

## ACPDQC24VE-HF

RoHS Device  
Halogen Free



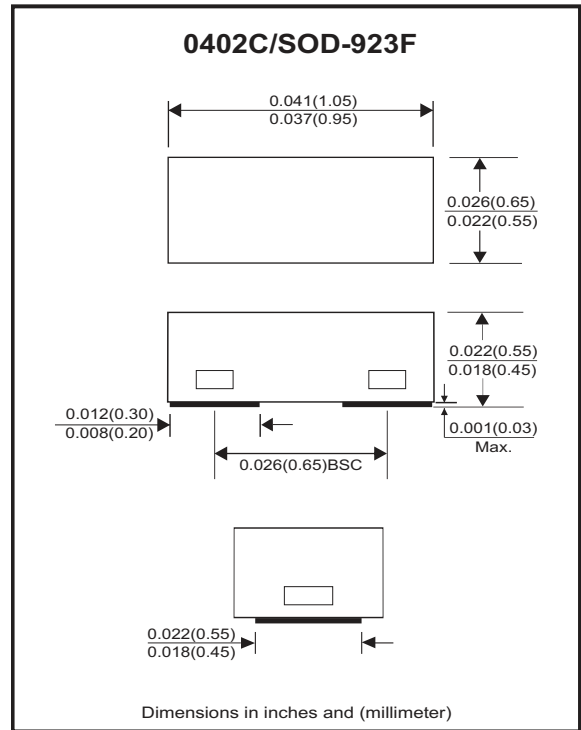
### Features

- Bi-directional ESD protection.
- IEC61000-4-2 Level 4 ESD protection.
- Ultra small SMD package.
- Surface mount package.
- High component density.
- Comply with AEC-Q101

### Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Matte tin 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 <sub>P</sub> = 8/20us                      | P <sub>PP</sub>  | 110      | W    |
| Peak pulse current          | T <sub>P</sub> = 8/20us                      | I <sub>PP</sub>  | 2.5      | A    |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD              | ±25      | kV   |
| Operation temperature range |  | T <sub>J</sub>   | -55~+125 | °C   |
| Storage temperature range   |  | T <sub>STG</sub> | -55~+150 | °C   |

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

| Parameter                    | Conditions   | Symbol           | Min  | Typ | Max      | Unit |
|------------------------------|--|------------------|------|-----|----------|------|
| Working peak reverse voltage |  | V <sub>RWM</sub> |      |     | 24       | V    |
| Breakdown voltage            | I <sub>T</sub> = 1mA   | V <sub>BR</sub>  | 26.5 | 28  | 32       | V    |
| Reverse leakage current      | V <sub>RWM</sub> = 24V   | I <sub>R</sub>   |      |     | 100      | nA   |
| Clamping voltage             | I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us<br>I <sub>PP</sub> = 2.5A, T <sub>P</sub> = 8/20us | V <sub>C</sub>   |      |     | 36<br>44 | V    |
| Junction capacitance         | V <sub>R</sub> = 0V, f = 1MHz  | C <sub>J</sub>   |      | 16  | 25       | pF   |

