

CPDQC12V-HF

RoHS Device

Halogen Free



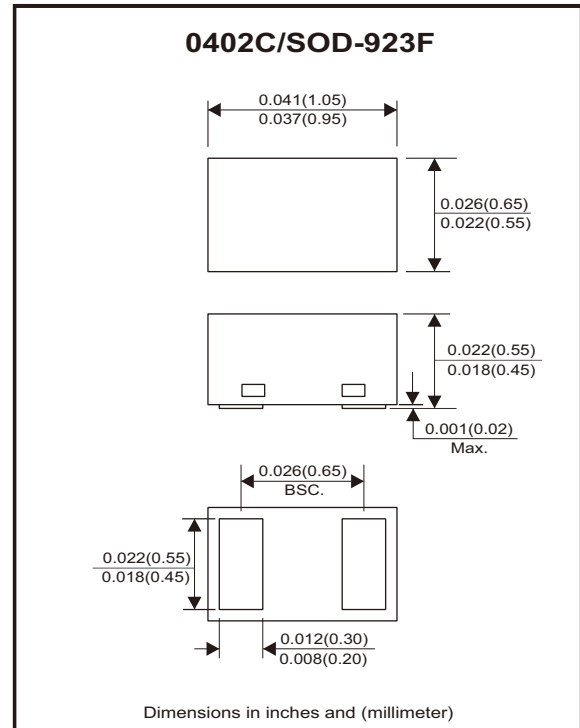
Features

- Bi-directional ESD protection.
- Surface mount package.
- Ultra small SMD package:0402C.
- High component density.

Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750,method 2026.
- Mounting position: Any.
- Weight: 0.001 grams (approx.).

Circuit Diagram



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

| Parameter | Conditions | Symbol | Value | Unit |
|-----------------------------|------------------------|-----------|------------|------|
| Peak pulse power | $T_P = 8/20\mu s$ | P_{PP} | 25 | W |
| ESD capability | IEC 61000-4-2(air) | ESD | ± 16 | kV |
| | IEC 61000-4-2(contact) | ESD | ± 8 | |
| Operating temperature range | | T_j | -40 ~ +125 | °C |
| Storage temperature range | | T_{STG} | -55 ~ +150 | °C |

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

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|-------------------------|--------------------------------|----------|-----|-----|-----|---------|
| Diode breakdown voltage | $I_R = 1mA$ | V_{BR} | 13 | 17 | | V |
| Leakage current | $V_R = 12V$ | I_L | | 0.1 | 2.0 | μA |
| Clamping voltage | $I_{PP} = 1A, T_P = 8/20\mu s$ | V_C | | | 25 | V |
| Junction capacitance | $V_R = 0V, f = 1MHz$ | C_T | | 12 | | pF |

Rating and Characteristic Curves (CPDQC12V-HF)

