

## ACPDQC5V0C-HF

**RoHS Device**  
**Halogen Free**

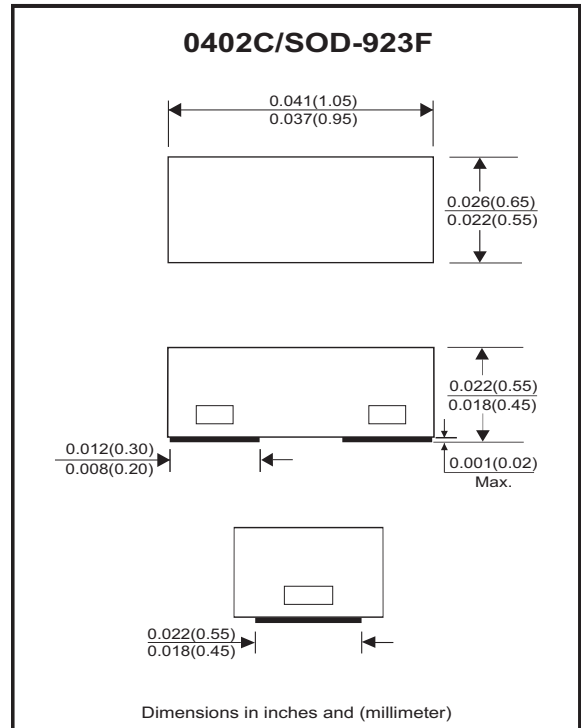


### Features

- Bi-directional ESD protection.
- IEC61000-4-2 Level 4 ESD protection.
- Surface mount package.
- Ultra small SMD package:0402.
- 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



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

| Parameter                 | Conditions                      | Symbol    | Min | Typ | Max | Unit    |
|---------------------------|---------------------------------|-----------|-----|-----|-----|---------|
| Reverse stand-Off voltage |                                 | $V_{RWM}$ |     |     | 5   | V       |
| Diode breakdown voltage   | $I_R = 1mA$                     | $V_{BD}$  | 6.1 | 7.0 |     | V       |
| Leakage current           | $V_R = 5V$                      | $I_L$     |     | 0.1 | 2.0 | $\mu A$ |
| Junction capacitance      | $V_R = 0V, f = 1MHz$            | $C_T$     |     | 25  | 30  | pF      |
| ESD capability            | IEC 61000-4-2(air)              | ESD       |     |     | 16  | kV      |
|                           | IEC 61000-4-2(contact)          | ESD       |     |     | 8   | kV      |
| Clamping Voltage          | $I_{PP} = 1 A, t_p = 8/20\mu s$ | $V_c$     |     |     | 10  | V       |
|                           | $I_{PP} = 4 A, t_p = 8/20\mu s$ | $V_c$     |     |     | 17  | V       |
| Peak Pulse Power          | $T_P = 8/20\mu s$               | PPP       |     |     | 68  | W       |
| Operation temperature     |                                 | $T_j$     | -55 |     | 125 | °C      |
| Storage temperature       |                                 | $T_{STG}$ | -55 |     | 150 | °C      |

