

# CPDQ03C5V0AU-HF

RoHS Device  
Halogen Free



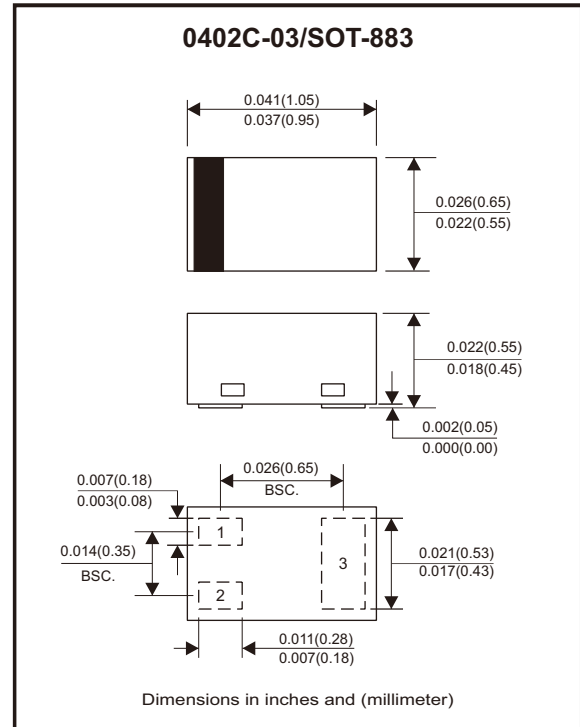
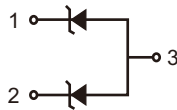
## Features

- Uni-directional ESD protection.
- Low leakage current.
- Low clamping voltage.

## Mechanical data

- Case: 0402C-03/SOT-883 package, molded plastic.
- Polarity: Color band denotes cathode end.
- Mounting position: Any.

## Circuit Diagram



## Maximum Rating (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                   | Conditions                                   | Symbol    | Value       | Unit               |
|-----------------------------|----------------------------------------------|-----------|-------------|--------------------|
| Peak pulse power            | $T_P = 8/20\mu\text{s}$                      | $P_{PP}$  | 60          | W                  |
| Peak pulse current          | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 4           | A                  |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | $\pm 18$    | kV                 |
| Operating temperature range |                                              | $T_J$     | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range   |                                              | $T_{STG}$ | -55 to +150 | $^{\circ}\text{C}$ |

## Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                    | Conditions                                  | Symbol    | Min | Typ  | Max | Unit          |
|------------------------------|---------------------------------------------|-----------|-----|------|-----|---------------|
| Working peak reverse voltage |                                             | $V_{RWM}$ |     |      | 5   | V             |
| Forward voltage              | $I_F = 15\text{mA}$                         | $V_F$     |     |      | 1.2 | V             |
| Breakdown voltage            | $I_R = 1\text{mA}$                          | $V_{BR}$  | 6   |      |     | V             |
| Reverse leakage current      | $V_{RWM} = 5\text{V}$                       | $I_R$     |     |      | 0.1 | $\mu\text{A}$ |
| Clamping voltage             | $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$ | $V_C$     |     | 9    | 11  | V             |
|                              | $I_{PP} = 4\text{A}, T_P = 8/20\mu\text{s}$ | $V_C$     |     |      | 15  |               |
| Junction capacitance         | $V_R = 0\text{V}, f = 1\text{MHz}$          | $C_J$     |     | 0.45 | 0.6 | pF            |

Rating and Characteristic Curves (CPDQ03C5V0AU-HF)