## RATING AND CHARACTERISTIC CURVES (ACPDQC24VE-HF)

Fig.1 - 8/20us Peak Pulse Current Wave Form ACC. IEC 61000-4-5

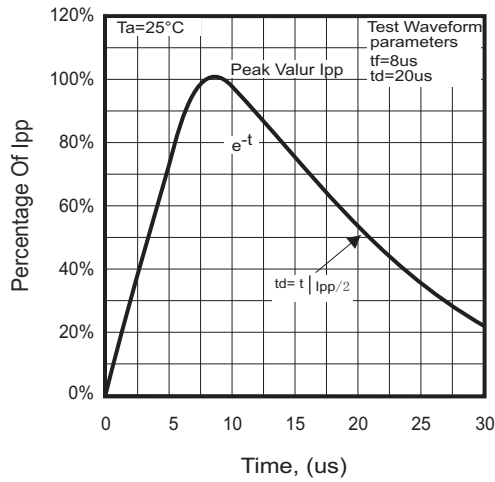


Fig.2 - Power rating derating curve

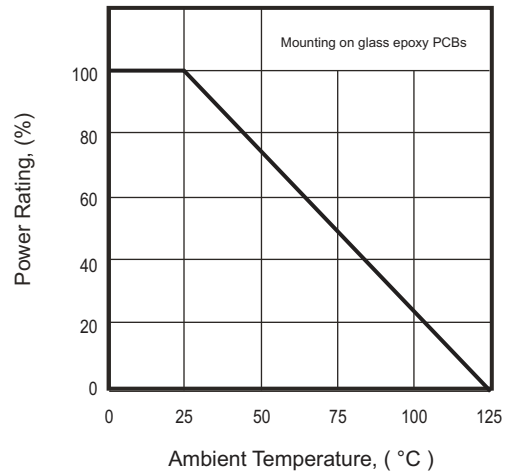


Fig. 3 - Clamping Voltage Vs. Peak Pulse Current

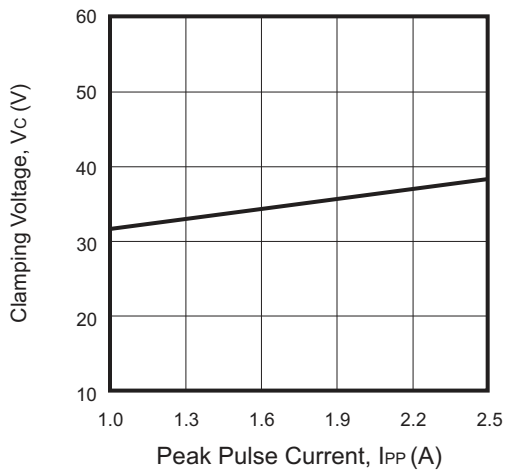
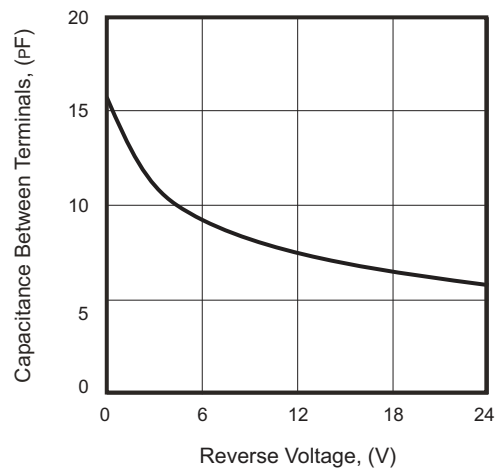
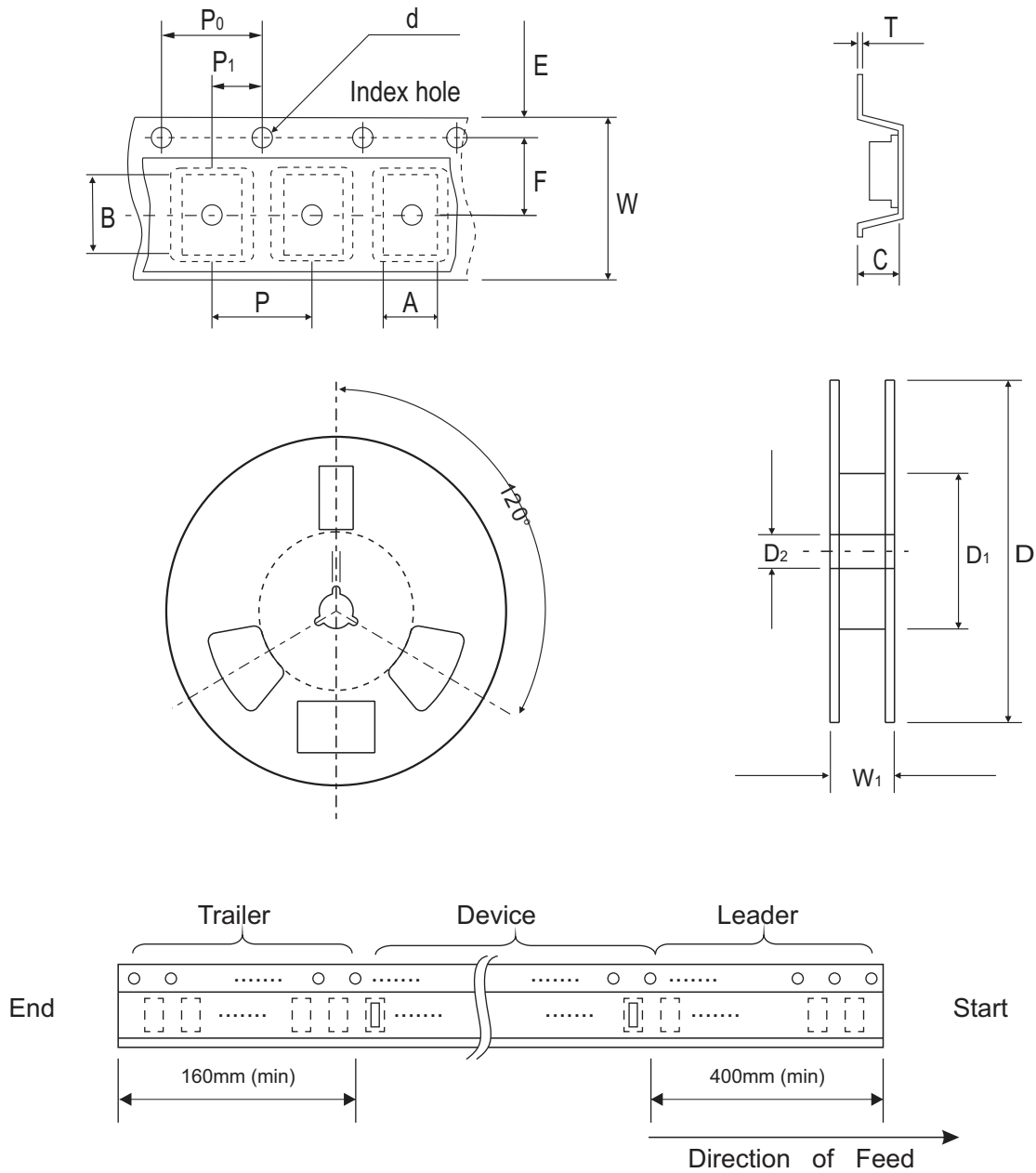