Fig.1 - 8/20 μ s Peak Pulse Current
Wave Form Acc. IEC 61000-4-5

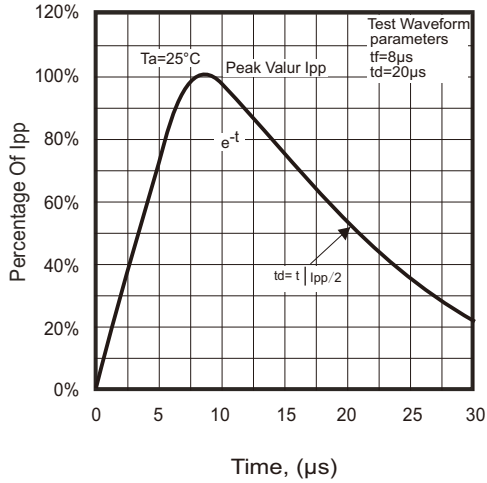


Fig.2 - Reverse Characteristics

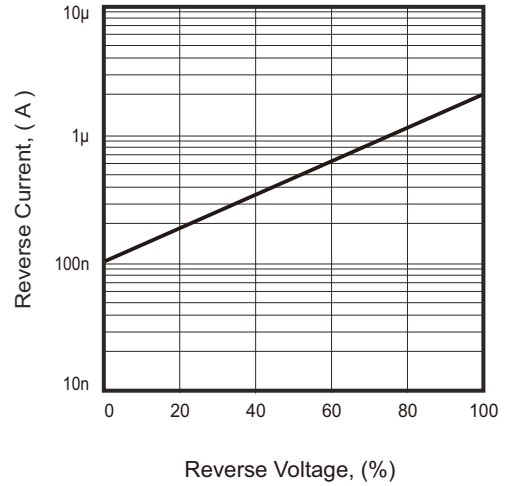


Fig.3 - Capacitance Between
Terminals Characteristics

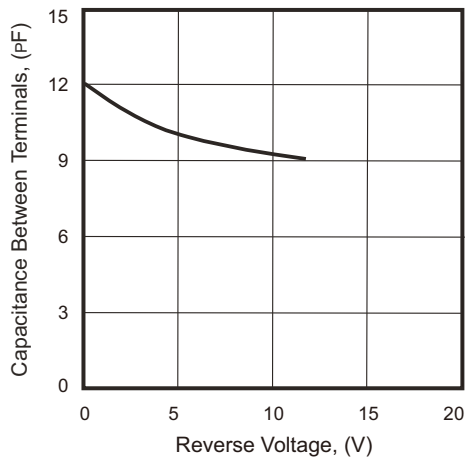
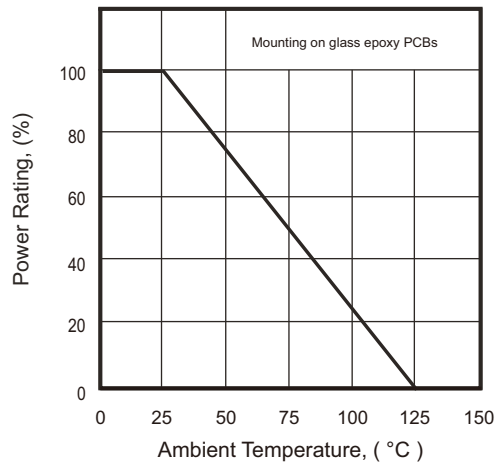
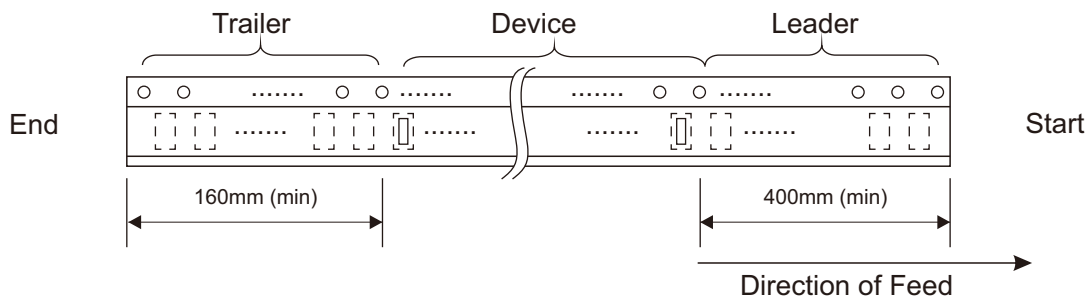
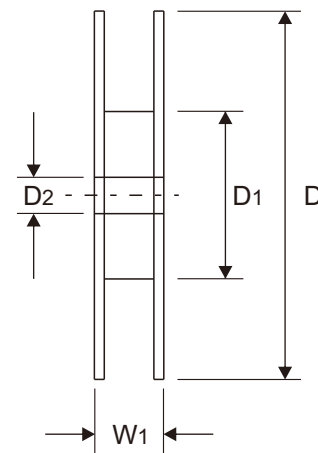
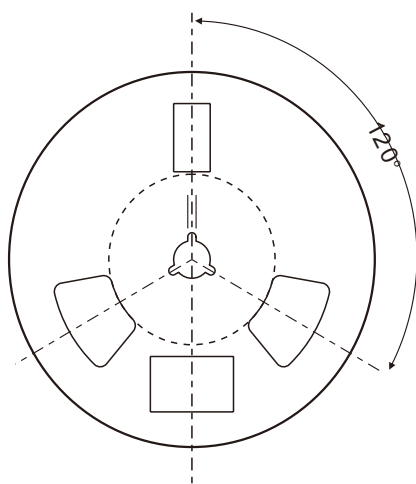
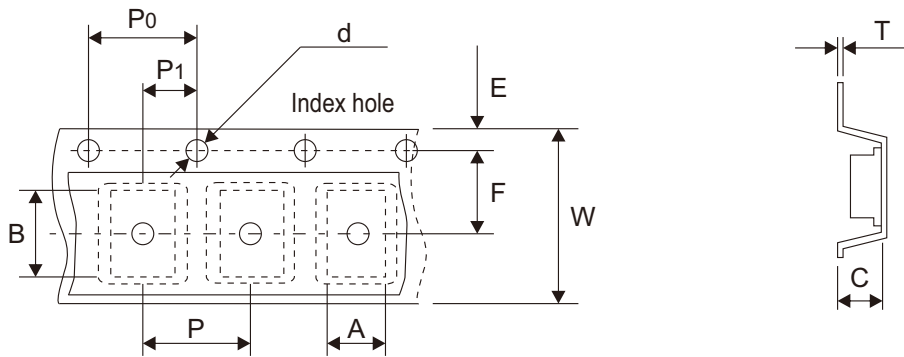


