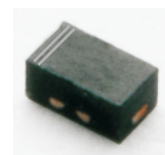


# CPDQT5V0U-HF

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



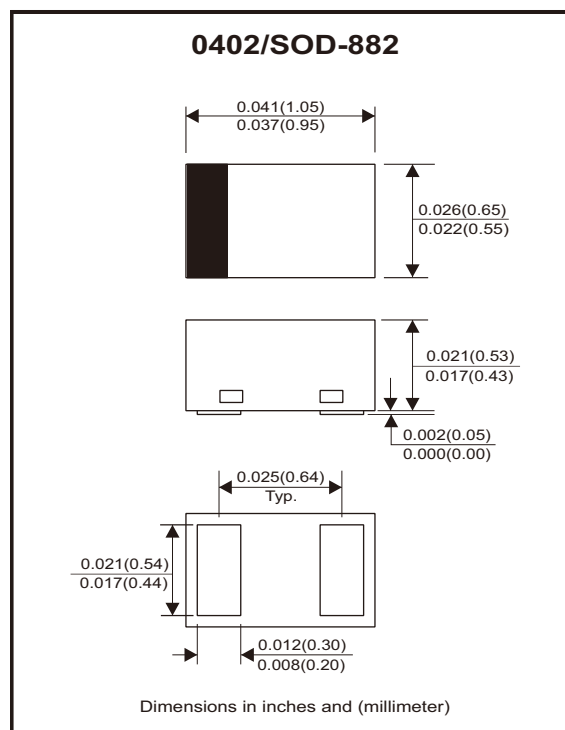
## Features

- IEC61000-4-2 Level 4 ESD protection.
- ESD Rating of Class 3 per Human Body Mode.
- Low Leakage
- Response Time is Typically <1ns

## Mechanical data

- Case: 0402/SOD-882 small outline plastic package.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

## Circuit Diagram



## Maximum Rating (TA=25°C unless otherwise Specified)

| Parameter                                                 | Symbol           | Value         | Unit |
|-----------------------------------------------------------|------------------|---------------|------|
| Total power dissipation on FR-5 board @TA=25°C (Note 1)   | P <sub>D</sub>   | 150           | mW   |
| ESD per IEC 61000-4-2(Contact)                            | V <sub>ESD</sub> | ± 8           | kV   |
| ESD per IEC 61000-4-2(Air)                                | V <sub>ESD</sub> | ±15           | kV   |
| ESD voltage per human body model                          | V <sub>ESD</sub> | 16            | kV   |
| Lead Soldering Temperature - Maximum (10 second duration) | T <sub>L</sub>   | 260 (10 sec.) | °C   |
| Junction temperature range                                | T <sub>J</sub>   | -55 to +150   | °C   |
| Storage temperature range                                 | T <sub>STG</sub> | -55 to +150   | °C   |

Notes: 1. FR-5=1.0\*0.75\*0.62 in.

## Electrical Characteristics (TA=25°C unless otherwise noted, V<sub>F</sub>=0.9V Max.@ I<sub>F</sub>=10mA for all types)

| Parameter                    | Conditions                                       | Symbol           | Min | Typ | Max  | Unit |
|------------------------------|--------------------------------------------------|------------------|-----|-----|------|------|
| Working peak reverse voltage |                                                  | V <sub>RWM</sub> |     |     | 5    | V    |
| Reverse leakage current      | V <sub>RWM</sub> = 5 V                           | I <sub>R</sub>   |     |     | 1.0  | μA   |
| Breakdown voltage (Note 1)   | I <sub>T</sub> = 1 mA                            | V <sub>BR</sub>  | 6.2 |     |      | V    |
| Clamping voltage (Note 2)    | I <sub>PP</sub> = 8.7 A, T <sub>p</sub> = 8/20μs | V <sub>C</sub>   |     |     | 12.3 | V    |
| Peak power dissipation       | T <sub>p</sub> = 8/20μs                          | P <sub>PK</sub>  |     | 107 |      | W    |
| Junction capacitance         | V <sub>R</sub> = 0V , F=1MHz                     | C <sub>J</sub>   |     | 65  |      | pF   |