## RATING AND CHARACTERISTIC CURVES ( ACPDQC5V0C-HF )

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

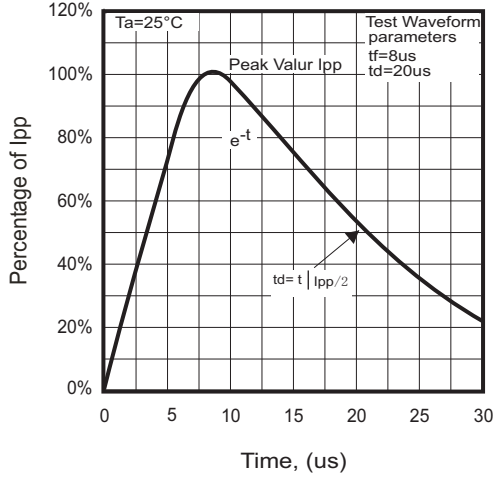


Fig.2 - Typical Capacitance Between Terminals Characteristics

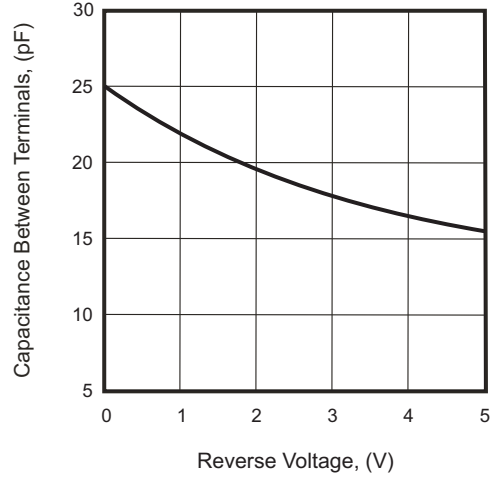


Fig.1 - Reverse Characteristics

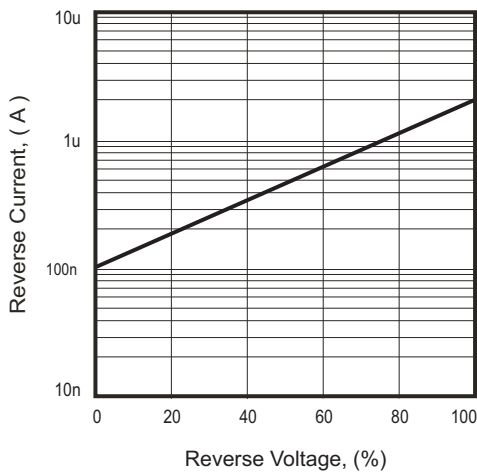


Fig.4 - Clamping Voltage Vs. Peak Pulse Current

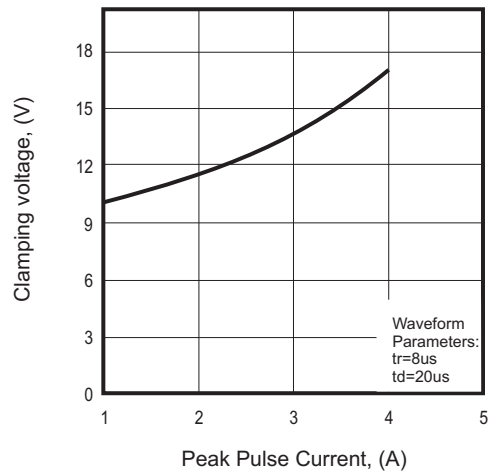
