

CPDQR5V0UP-HF

RoHS Device
Halogen Free

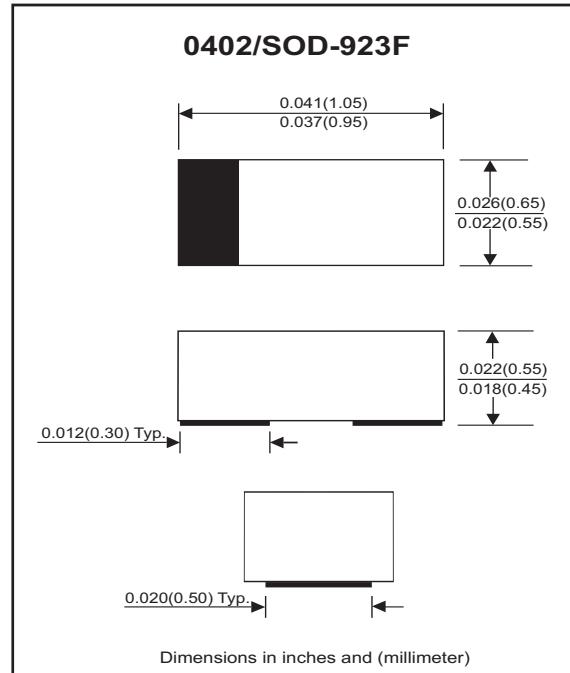


Features

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

Mechanical data

- Case: 0402/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Marking Code: 5P
- Mounting position: Any.
- Weight: 0.001 gram(approx.).



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

| Parameter | Symbol | Value | Unit |
|--------------------------------------------------------------|-----------|-------------|------------------|
| Peak pulse power (tp = 8/20 us) | P_{PP} | 25 | W |
| Peak pulse current (tp = 8/20 us) | I_{PP} | 2 | A |
| ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2(Contact) | ESD | 20 15 | kV |
| Operating temperature | T_J | -55 to +125 | $^\circ\text{C}$ |
| Storage temperature | 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 |
|---------------------------|-----------------------------------------|-----------|-----|------|------|---------------|
| Reverse stand-Off voltage | | V_{RWM} | | | 5 | V |
| Diode breakdown voltage | $I_R = 1\text{mA}$ | V_{BD} | 6 | 7.1 | 8 | V |
| Reverse leakage current | $V_R = 5\text{V}$ | I_R | | 0.06 | 0.25 | μA |
| Forward voltage | $I_F = 10\text{mA}$ | V_F | | 1 | 1.2 | V |
| Clamping voltage | $I_{PP} = 2\text{A}, T_P=8/20\text{us}$ | V_C | | | 12.5 | V |
| Junction capacitance | $V_R = 0\text{V}, f=1\text{MHz}$ | C_T | | | 10 | pF |
| | $V_R = 3.3\text{V}, f=1\text{MHz}$ | | | 4.5 | | |

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

RATING AND CHARACTERISTIC CURVES (CPDQR5V0UP-HF)