Notes: 1. V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C

2. Surge current waveform per Figure 3.

RATING AND CHARACTERISTIC CURVES (CPDQT5V0U-HF)

Fig.1 - Typical Breakdown Voltage Versus Temperature

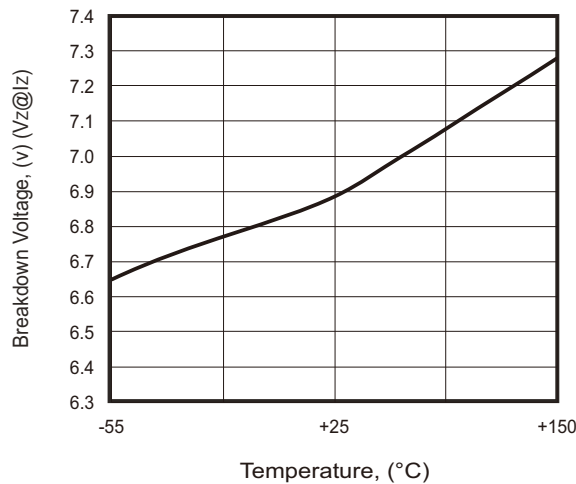


Fig.2 - Typical Leakage Current Versus Temperature

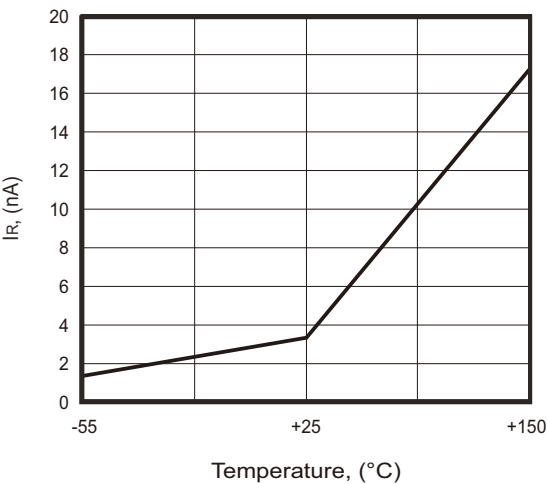


Fig.3 - 8/20μs Pulse Waveform

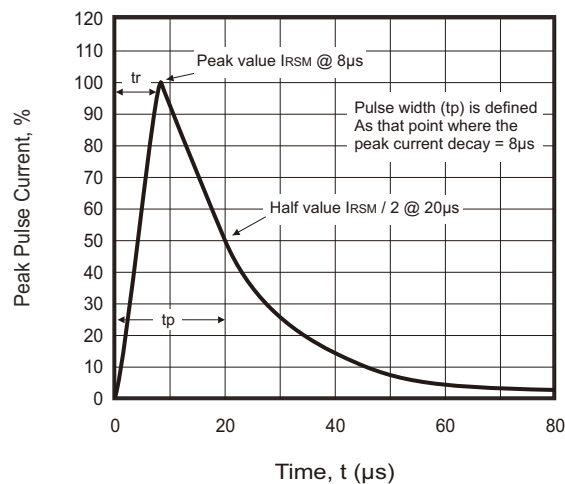
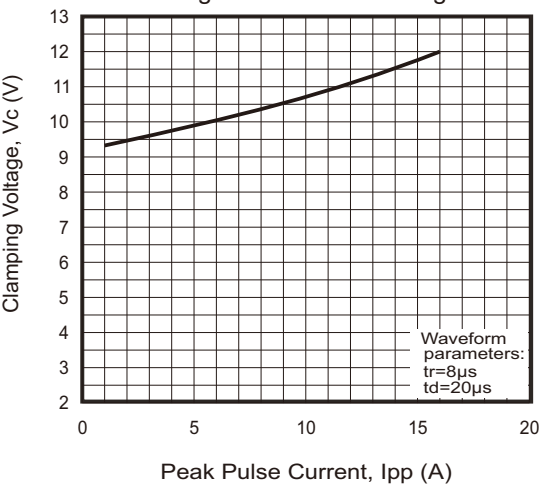
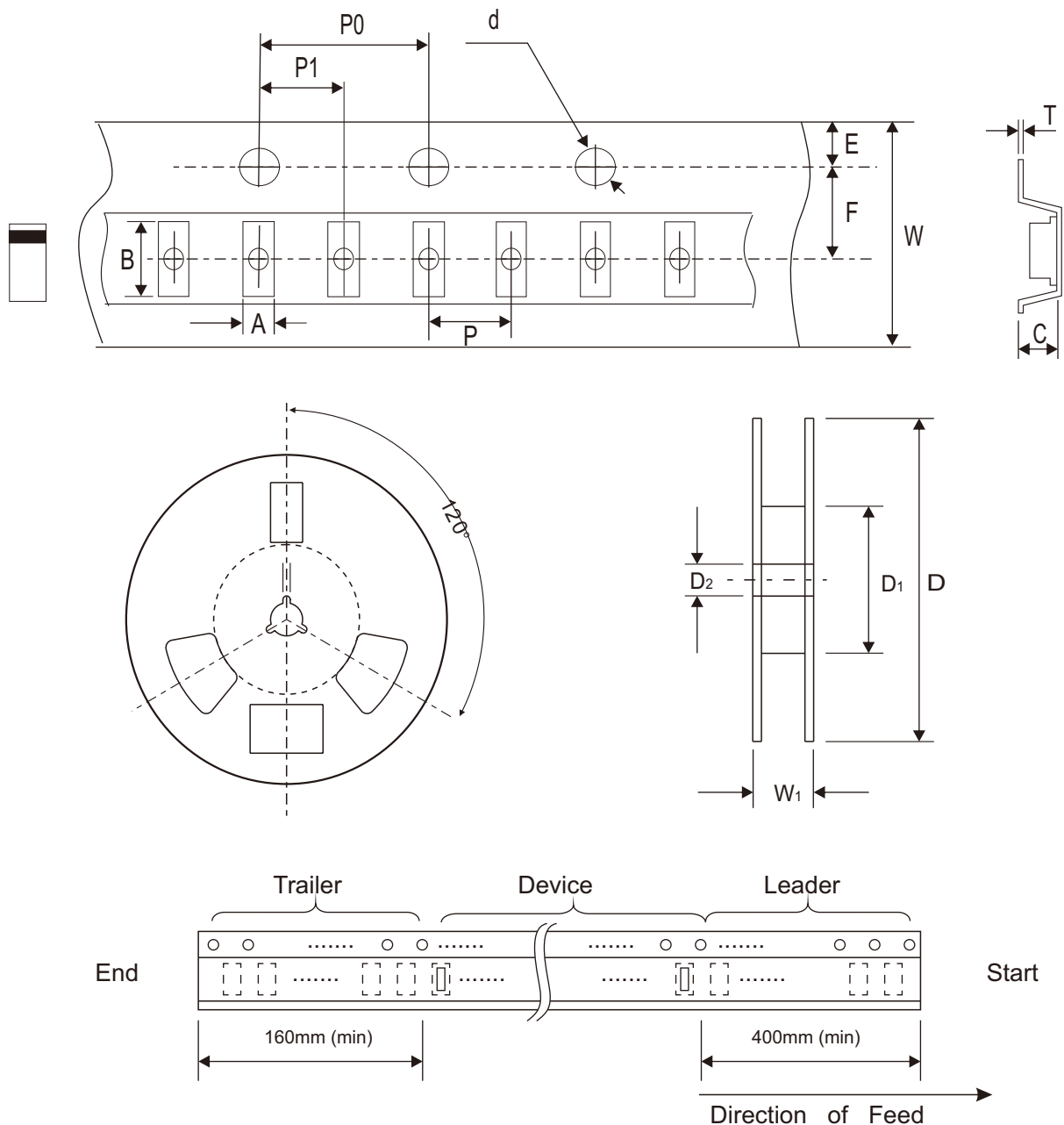


