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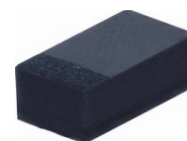
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

## SMD ESD Protection Diode



# CPDQR3-5V0UP

## RoHS Device



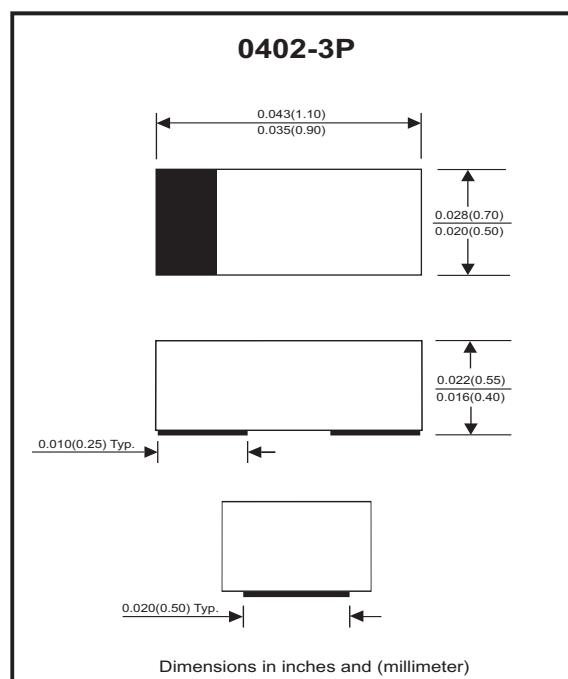
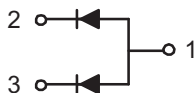
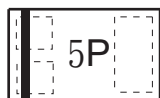
### Features

- Uni-directional ESD protection.
- (15kV) IEC 61000-4-2 rating.
- Surface mount package.
- Ultra small SMD package:0402-3P.
- High component density.

### Mechanical data

- Case: 0402-3P standard package, molded plastic.
- Terminals: Nipd,solderable per MIL-STD-750,method 2026.
- Marking Code:  
CPDQR3-5V0UP: 5P
- Mounting position: Any.
- Weight: 0.001 gram(approx.).

#### -MARKING:



### Maximum Ratings (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power ( tp = 8/20 us)	PPP	25	W
Peak pulse current ( tp = 8/20 us)	IPP	2	A
ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2(Contact)	ESD	20 15	kV
Operating temperature	TJ	-55 to +125	°C
Storage temperature	TSTG	-55 to +150	°C

### Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-Off voltage		VRWM			5	V
Diode breakdown voltage	IR = 1mA	VBD	6	7.1	8	V
Reverse leakage current	VR = 5V	IR		0.06	0.25	uA
Forward voltage	IF = 10mA	VF		1	1.2	V
Clamping voltage	IPP = 2A, TP=8/20us	VC			12.5	V
Junction capacitance	VR = 0V, f=1MHZ	CT			10	pF
	VR = 3.3V, f=1MHZ			4.5		