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

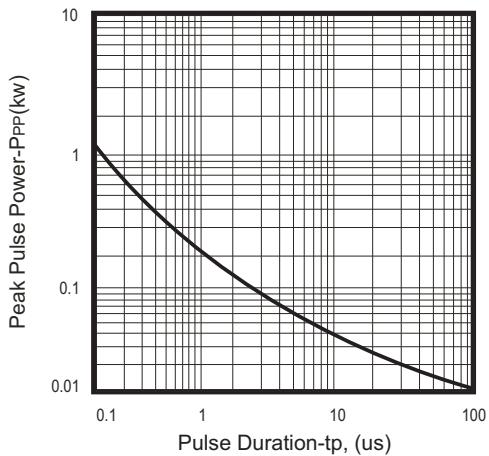


Fig. 2 - Power rating derating curve

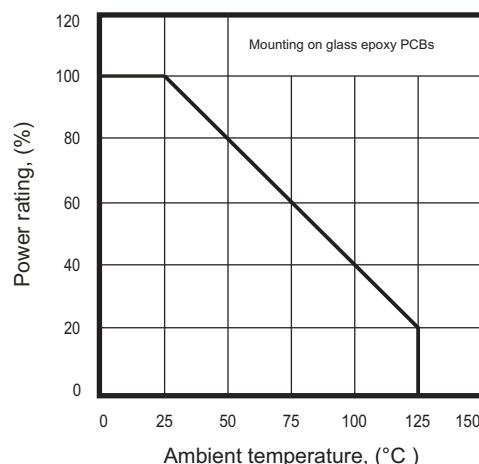


Fig. 3 - Clamping voltage vs. peak pulse current

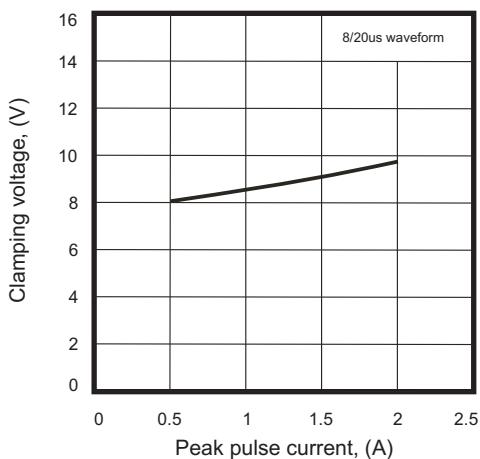


Fig. 4 - Forward voltage vs. forward current

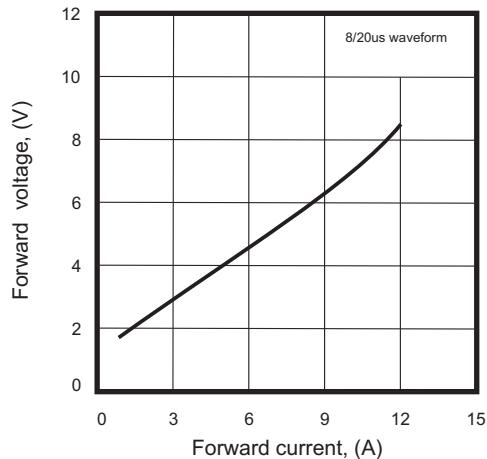
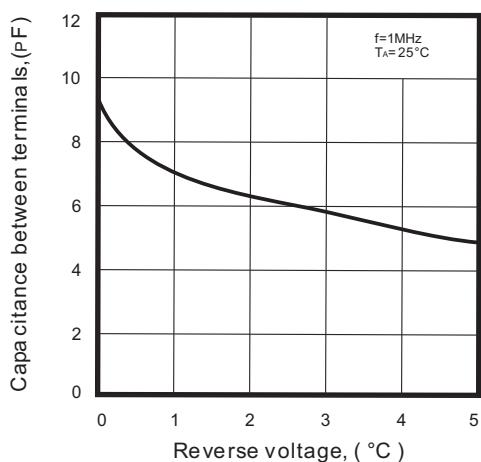
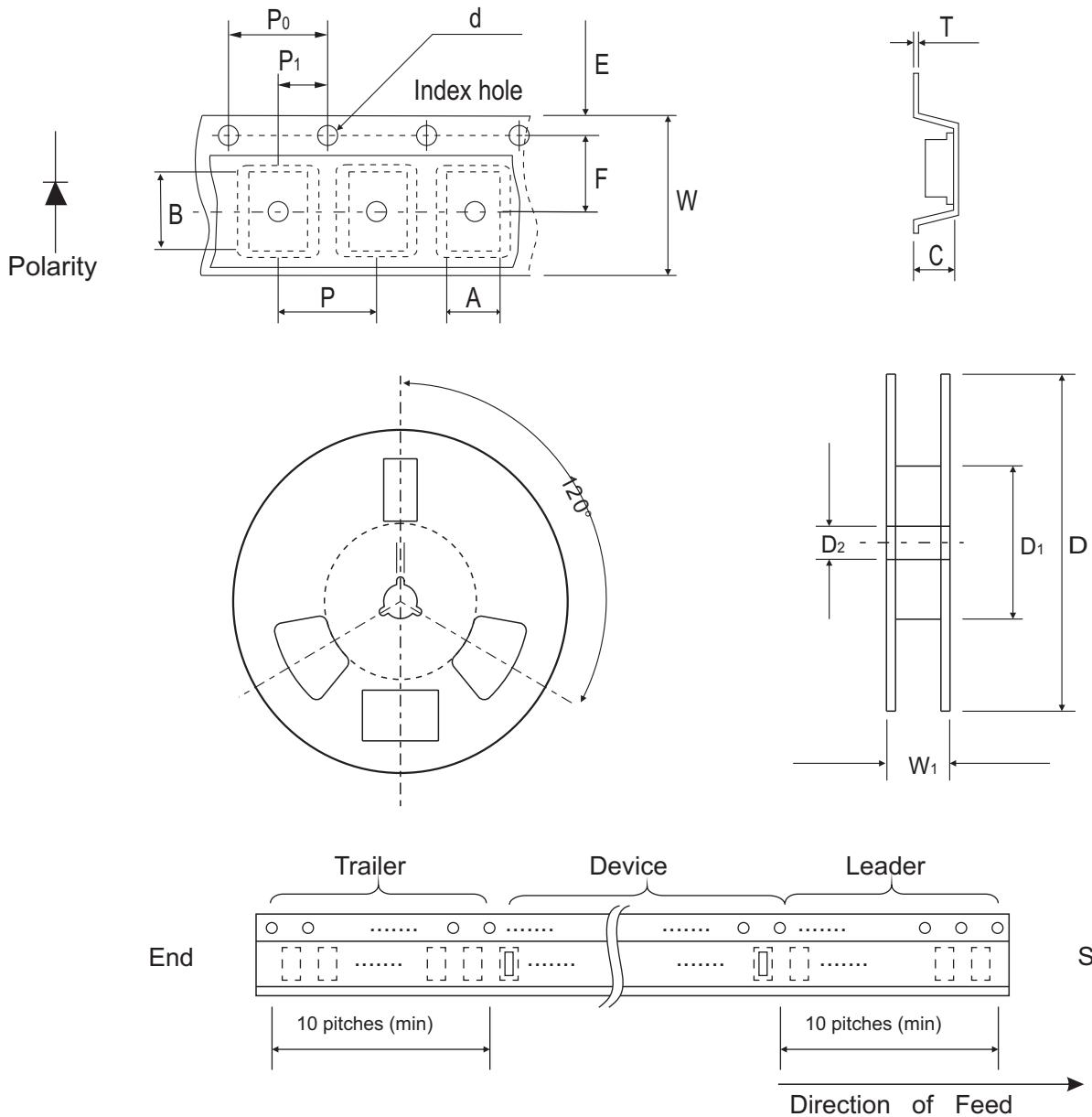


