

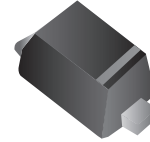


**THE DATASHEET OF  
CPDQ5V0USP-HF**



# CPDQ5V0USP-HF

**RoHS Device**  
**Halogen Free**

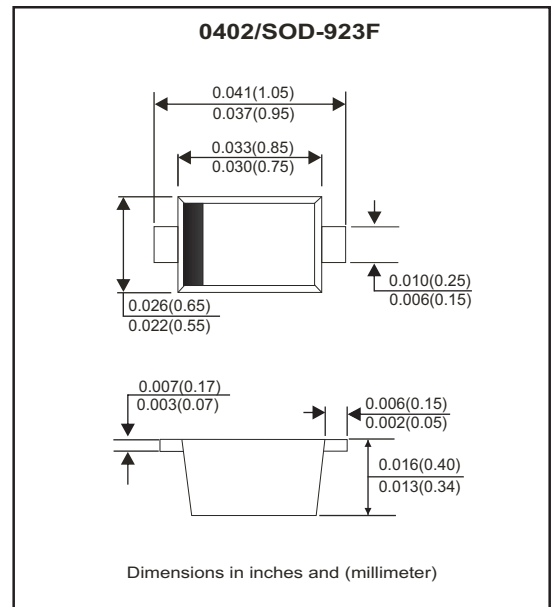


## Features

- IEC61000-4-2 Level 4 ESD protection.
- ESD Rating of Class 3(>16kV) per Human Body Mode.
- Supper low capacitance 0.5 pF Typ.
- Low clamping voltage.
- Low body height: 0.016”(0.4mm)

## Mechanical data

- Epoxy: Meets UL 94V-0
- Case: 0402/SOD-923F small outline plastic package.  
Void-free, Transfer-molded, Thermosetting plastic.
- Terminals: Matte tin plated, solderable per MIL-STD-750,method 2026.
- Mounting position: Any.
- High temperature soldering guaranteed: 260°C/10 second.
- Weight: 0.001 grams(approx.).



## Circuit Diagram

- Pin 1: Cathode
- Pin 2: Anode



## Maximum Rating (at T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Typ. peak pulse power	T <sub>P</sub> = 8/20 us	PPP	9.8	W
Peak pulse current	T <sub>P</sub> = 8/20 us	I <sub>PP</sub>	1	A
ESD capability	IEC 61000-4-2(Air)	ESD	±15	kV
	IEC 61000-4-2(Contact)	ESD	±10	kV
Junction temperature rang		T <sub>J</sub>	-55 to +125	°C
Storage temperature rang		T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics

(at  $T_A=25^\circ\text{C}$  unless otherwise noted.  $V_F=1.0\text{V Max.}$  @  $I_F=10\text{mA}$  for all types)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		$V_{RWM}$			5.0	V
Forward voltage	$I_F = 10\text{mA}$	$V_F$			0.9	V
Breakdown voltage	$I_T = 1\text{mA}$	$V_{BR}$	5.4			V
Reverse leakage current	$V_{RWM} = 5\text{V}$	$I_R$			1.0	$\mu\text{A}$
Clamping voltage	$I_{PP} = 1\text{A}$ , $T_P = 8/20\mu\text{s}$	$V_C$			9.8	V
Junction capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$	$C_J$		0.5	0.9	pF

NOTES:

- FR-5= 1.0\*0.75\*0.62 in.
- Surge current waveform per Figure 1.
- $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$ .

