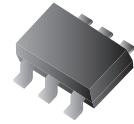


# CPDT6-5V4U-HF

RoHS Device  
Halogen Free

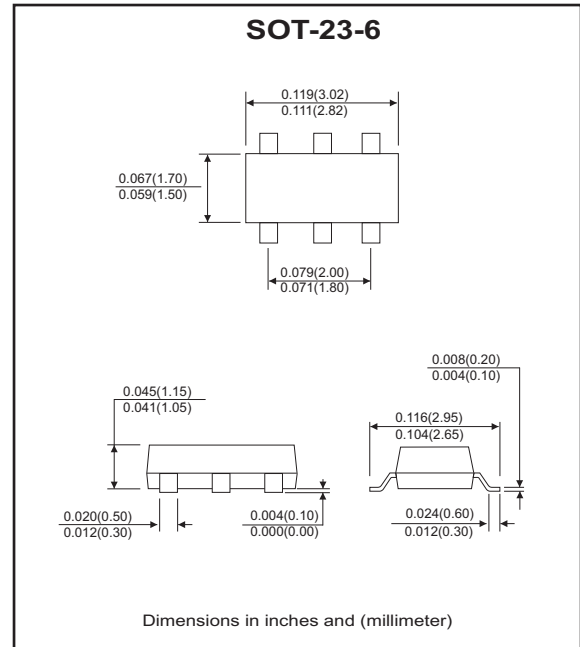


## Features

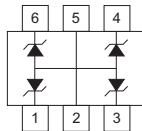
- IEC61000-4-2 Level 4 ESD protection.
- Surface mount package.
- High component density.

## Mechanical data

- Case: SOT-23-6 Standard package, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Marking code: E54
- Mounting position: Any.
- Weight: 0.015 gram (approx.).



## Circuit diagram



## Maximum Rating and Electrical Characteristics

(at TA=25°C unless otherwise noted)

| Parameter               | Symbol           | Conditions                                                                                     | Min | Typ | Max     | Unit |
|-------------------------|------------------|------------------------------------------------------------------------------------------------|-----|-----|---------|------|
| Diode breakdown voltage | V <sub>BD</sub>  | I <sub>R</sub> = 1mA                                                                           | 6.1 |     |         | V    |
| Leakage current         | I <sub>L</sub>   | V <sub>R</sub> = 3V                                                                            |     | 0.1 | 1.0     | uA   |
| Forward voltage         | V <sub>F</sub>   | I <sub>F</sub> = 10mA                                                                          |     |     | 1.2     | V    |
| Junction capacitance    | C <sub>T</sub>   | V <sub>R</sub> = 0V, f = 1MHz                                                                  |     | 60  | 80      | pF   |
| ESD capability          | ESD              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                                                   |     |     | 15<br>8 | kV   |
| Clamping voltage        | V <sub>C</sub>   | I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us<br>I <sub>PP</sub> = 8A, T <sub>P</sub> = 8/20us |     |     | 8<br>10 | V    |
| Peak pulse power        | P <sub>PP</sub>  |                                                                                                |     |     | 80      | W    |
| Operation temperature   | T <sub>J</sub>   |                                                                                                |     |     | 125     | °C   |
| Storage temperature     | T <sub>STG</sub> |                                                                                                | -55 |     | 150     | °C   |