Fig.4 - Power Rating Derating Curve



Reel Taping Specification



| 0402C (SOD-923F) | SYMBOL | A | B | C | d | D | D1 | D2 |
|---------------------|--------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
| | (mm) | 0.75 ± 0.05 | 1.17 ± 0.05 | 0.65 ± 0.05 | 1.50 + 0.10 - 0.00 | 178.00 ± 1.00 | 60.00 ± 0.50 | 13.50 ± 0.20 |
| | (inch) | 0.030 ± 0.002 | 0.046 ± 0.002 | 0.026 ± 0.002 | 0.059 + 0.004 - 0.000 | 7.008 ± 0.039 | 2.362 ± 0.020 | 0.531 ± 0.008 |

| 0402C (SOD-923F) | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|---------------------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|--------------------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 0.20 + 0.02 - 0.05 | 8.00 ± 0.20 | 12.00 + 0.50 - 0.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.008 + 0.001 - 0.002 | 0.315 ± 0.008 | 0.472 + 0.020 - 0.000 |

Marking Code

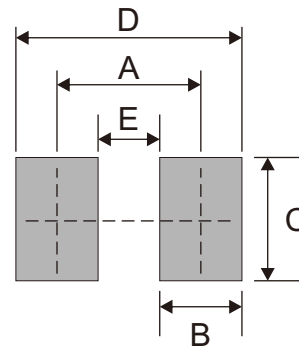
| Part Number | Marking Code |
|-------------|--------------|
| CPDQC12V-HF | E2 |



Product type marking code

Suggested PAD Layout

| SIZE | 0402C/SOD-923F | |
|------|----------------|--------|
| | (mm) | (inch) |
| A | 0.70 | 0.028 |
| B | 0.40 | 0.016 |
| C | 0.60 | 0.024 |
| D | 1.10 | 0.043 |
| E | 0.30 | 0.012 |



Standard Packaging

| Case Type | REEL PACK | |
|----------------|--------------|------------------|
| | REEL (pcs) | Reel Size (inch) |
| 0402C/SOD-923F | 5,000 | 7 |