Fig. 5 - Capacitance between terminals characteristics



Reel Taping Specification



| 0402 (SOD-923F) | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|--------------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| | (mm) | 0.75 ± 0.10 | 1.15 ± 0.10 | 0.60 ± 0.10 | 1.55 ± 0.10 | 178 ± 1 | 60.0 MIN. | 13.0 ± 0.20 |
| | (inch) | 0.030 ± 0.004 | 0.045 ± 0.004 | 0.024 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 2.362 MIN. | 0.512 ± 0.008 |

| 0402 (SOD-923F) | SYMBOL | E | F | P | P ₀ | P ₁ | T | W | W ₁ |
|--------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 0.22 ± 0.05 | 8.00 ± 0.20 | 13.5 MAX. |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX. |

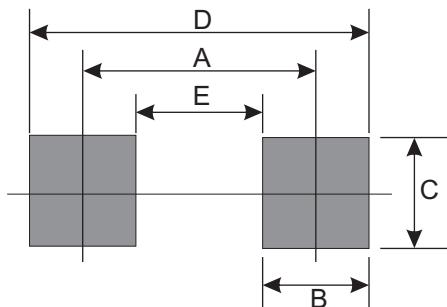
Marking Code

| Part Number | Marking Code |
|---------------|--------------|
| CPDQR5V0UP-HF | 5P |



Suggested PAD Layout

| SIZE | 0402/SOD-923F | |
|------|---------------|--------|
| | (mm) | (inch) |
| A | 0.750 | 0.030 |
| B | 0.500 | 0.020 |
| C | 0.700 | 0.028 |
| D | 1.250 | 0.049 |
| E | 0.250 | 0.010 |



Standard Packaging

| Case Type | Qty Per Reel | Reel Size |
|---------------|--------------|-----------|
| | (Pcs) | (inch) |
| 0402/SOD-923F | 5,000 | 7 |