Fig.4 - Normalized Junction Capacitance Voltage Vs. Reverse Voltage



Reel Taping Specification

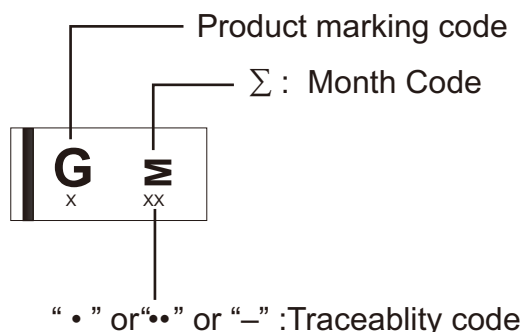


| 0402<br>(SOD-882) | SYMBOL | A             | B             | C             | d                    | D           | D <sub>1</sub> | D <sub>2</sub> |
|-------------------|--------|---------------|---------------|---------------|----------------------|-------------|----------------|----------------|
|                   | (mm)   | 0.70 ± 0.05   | 1.12 ± 0.05   | 0.55 ± 0.05   | 1.50 + 0.10<br>- 0   | 178.00 Max. | 50.00 Min.     | 13.00 ± 0.50   |
|                   | (inch) | 0.028 ± 0.002 | 0.044 ± 0.002 | 0.022 ± 0.002 | 0.059 + 0.004<br>- 0 | 7.008 Max.  | 1.969 Min.     | 0.512 ± 0.020  |

| 0402<br>(SOD-882) | 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   | 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 |
|--------------|--------------|
| CPDQT5V0U-HF | G            |



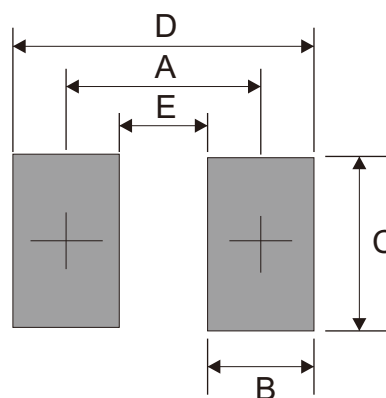
## Month Code:

| Month | Odd Year<br>(per A.D.) | Even Year<br>(per A.D.) |
|-------|------------------------|-------------------------|
| Jan   | 1                      | E                       |
| Feb   | 2                      | F                       |
| Wer   | 3                      | H                       |
| Apr   | 4                      | J                       |
| May   | 5                      | K                       |
| Jun   | 6                      | L                       |

| Month | Odd Year<br>(per A.D.) | Even Year<br>(per A.D.) |
|-------|------------------------|-------------------------|
| Jul   | 7                      | N                       |
| Aug   | 8                      | P                       |
| Sep   | 9                      | U                       |
| Oct   | T                      | X                       |
| Nov   | V                      | Y                       |
| Dec   | C                      | Z                       |

## Suggested PAD Layout

| SIZE | 0402/SOD-882 |        |
|------|--------------|--------|
|      | (mm)         | (inch) |
| A    | 0.70         | 0.028  |
| B    | 0.40         | 0.016  |
| C    | 0.70         | 0.028  |
| D    | 1.10         | 0.043  |
| E    | 0.30         | 0.012  |



## Standard Packaging

| Case Type    | REEL PACK       |                     |
|--------------|-----------------|---------------------|
|              | REEL<br>( pcs ) | Reel Size<br>(inch) |
| 0402/SOD-882 | 10,000          | 7                   |