Fig.1 - 8/20μs Peak Pulse Current  
Waveform Acc. IEC 61000-4-5

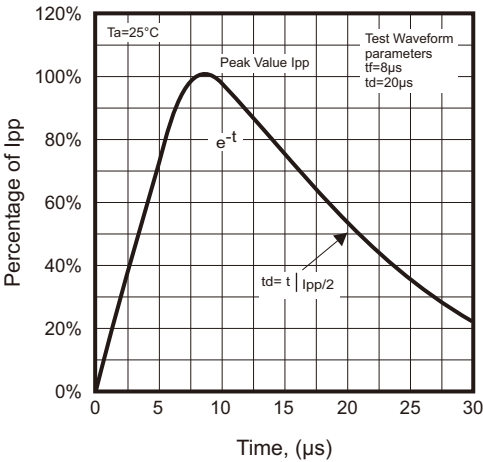


Fig.2 - Power Rating Derating Curve

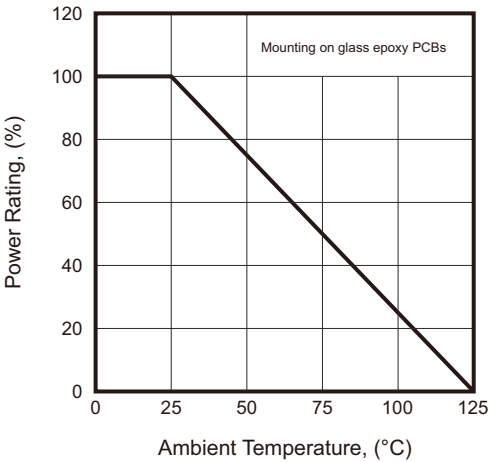


Fig.3 - Typical Clamping Voltage vs.  
Peak Pulse Current

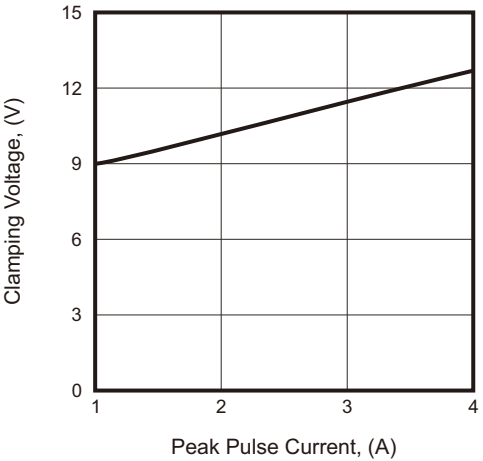


Fig.4 - Typical Capacitance Between  
Terminals Characteristics

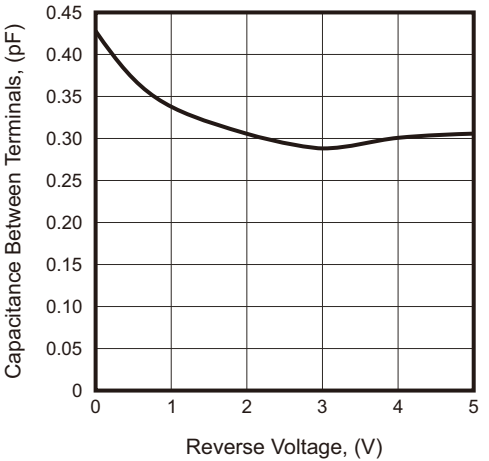
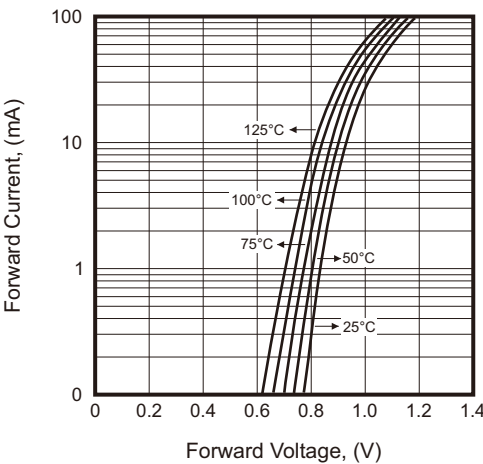
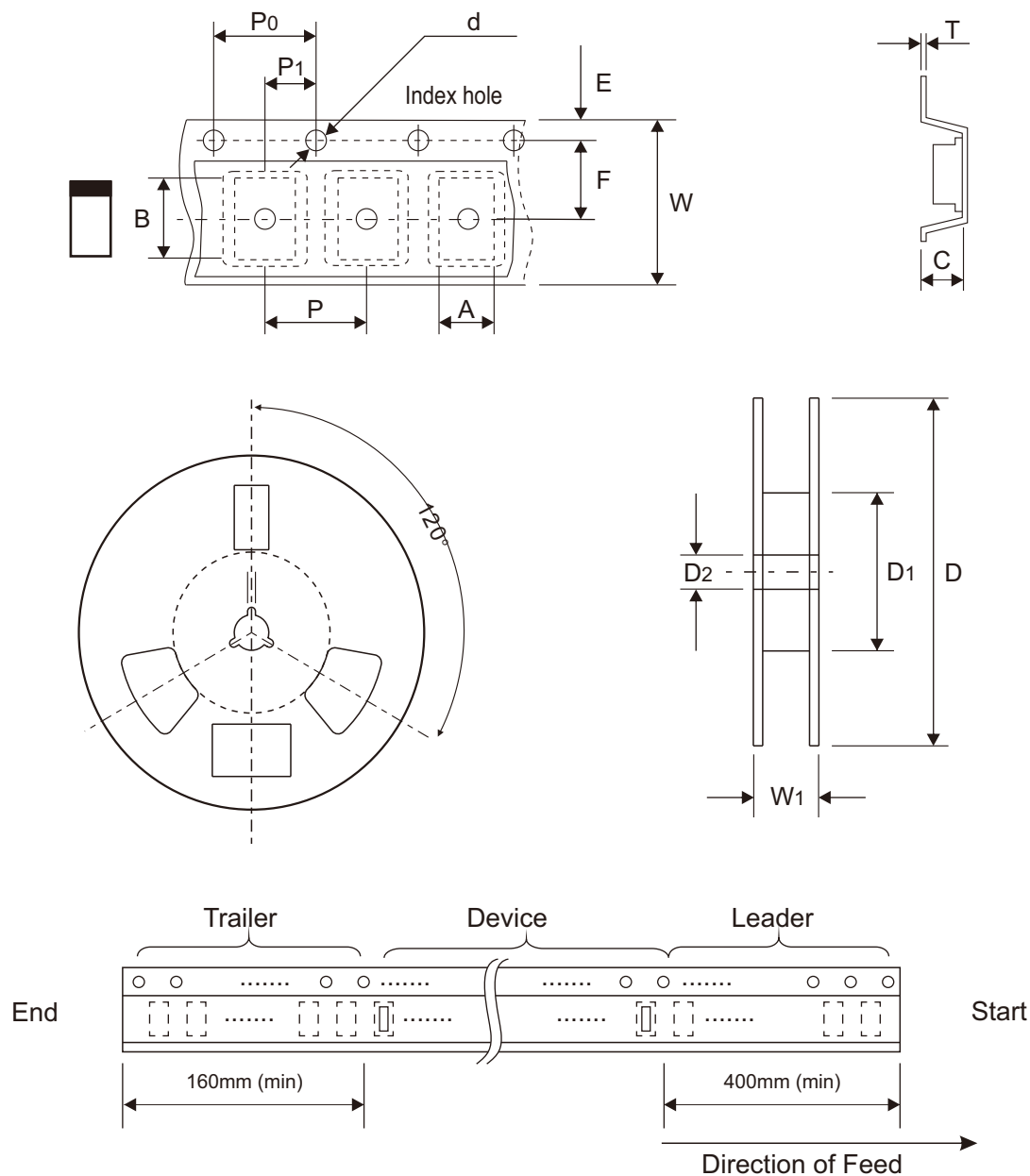


