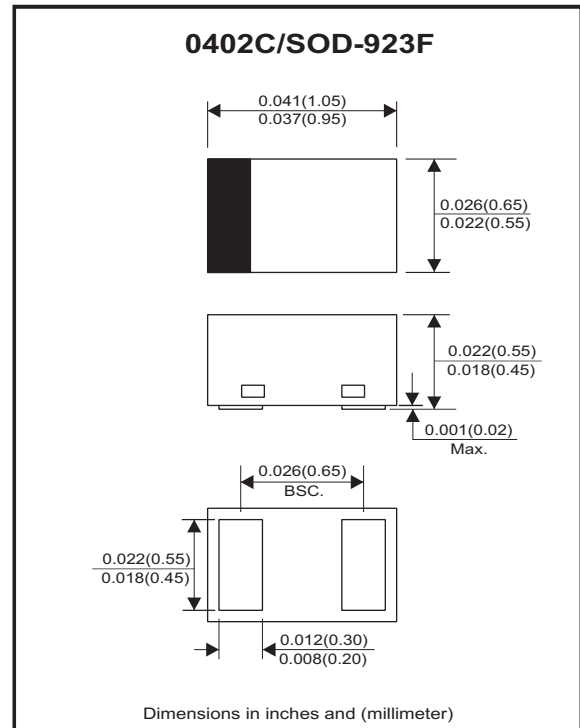
### Features

- Uni-directional ESD protection.
- IEC 61000-4-2 (ESD) ;  $\pm 30\text{KV}$ (contact)
- Surface mount package.
- Ultra small SMD package:0402.
- High component density.

### Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any.
- Weight: 0.001 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	$\pm 30$	
Operation temperature range		$T_j$	$-40 \sim +125$	$^\circ\text{C}$
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	$\mu\text{A}$
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

