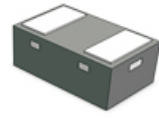


# ACPDQC24VEU-HF

## High-Reliability and High-Performance

### RoHS Device

### Halogen Free

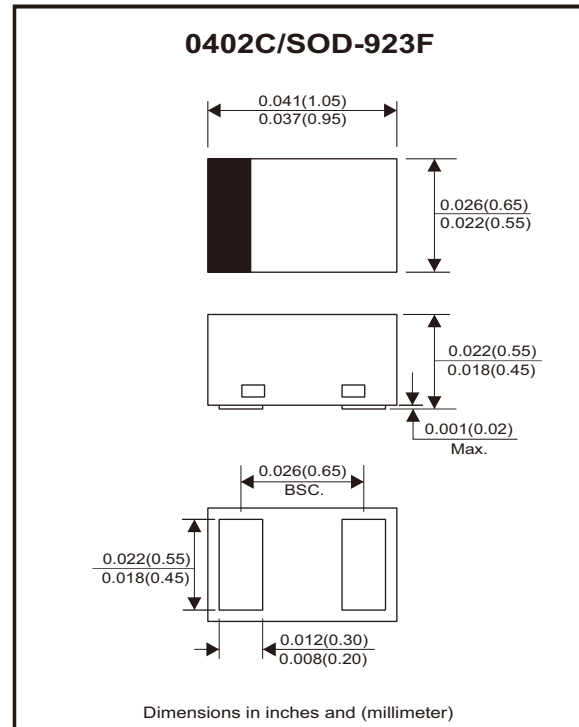


### Features

- Uni-directional ESD protection.
- IEC 61000-4-2 (ESD) ;  $\pm 30\text{KV}$ (contact)
- Surface mount package.
- Ultra small SMD package:0402C.
- High component density.
- AEC-Q101 Qualified.

### Mechanical data

- Case: 0402C/SOD-923F package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-202,method 208.
- Mounting position: Any.
- High temperature soldering guaranteed:  $260^{\circ}\text{C}/10$  second.
- Weight: 0.001 grams(approx.).



### Circuit Diagram



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

| Parameter                   | Conditions                                   | Symbol    | Value         | Unit               |
|-----------------------------|----------------------------------------------|-----------|---------------|--------------------|
| Peak pulse power            | $T_P = 8/20\mu\text{s}$                      | $P_{PP}$  | 132           | W                  |
| Peak pulse current          | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 3             | A                  |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | $\pm 30$      | kV                 |
| Operating temperature range |                                              | $T_J$     | $-55\sim+125$ | $^{\circ}\text{C}$ |
| Storage temperature range   |                                              | $T_{STG}$ | $-55\sim+150$ | $^{\circ}\text{C}$ |

### Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                    | Conditions                                                                                 | Symbol    | Min  | Typ      | Max      | Unit |
|------------------------------|--------------------------------------------------------------------------------------------|-----------|------|----------|----------|------|
| Working peak reverse voltage |                                                                                            | $V_{RWM}$ |      |          | 24       | V    |
| Forward voltage              | $I_F = 10\text{mA}$                                                                        | $V_F$     |      | 0.8      | 1.2      | V    |
| Breakdown voltage            | $I_T = 1\text{mA}$                                                                         | $V_{BR}$  | 26.5 |          | 32       | V    |
| Reverse leakage current      | $V_{RWM} = 24\text{V}$                                                                     | $I_R$     |      |          | 100      | nA   |
| Clamping voltage             | $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$<br>$I_{PP} = 3\text{A}, T_P = 8/20\mu\text{s}$ | $V_C$     |      | 31<br>36 | 34<br>44 | V    |
| Junction capacitance         | $V_R = 0\text{V}, f = 1\text{MHz}$                                                         | $C_J$     |      |          | 35       | pF   |

Rating and Characteristic Curves (ACPDQC24VEU-HF)