## RATING AND CHARACTERISTIC CURVES (CPDQ5V0USP-HF )

Fig.1 - Pulse Waveform

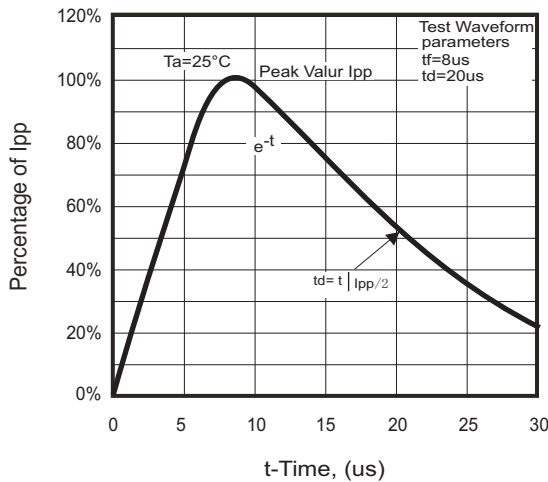
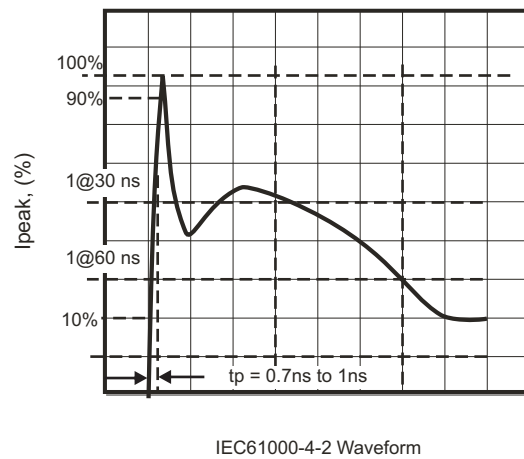
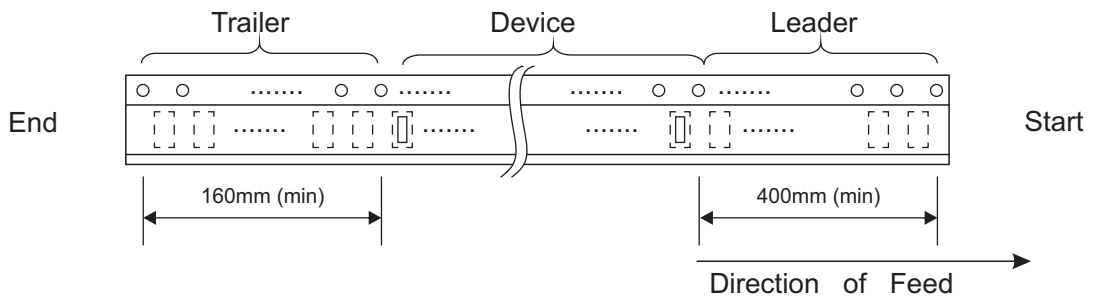
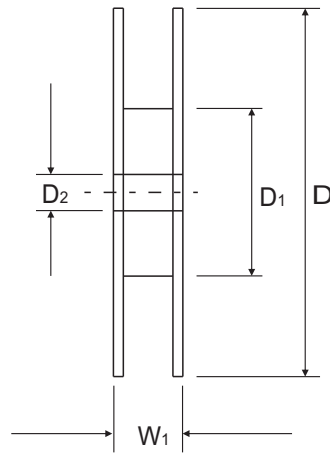
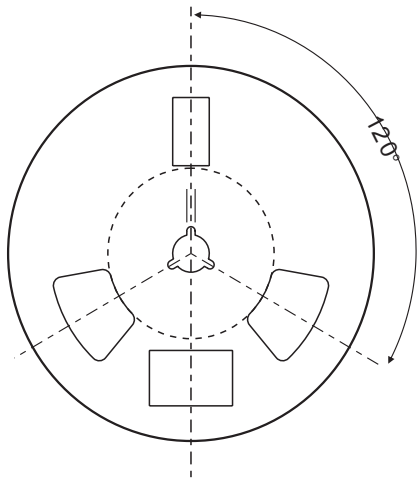
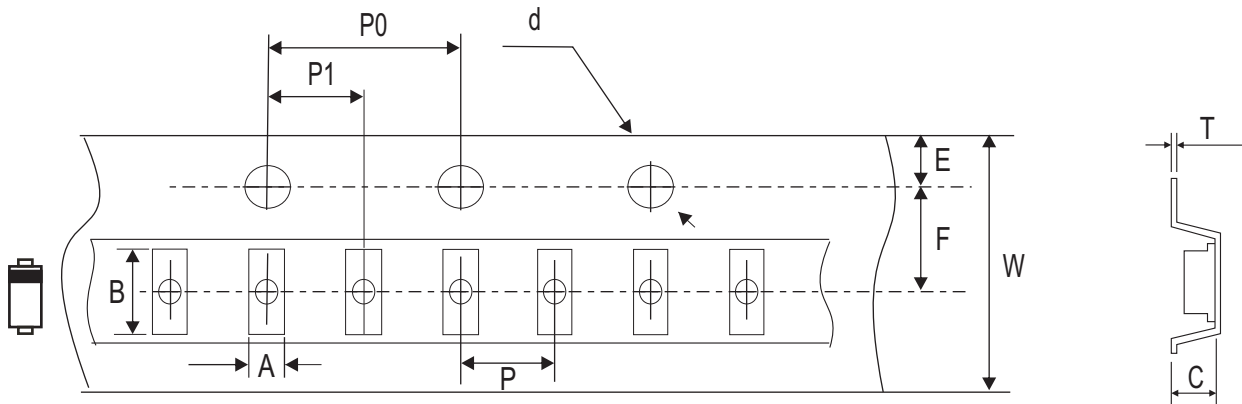