## RATING AND CHARACTERISTIC CURVES (CPDT6-5V4U-HF)

Fig. 1 - 8/20us Peak pulse current waveform acc. IEC 61000-4-5

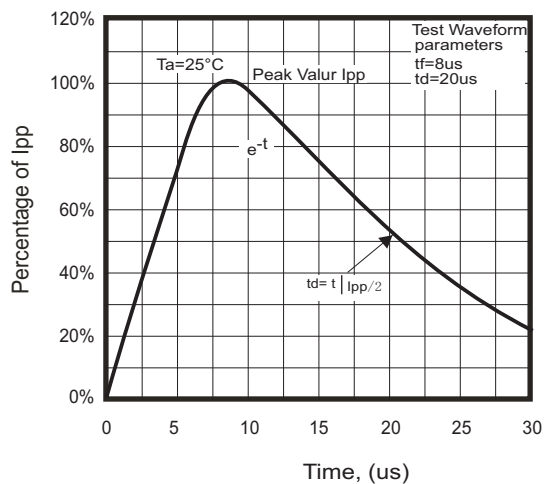


Fig.2 - Power rating derating curve

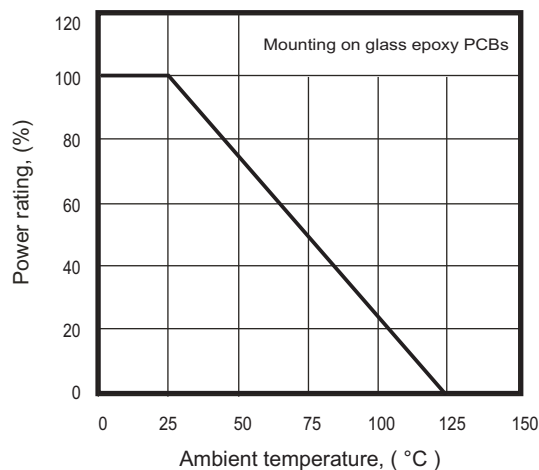


Fig.3 - Clamping voltage vs. peak pulse current

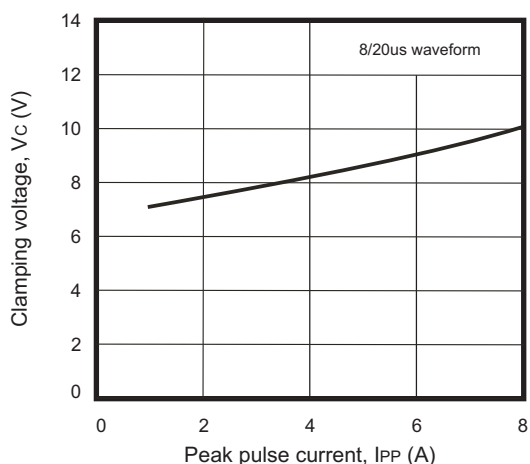
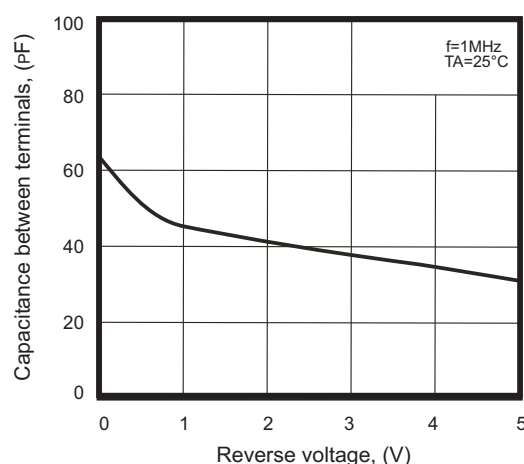
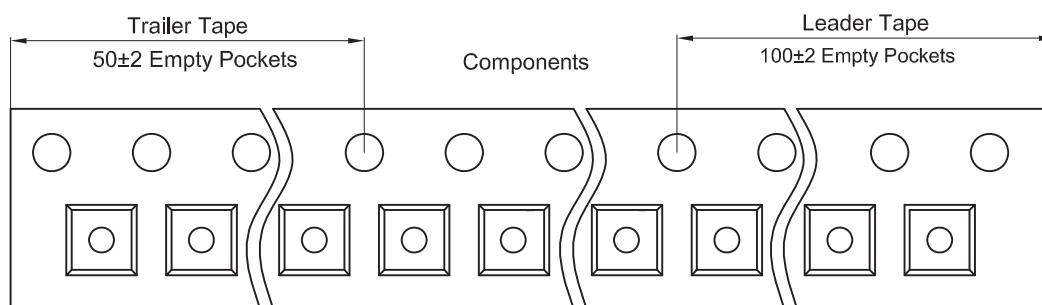
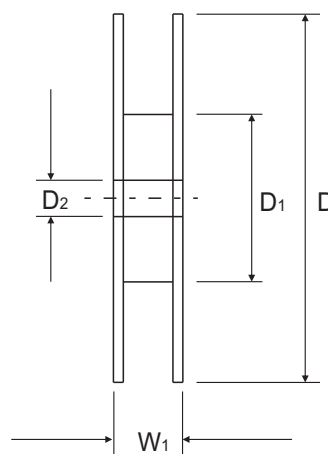
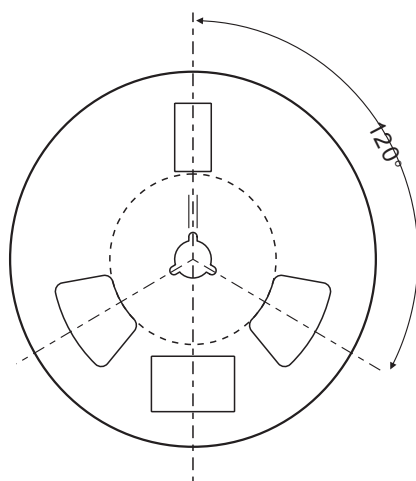
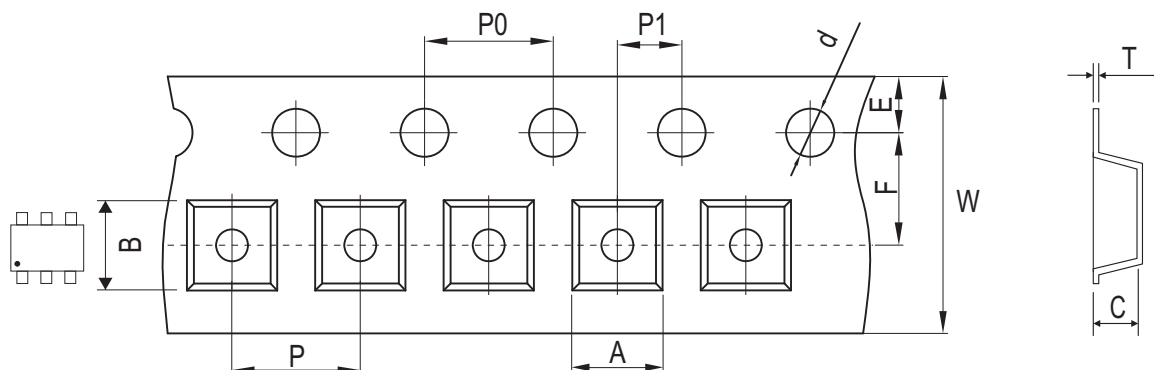


