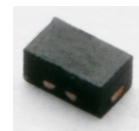


## ACPDQC5V0USP-HF

### RoHS Device

### Halogen Free

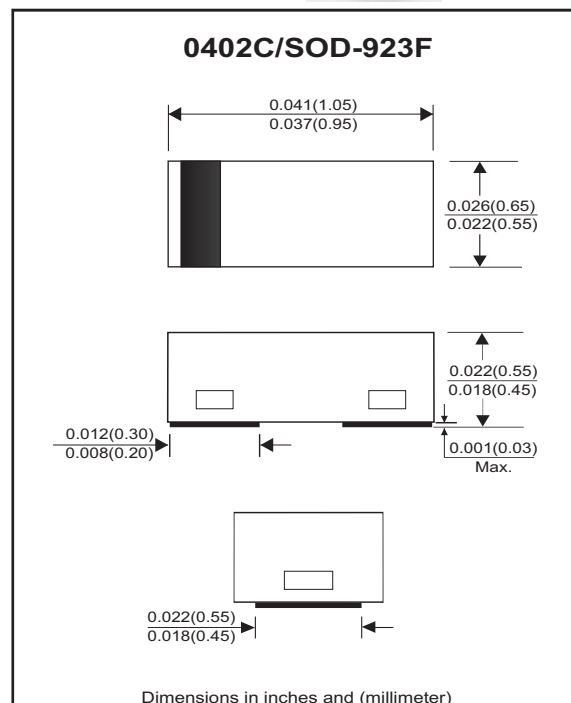


### Features

- Uni-directional ESD protection.
- ESD Protection: IEC61000-4-2 Level 4 ESD protection.
- Surface mount package.
- Low capacitance.
- Low Leakage current.
- 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.
- Marking Code: Cathode band & 5S
- Mounting position: Any.
- Weight: 0.001 gram(approx.).



### Circuit diagram



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

| Parameter                 | Conditions                                                           | Symbol | Min | Typ | Max      | Unit |
|---------------------------|----------------------------------------------------------------------|--------|-----|-----|----------|------|
| Reverse stand-off voltage |                                                                      | VRWM   |     |     | 5.0      | V    |
| Forward voltage           | IF = 10mA                                                            | VF     |     |     | 1.5      | V    |
| Breakdown voltage         | IR = 1mA                                                             | VBR    | 5.4 |     |          | V    |
| Reverse leakage current   | VR = 5V                                                              | IR     |     |     | 1.0      | μA   |
| Junction capacitance      | VR = 0V, f = 1MHz                                                    | CJ     |     | 0.6 | 0.9      | pF   |
| ESD capability            | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                         | ESD    |     |     | 15<br>8  | kV   |
| Clamping voltage          | I <sub>PP</sub> = 1A, TP=8/20us<br>I <sub>PP</sub> = 2.5A, TP=8/20us | VC     |     |     | 13<br>20 | V    |
| Peak pulse power          |                                                                      | PPP    |     |     | 50       | W    |
| Operation temperature     |                                                                      | TJ     |     |     | 150      | °C   |
| Storage temperature       |                                                                      | TSTG   | -55 |     | 150      | °C   |