Fig.2- IEC61000-4-2 Waveform



### Reel Taping Specification



0402 (SOD-923F)	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.70 ± 0.05	1.12 ± 0.05	0.48 ± 0.05	1.50 + 0.10 - 0	178.00 Max.	50.00 Min.	13.00 ± 0.50
	(inch)	0.028 ± 0.002	0.044 ± 0.002	0.019 ± 0.002	0.059 + 0.004 - 0	7.008 Max.	1.969 Min.	0.512 ± 0.020

0402 (SOD-923F)	SYMBOL	E	F	P	P <sub>0</sub>	P <sub>1</sub>	T	W	W
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	0.229 ± 0.02	8.30 Max.	10.90 Max.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.009 + 0.001	0.327 Max.	0.429 Max.

### Marking Code

Part Number	Marking Code	
CPDQ5V0USP-HF	D	D ☒



### Month Code:

Month	Odd Year (per A. D. )	Even Year (per A. D. )
Jan	1	E
Feb	2	F
Wer	3	H
Apr	4	J
May	5	K
Jun	6	L
Jul	7	N
Aug	8	P
Sep	9	U
Oct	T	X
Nov	V	Y
Dec	C	Z

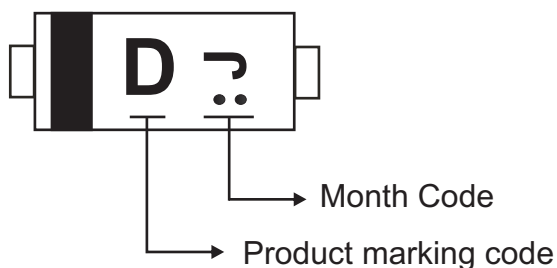


D: Product marking code

☒: Month Code

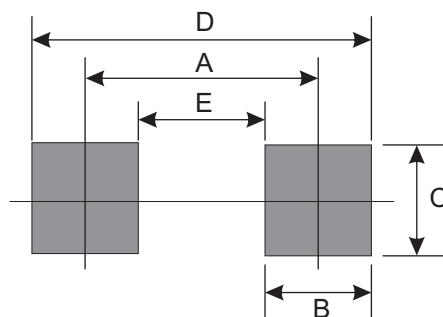
For example as follows:

- Product marking code: D
- Manufacture date\_ Year: 2012 (Even year) / Month: Apr  
 Month code: J ( Month code rotated 90° and two dots below the month code.)



## Suggested PAD Layout

SIZE	0402/SOD-923F	
	(mm)	(inch)
<b>A</b>	0.90	0.035
<b>B</b>	0.30	0.012
<b>C</b>	0.40	0.016
<b>D</b>	1.20	0.047
<b>E</b>	0.60	0.024





## Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
0402/SOD-923	8,000	7

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