Fig.3 - Capacitance Between Terminals Characteristics



## Reel Taping Specification



| 0402C<br>(SOD-923F) | SYMBOL | A             | B             | C             | d                    | D             | D <sub>1</sub> | D <sub>2</sub> |
|---------------------|--------|---------------|---------------|---------------|----------------------|---------------|----------------|----------------|
|                     | (mm)   | 0.75 ± 0.05   | 1.17 ± 0.05   | 0.65 ± 0.05   | 1.50 + 0.10<br>- 0   | 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<br>- 0 | 7.008 ± 0.039 | 2.362 ± 0.020  | 0.531 ± 0.008  |

| 0402C<br>(SOD-923F) | 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 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 0.20 + 0.02<br>- 0.05    | 8.00 ± 0.20   | 12.00 + 0.50<br>- 0  |
|                     | (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<br>- 0.002 | 0.315 ± 0.008 | 0.472 + 0.020<br>- 0 |

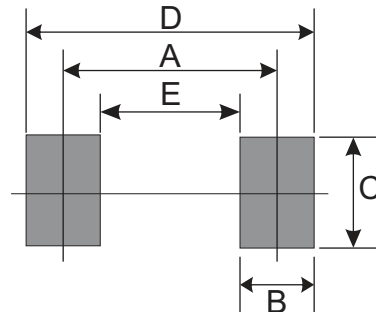
## Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| ACPDQC24VE-HF | E4           |



## Suggested PAD Layout

| SIZE | 0402C/SOD-923F |        |
|------|----------------|--------|
|      | (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 ( pcs ) | Reel Size (inch) |
| 0402C/SOD-923F | 5,000        | 7                |