# SMD ESD Protection Diode



## RATING AND CHARACTERISTIC CURVES (CPDQR3-5V0UP)

Fig. 1 - Non-Repetitive Peak Pulse Power vs. Pulse Time

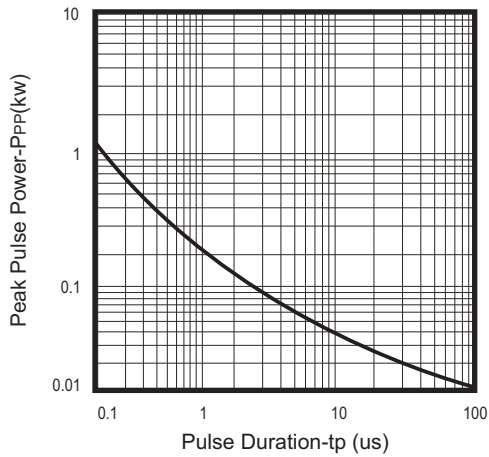


Fig. 2 - Power rating derating curve

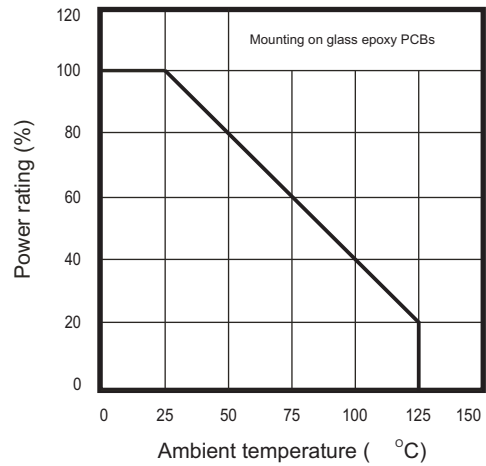


Fig. 3 - Clamping voltage vs. peak pulse current

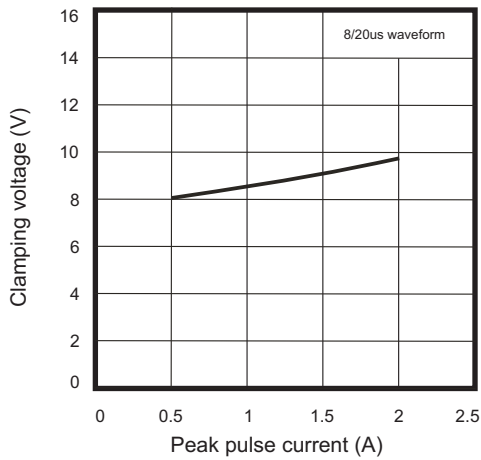


Fig. 4 - Forward voltage vs. forward current

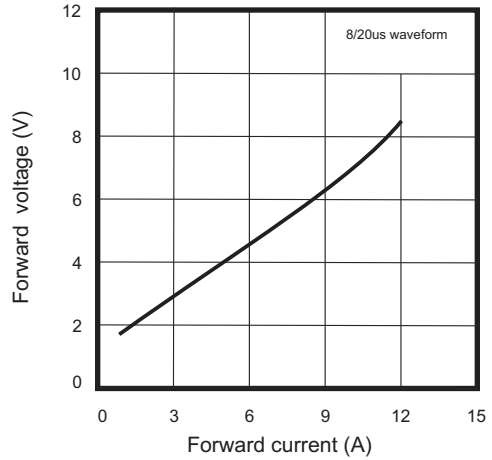
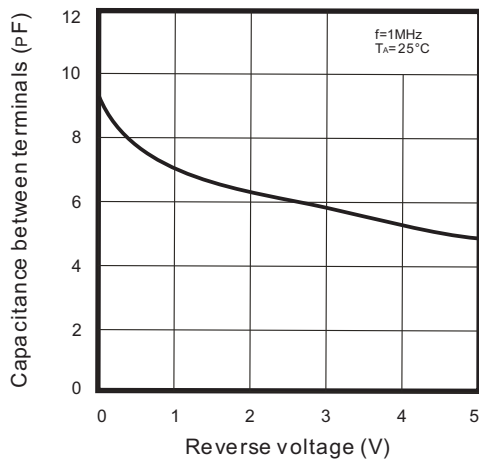


