

## CPDQC5V0USC-HF

### High-Reliability and High-Performance

### RoHS Device

### Halogen Free



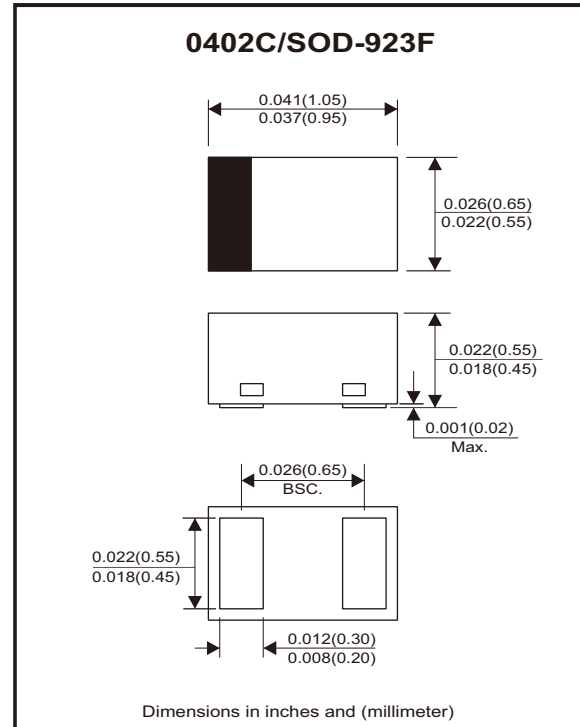
#### Features

- Uni-directional ESD protection.
- IEC 61000-4-2 Level 4 ESD protection.
- Ultra small SMD package:0402C.
- Surface mount package.
- High component density.

#### Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- Mounting position: Any.
- Weight: 0.001 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> = 8/20μs	P <sub>PP</sub>	45	W
Peak pulse current	T <sub>P</sub> = 8/20μs	I <sub>PP</sub>	3	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	±30 ±26	kV
Operating temperature range		T <sub>J</sub>	-55 to +150	°C
Storage temperature range		T <sub>STG</sub>	-55 to +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	V
Forward voltage	I <sub>F</sub> = 10mA	V <sub>F</sub>			1.2	V
Breakdown voltage	I <sub>r</sub> = 1mA	V <sub>BR</sub>	5.6			V
Reverse leakage current	V <sub>RWM</sub> = 5V	I <sub>R</sub>			0.1	μA
Clamping voltage	I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20μs I <sub>PP</sub> = 3A, T <sub>P</sub> = 8/20μs	V <sub>C</sub>		10 13	12 15	V
Junction capacitance	V <sub>R</sub> = 0V, f = 1MHz	C <sub>J</sub>		0.4	0.5	pF