## RATING AND CHARACTERISTIC CURVES (ACPDQC5V0USP-HF)

Fig. 1 - 8/20us Peak pulse current waveform acc. IEC 61000-4-5

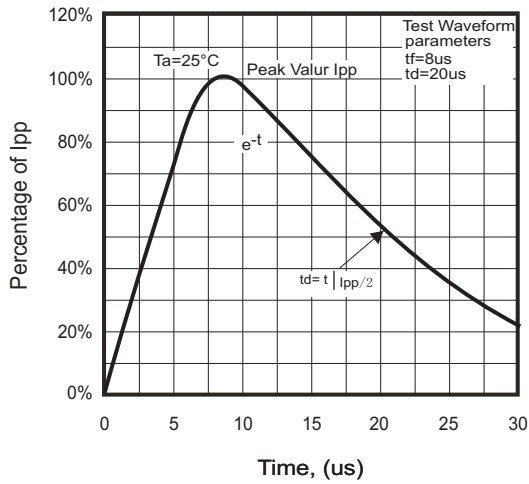


Fig. 2 - Power rating derating curve

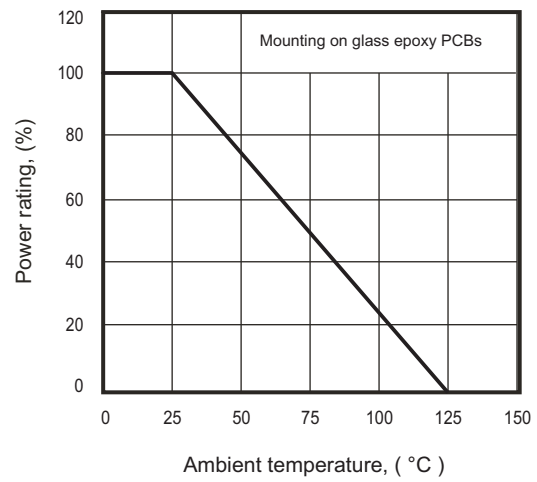


Fig. 3 - Clamping voltage vs. peak pulse current

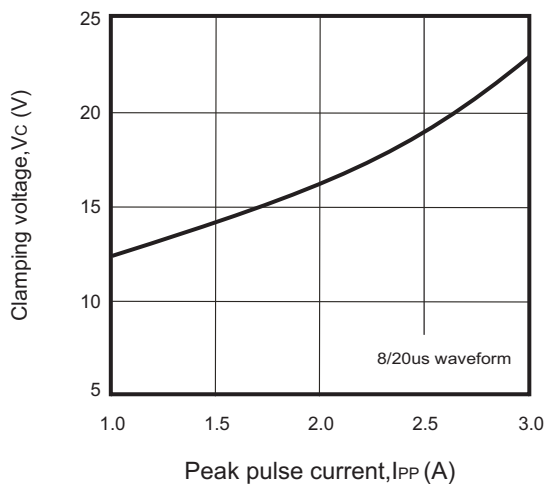


Fig. 4 - Forward voltage vs. forward current

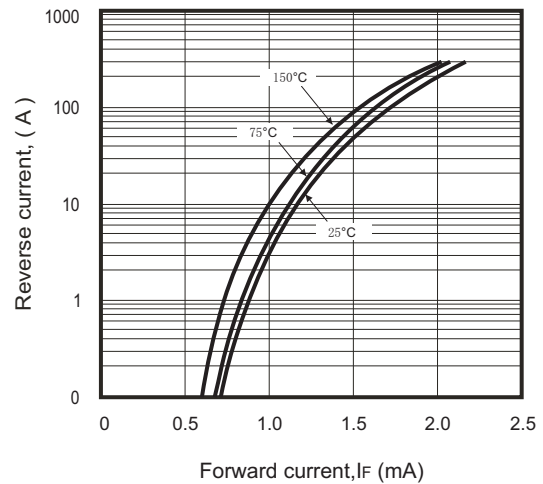
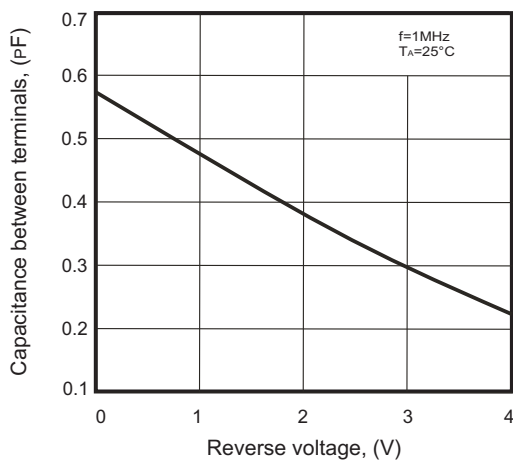
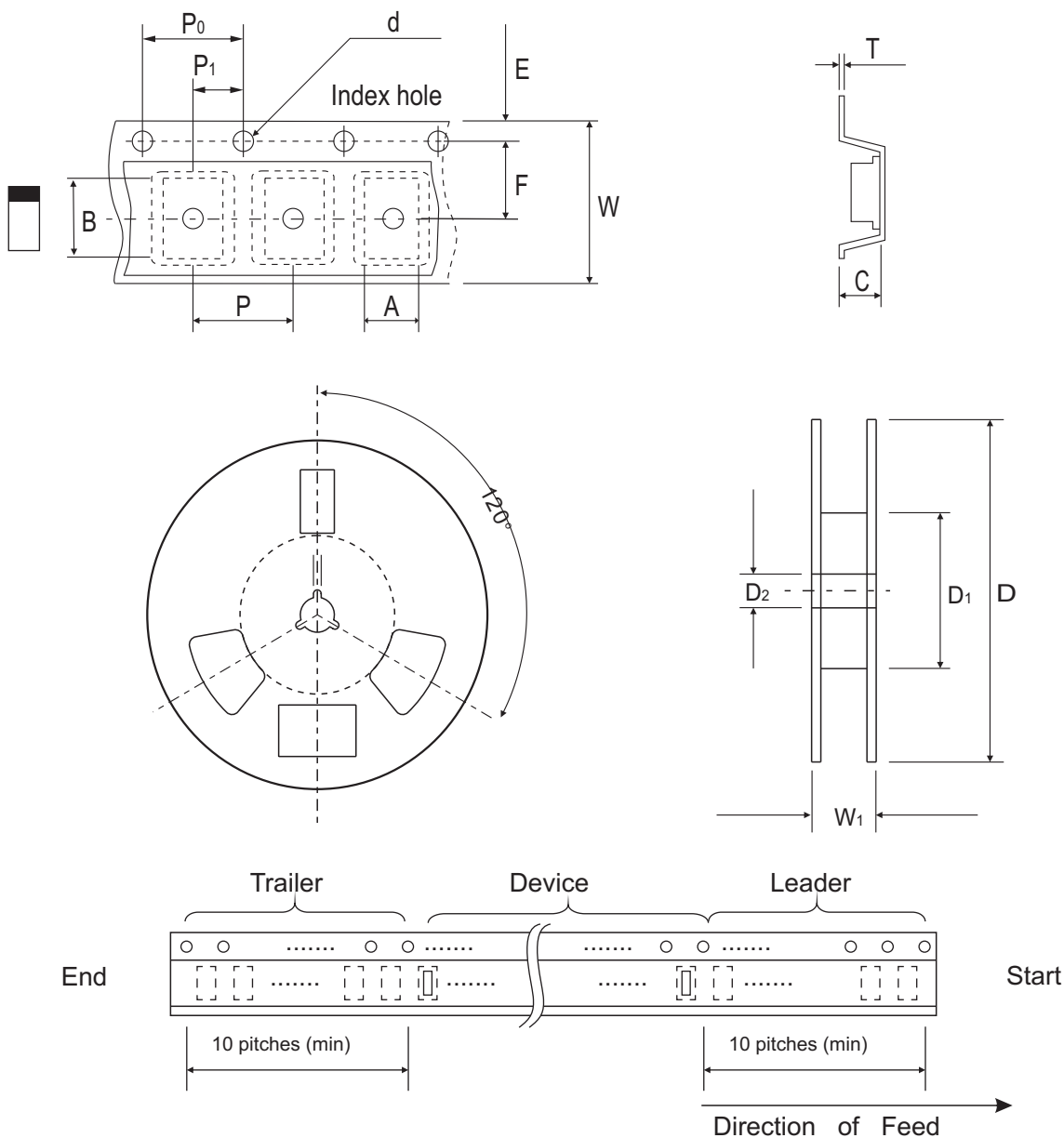


Fig. 5 - Capacitance between terminals characteristics



Reel Taping Specification



| 0402C/<br>SOD-923F | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|--------------------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                    | (mm)   | 0.75 ± 0.10   | 1.15 ± 0.10   | 0.60 ± 0.10   | 1.55 ± 0.10   | 178 ± 1.0     | 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 ± 0.039 | 2.362 MIN.     | 0.512 ± 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 ± 0.05   | 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 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX.     |

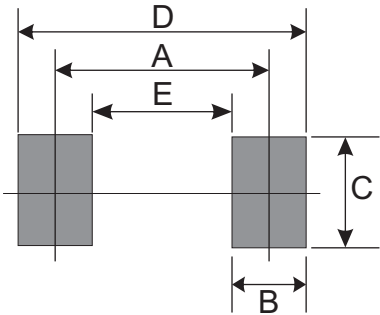
Marking Code

| Part Number     | Marking Code |
|-----------------|--------------|
| ACPDQC5V0USP-HF | 5S           |



Suggested PAD Layout

| SIZE | 0402C/SOD-923F |               |
|------|----------------|---------------|
|      | (mm)           | (inch)        |
| A    | 0.65 BSC       | 0.026 BSC     |
| B    | 0.25 ± 0.05    | 0.010 ± 0.002 |
| C    | 0.50 ± 0.05    | 0.020 ± 0.002 |
| D    | 0.90 ± 0.05    | 0.035 ± 0.002 |
| E    | 0.40 ± 0.05    | 0.016 ± 0.002 |



Standard Packaging

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