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

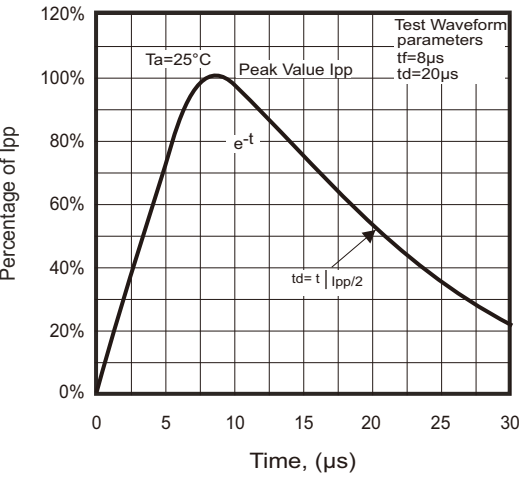


Fig.2 - Power Rating Derating Curve

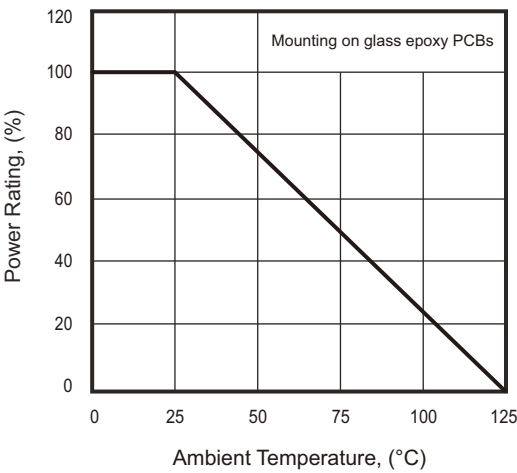


Fig.3 - Typical Clamping Voltage Vs.  
Peak Pulse Current

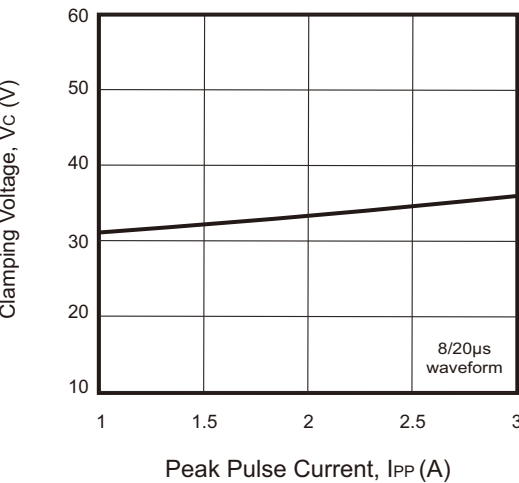


Fig.4 - Forward Characteristic

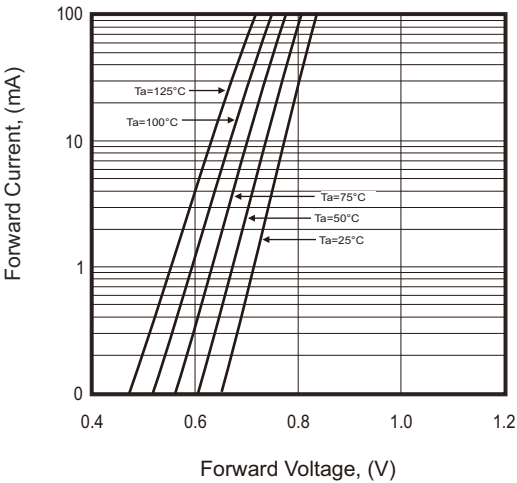
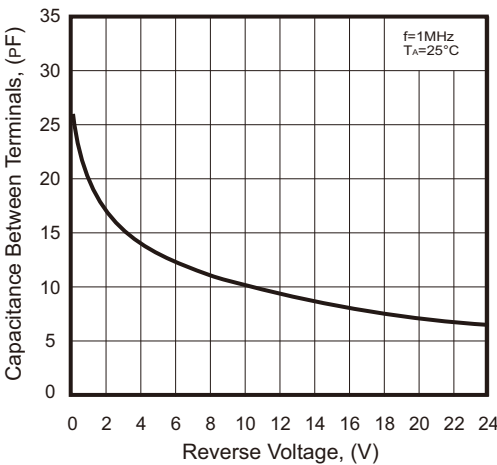
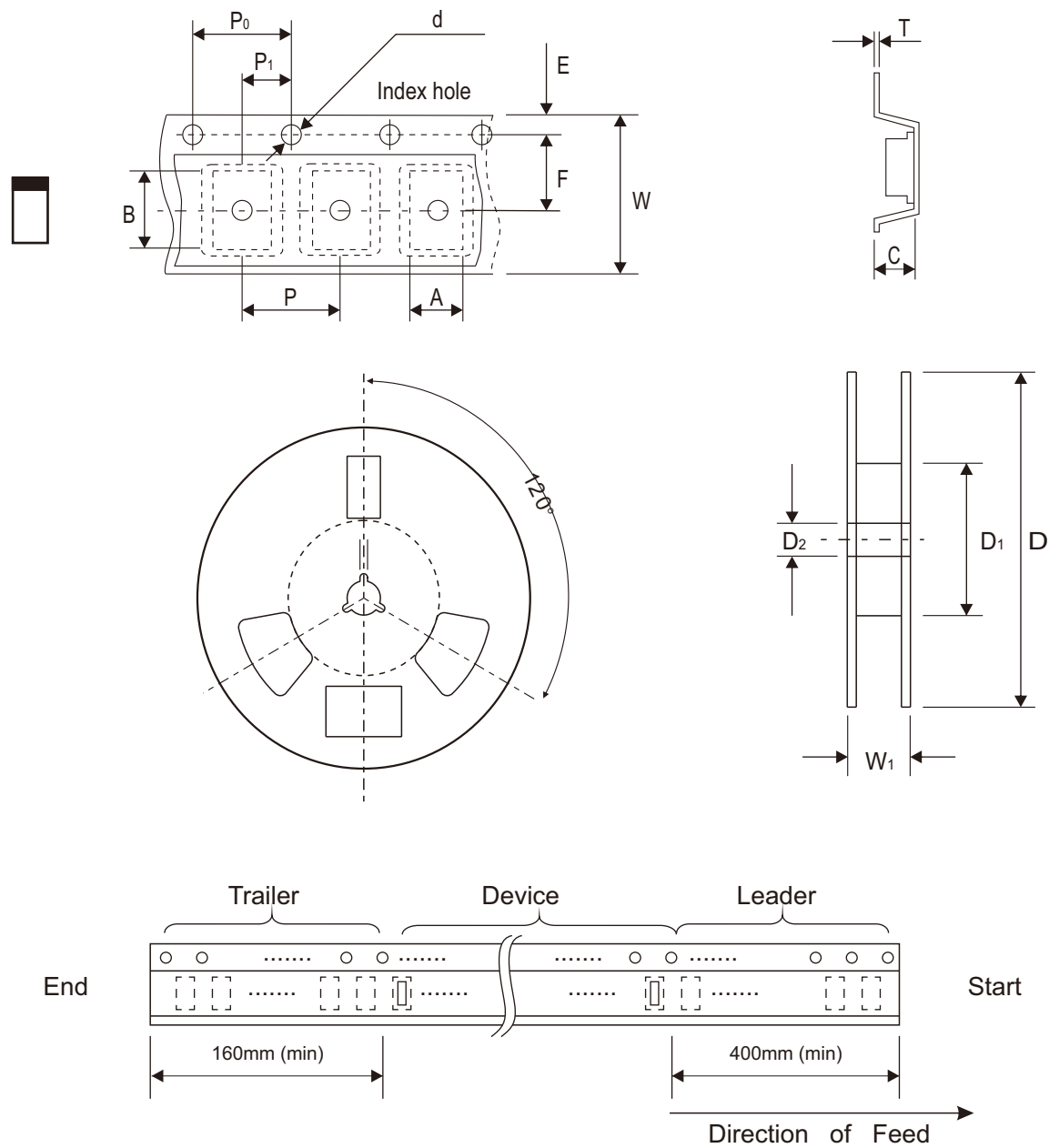


Fig.5 - Typical Capacitance Between  
Terminals Characteristics



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 |

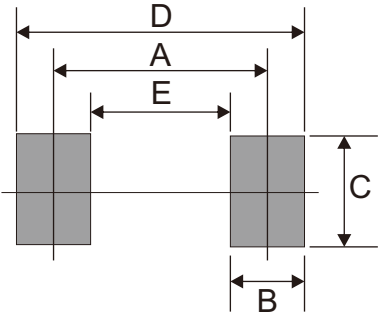
Marking Code

| Part Number    | Marking Code |
|----------------|--------------|
| ACPDQC24VEU-HF | E4           |



Suggested P.C.B. 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<br>( pcs ) | Reel Size<br>(inch) |
| 0402C/SOD-923F | 5,000           | 7                   |