Fig.5 - Forward Characteristic



Reel Taping Specification



| 0402C-03<br>(SOT-883) | SYMBOL | A                 | B                 | C                 | d                       | D                 | D1                | D2                |
|-----------------------|--------|-------------------|-------------------|-------------------|-------------------------|-------------------|-------------------|-------------------|
|                       | (mm)   | $0.75 \pm 0.05$   | $1.17 \pm 0.05$   | $0.65 \pm 0.05$   | $1.50 + 0.10 - 0.00$    | $178.00 \pm 1.00$ | $60.00 \pm 0.50$  | $13.50 \pm 0.20$  |
|                       | (inch) | $0.030 \pm 0.002$ | $0.046 \pm 0.002$ | $0.026 \pm 0.002$ | $0.059 + 0.004 - 0.000$ | $7.008 \pm 0.039$ | $2.362 \pm 0.020$ | $0.531 \pm 0.008$ |

| 0402C-03<br>(SOT-883) | SYMBOL | E                 | F                 | P                 | P0                | P1                | T                       | W                 | W1                      |
|-----------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------------|-------------------|-------------------------|
|                       | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $0.20 + 0.02 - 0.05$    | $8.00 \pm 0.20$   | $12.00 + 0.50 - 0.00$   |
|                       | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.008 + 0.001 - 0.002$ | $0.315 \pm 0.008$ | $0.472 + 0.020 - 0.000$ |

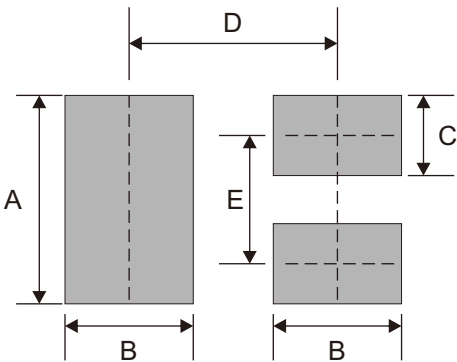
Marking Code

| Part Number     | Marking Code |
|-----------------|--------------|
| CPDQ03C5V0AU-HF | E5A          |



Suggested P.C.B. PAD Layout

| SIZE | 0402C-03<br>(SOT-883) |        |
|------|-----------------------|--------|
|      | (mm)                  | (inch) |
| A    | 0.65                  | 0.026  |
| B    | 0.40                  | 0.016  |
| C    | 0.25                  | 0.010  |
| D    | 0.65                  | 0.026  |
| E    | 0.40                  | 0.016  |



Standard Packaging

| Case Type             | REEL PACK       |                     |
|-----------------------|-----------------|---------------------|
|                       | REEL<br>( pcs ) | Reel Size<br>(inch) |
| 0402C-03<br>(SOT-883) | 5,000           | 7                   |

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