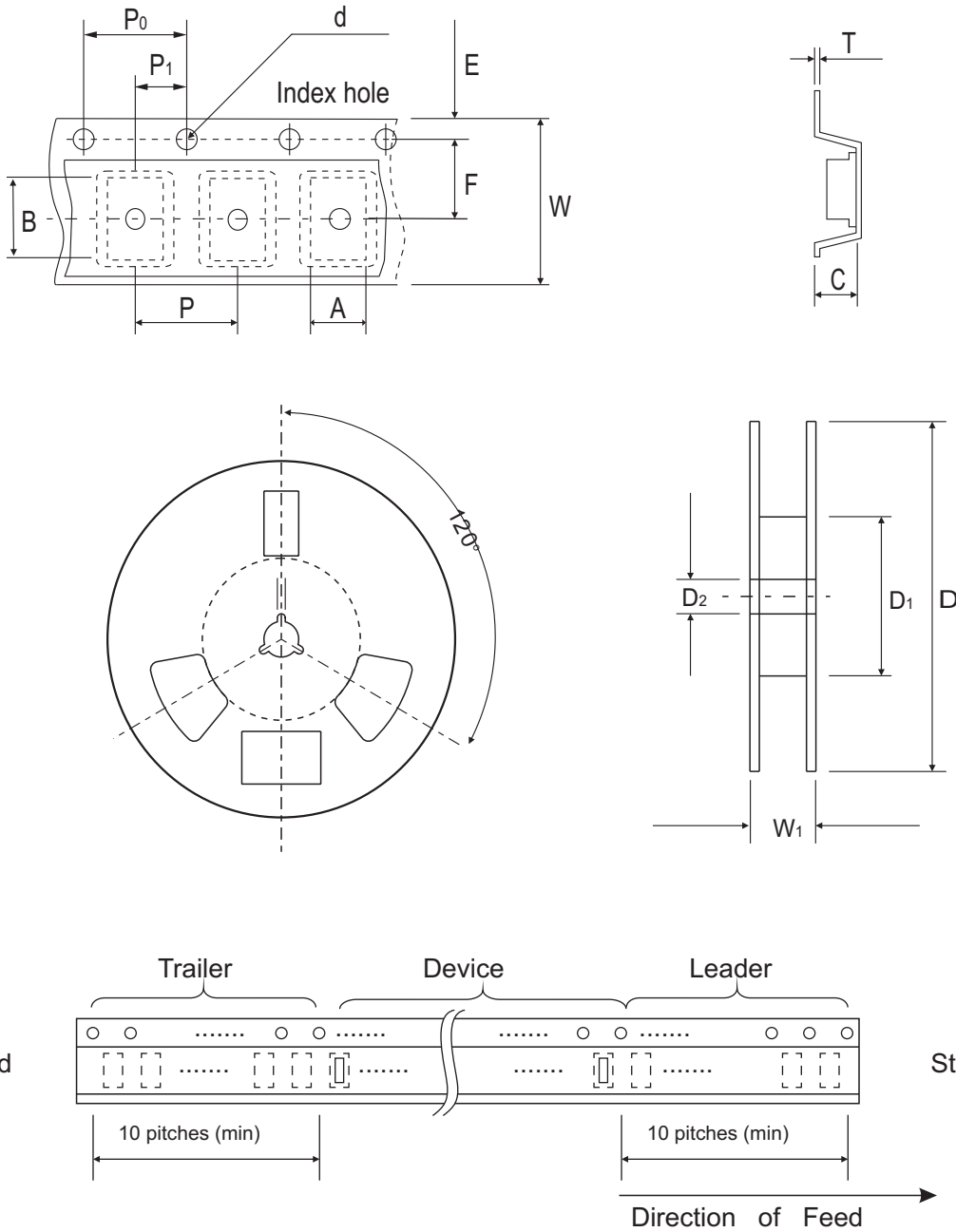
Fig. 5 - Capacitance between terminals characteristics



# SMD ESD Protection Diode



## Reel Taping Specification



0402	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.69 ± 0.10	1.19 ± 0.10	0.66 ± 0.10	1.50 ± 0.10	178 ± 1	60.0 MIN.	13.0 ± 0.20
	(inch)	0.027 ± 0.004	0.047 ± 0.004	0.026 ± 0.004	0.059 ± 0.004	7.008 ± 0.04	2.362 MIN.	0.512 ± 0.008

0402	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 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.254 ± 0.02	8.00 ± 0.30	13.5 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.01 ± 0.001	0.315 ± 0.012	0.531 MAX.

## SMD ESD Protection Diode

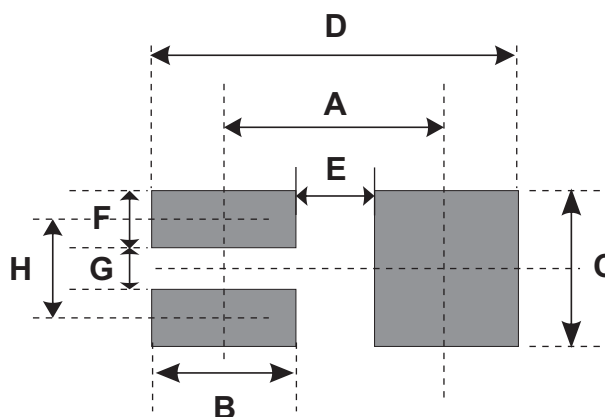
### Marking Code

Part Number	Marking Code
CPDQR3-5V0UP	5P



### Suggested PAD Layout

SIZE	0402-3P	
	(mm)	(inch)
A	0.700	0.028
B	0.400	0.016
C	0.600	0.024
D	1.100	0.043
E	0.300	0.012
F	0.200	0.008
G	0.150	0.006
H	0.350	0.014



### Standard Packaging

Case Type	REEL PACK	
	REEL ( pcs )	Reel Size (inch)
0402-3P	3,000	7