## RATING AND CHARACTERISTIC CURVES (CPDQC5V0U-HF)

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

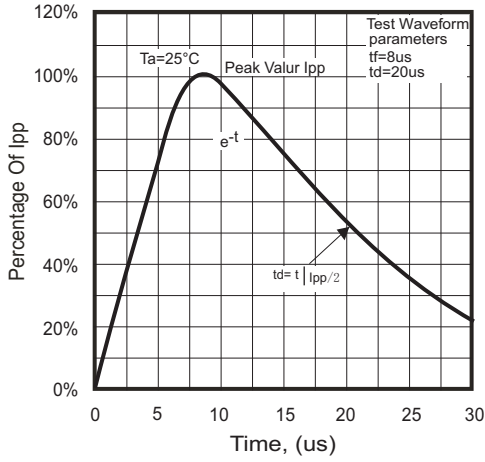


Fig.2 - Power Rating Derating Curve

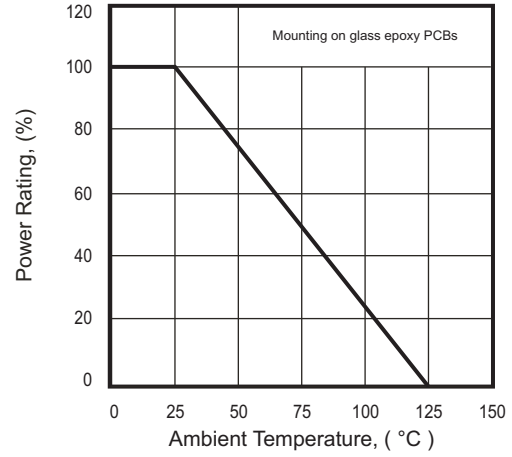


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

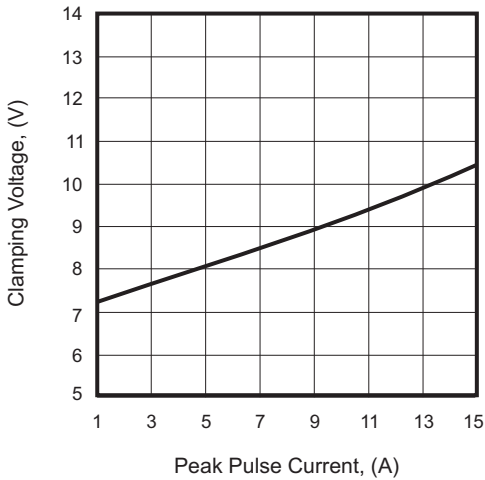


Fig.4 - Forward Characteristic

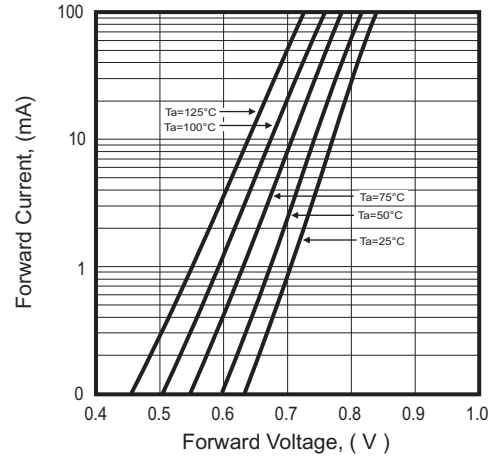
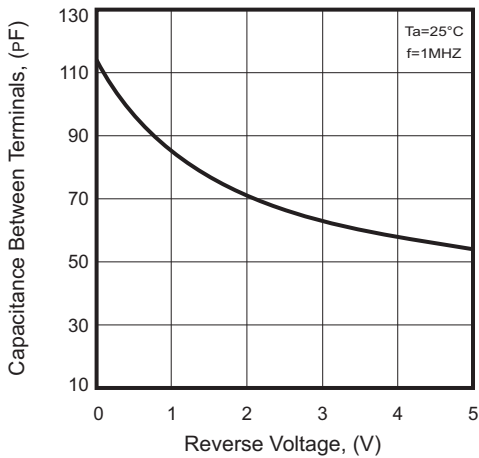
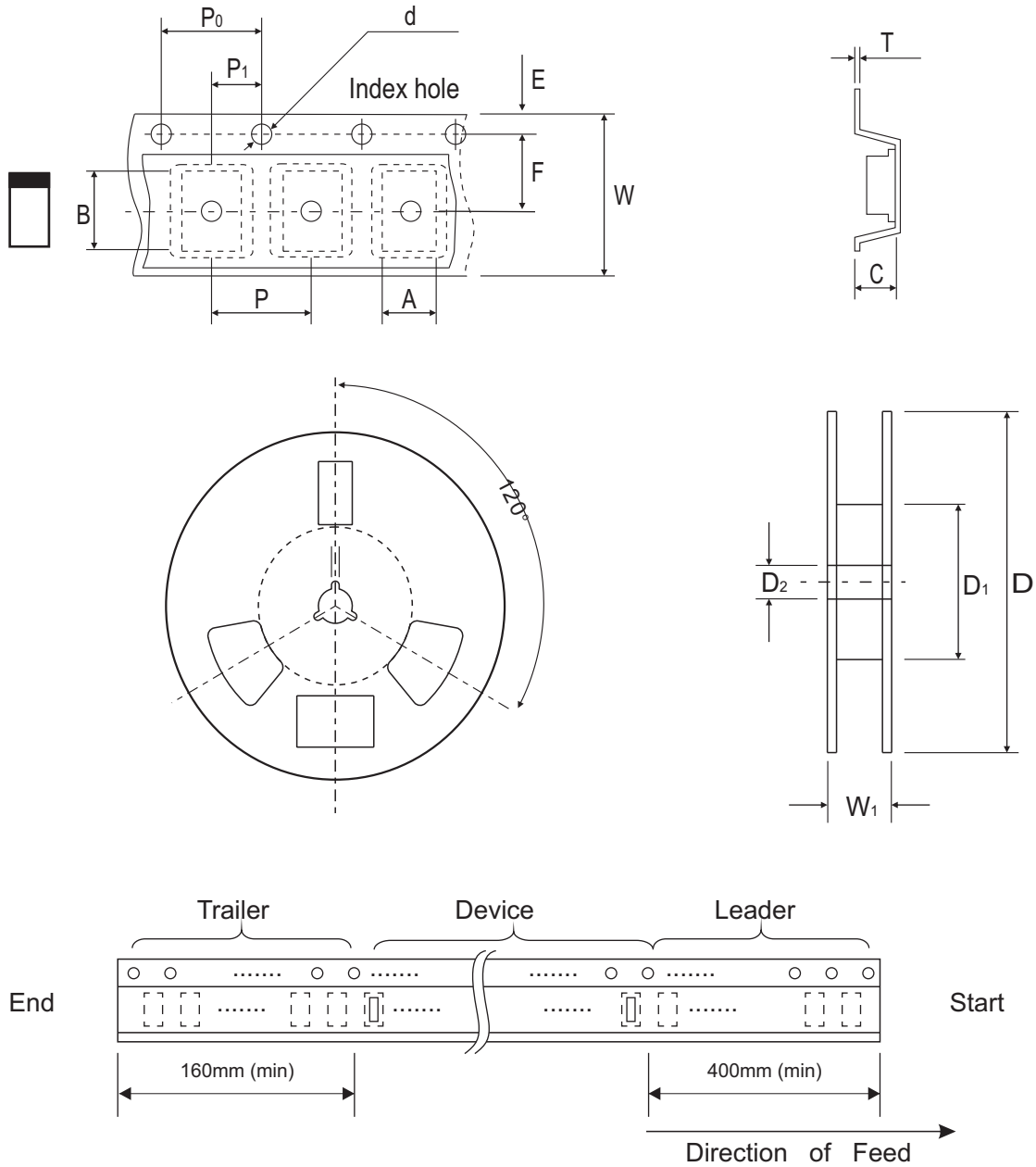


Fig.5 - Capacitance Between Terminals Characteristics



## Reel Taping Specification



0402C (SOD-923F)	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.75 ± 0.05	1.17 ± 0.05	0.65 ± 0.05	1.50 + 0.10 - 0	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.030 ± 0.002	0.046 ± 0.002	0.026 ± 0.002	0.059 + 0.004 - 0	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0402C (SOD-923F)	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 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 + 0.02 - 0.05	8.00 ± 0.20	12.00 + 0.50 - 0
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 + 0.001 - 0.002	0.315 ± 0.008	0.472 + 0.020 - 0

Company reserves the right to improve product design, functions and reliability without notice.

REV:D



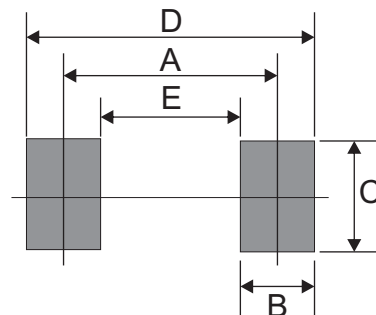
## Marking Code

Part Number	Marking Code
CPDQC5V0U-HF	E5



## Suggested PAD Layout

SIZE	0402C/SOD-923F	
	(mm)	(inch)
A	0.70	0.028
B	0.40	0.016
C	0.60	0.024
D	1.10	0.043
E	0.30	0.012



## Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
0402C/SOD-923F	5,000	7