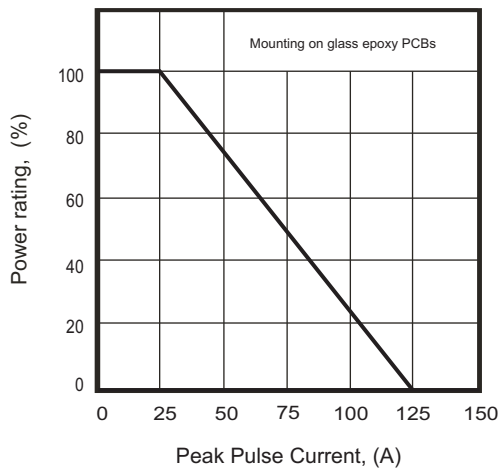
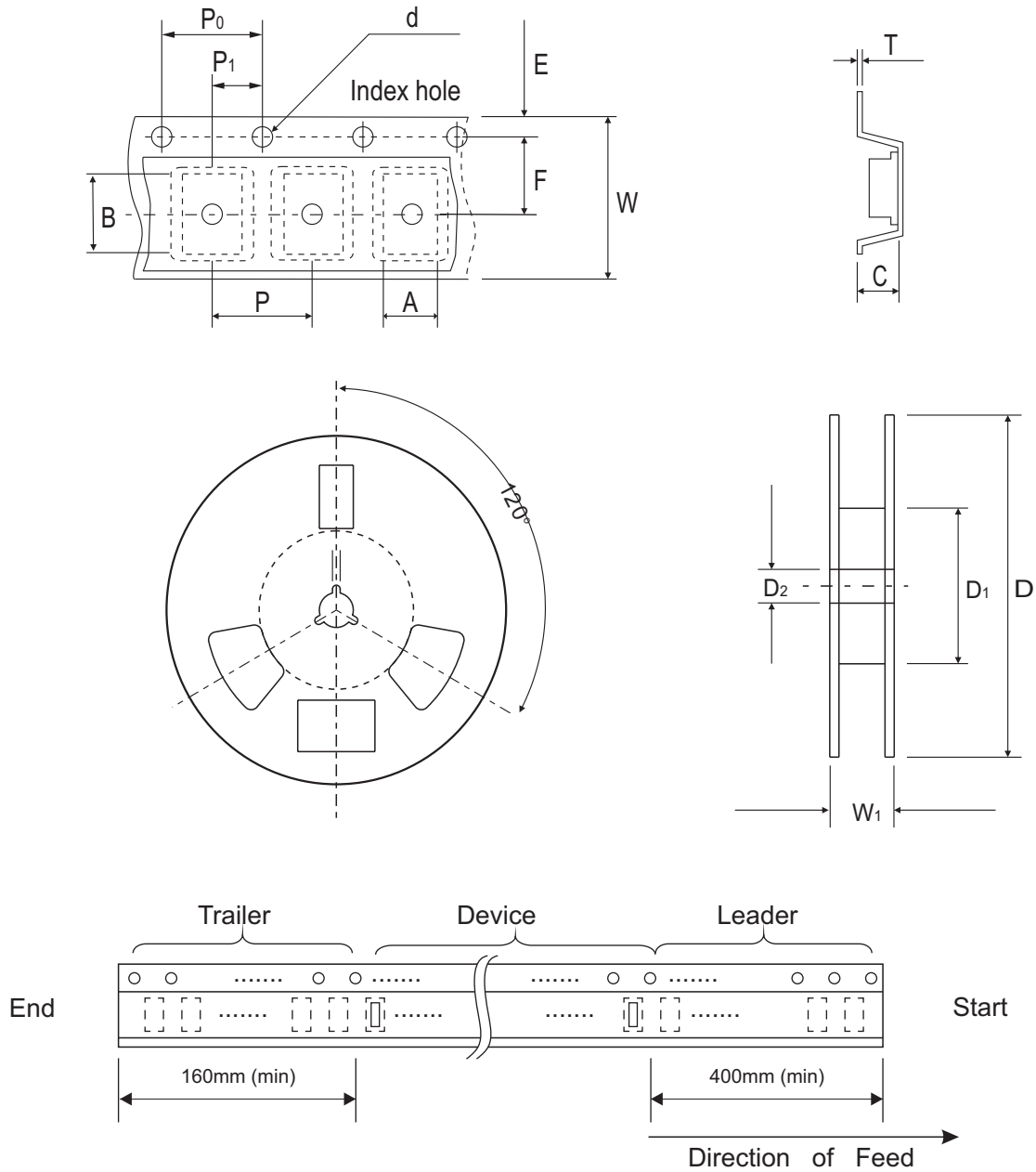


Fig.4 - Power Rating Derating Curve



## 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 |

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

REV:A

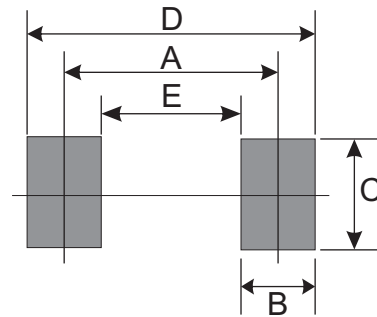
## Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| ACPDQC5V0C-HF | E5           |



## 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                |