Fig.4 - Capacitance between terminals characteristics



## Reel Taping Specification

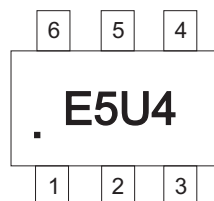


| SOT-23-6 | SYMBOL | A                 | B                 | C                 | d                 | D                        | D1                | D2                |
|----------|--------|-------------------|-------------------|-------------------|-------------------|--------------------------|-------------------|-------------------|
|          | (mm)   | $3.17 \pm 0.10$   | $3.23 \pm 0.10$   | $1.37 \pm 0.10$   | $1.50 \pm 0.05$   | $180.0 + 0.00 / - 0.30$  | $60.00 \pm 0.50$  | $13.00 \pm 0.20$  |
|          | (inch) | $0.125 \pm 0.004$ | $0.127 \pm 0.004$ | $0.054 \pm 0.004$ | $0.059 \pm 0.002$ | $7.087 + 0.00 / - 0.012$ | $2.362 \pm 0.020$ | $0.512 \pm 0.008$ |

| SOT-23-6 | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                         | W1                |
|----------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|-------------------|
|          | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.05$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.05$   | $8.00 + 0.30 / - 0.10$    | $12.30 \pm 0.20$  |
|          | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.002$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.002$ | $0.315 + 0.012 / - 0.004$ | $0.484 \pm 0.008$ |

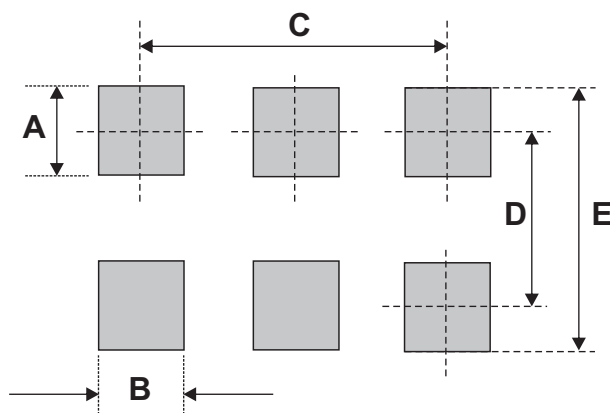
## Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| CPDT6-5V4U-HF | E5U4         |



## Suggested PAD Layout

| SIZE | SOT-23-6 |        |
|------|----------|--------|
|      | (mm)     | (inch) |
| A    | 1.10     | 0.043  |
| B    | 0.60     | 0.024  |
| C    | 1.90     | 0.075  |
| D    | 2.50     | 0.098  |
| E    | 3.60     | 0.142  |



## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOT-23-6  | 3,000           | 7                   |