## Rating and Characteristic Curves (CPDQC5V0SC-HF)

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

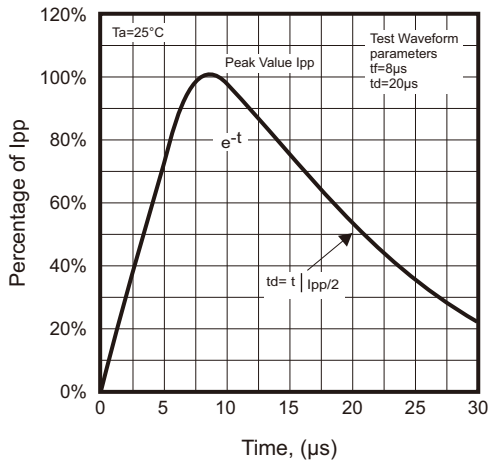


Fig.2 - Power Rating Derating Curve

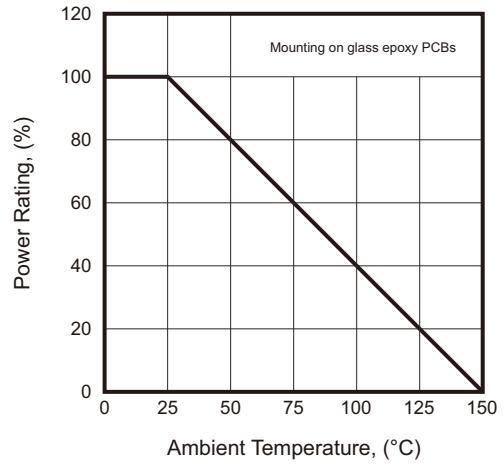


Fig.3 - Typical Clamping Voltage vs. Peak Pulse Current

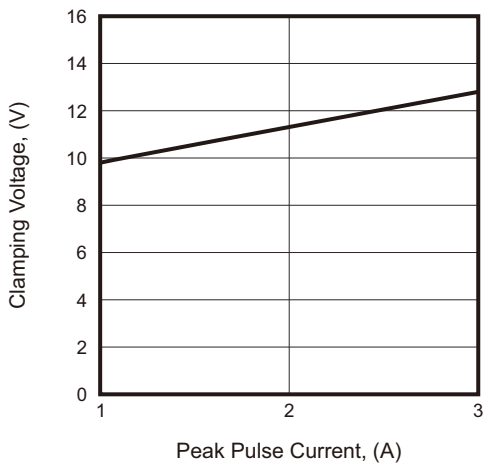
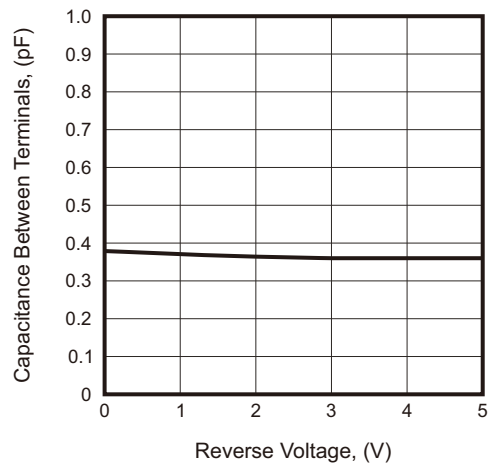
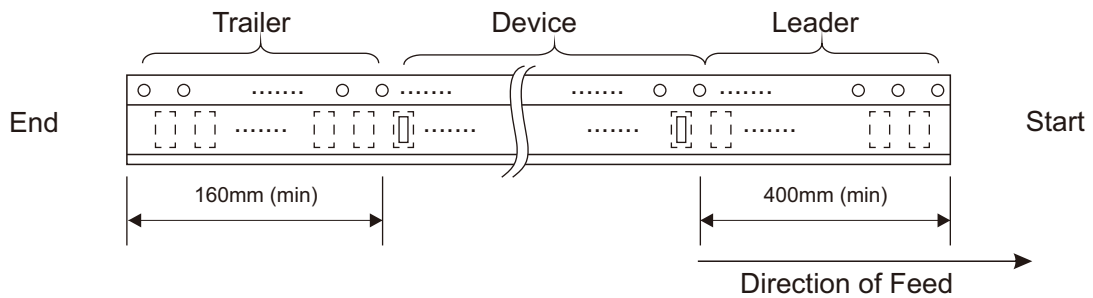
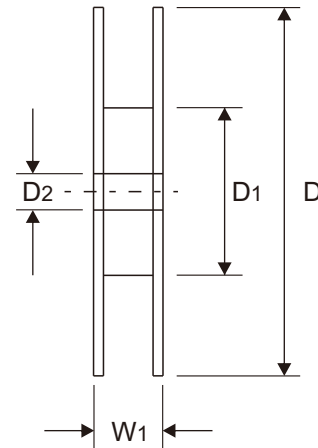
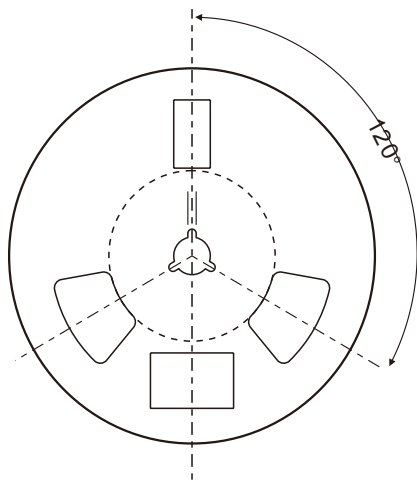
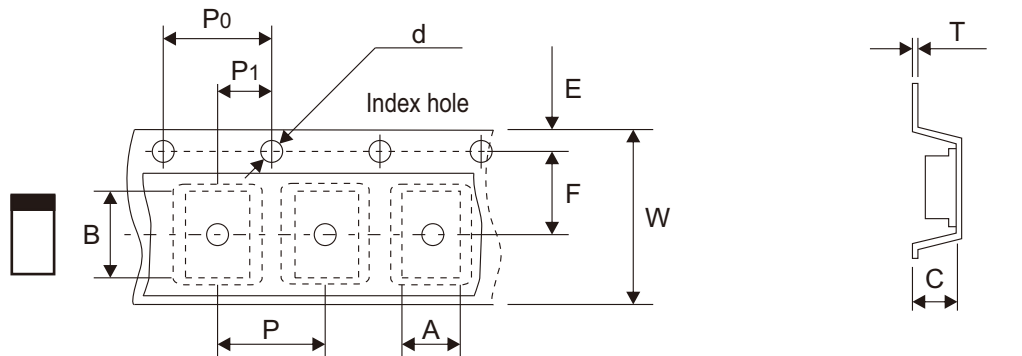


Fig.4 - Typical Capacitance Between Terminals Characteristics



## Reel Taping Specification



0402C (SOD-923F)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.75 ± 0.05	1.17 ± 0.05	0.65 ± 0.05	1.50 + 0.10 - 0.00	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 - 0.000	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0402C (SOD-923F)	SYMBOL	E	F	P	P0	P1	T	W	W1
	(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 - 0.00
	(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 - 0.000

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

REV:A

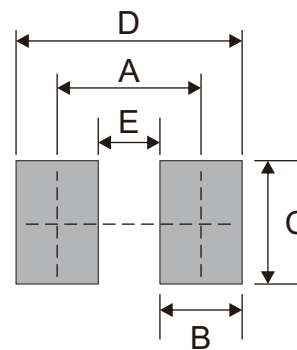
## Marking Code

Part Number	Marking Code
CPDQC5V0USC-HF	5SC



## Suggested P.C.B. 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