

## ACDBQC40-HF

High-Reliability and High-Performance

$I_o = 200 \text{ mA}$

$V_R = 40 \text{ Volts}$

RoHS Device

Halogen Free



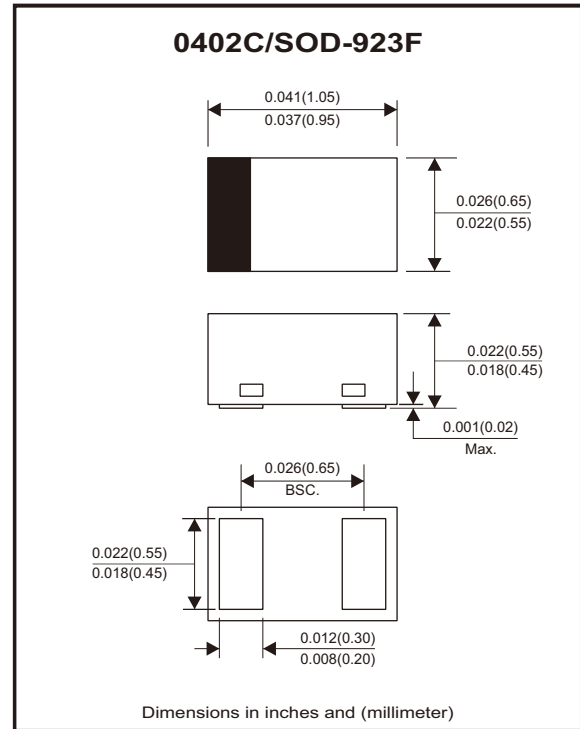
### Features

- Low reverse current.
- Designed for mounting on small surface.
- Extremely thin / leadless package.
- Majority carrier conduction.
- AEC-Q101 Qualified.

### Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.
- Weight: 0.001 grams (approx.).

### Circuit Diagram



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

| Parameter                         | Conditions  | Symbol       | Min | Typ | Max  | Unit             |
|-----------------------------------|---|--------------|-----|-----|------|------------------|
| Peak reverse voltage              |   | $V_{RM}$     |     |     | 40   | V                |
| Reverse voltage                   |   | $V_R$        |     |     | 40   | V                |
| RMS reverse voltage               |   | $V_{R(RMS)}$ |     |     | 28   | V                |
| Average forward rectified current |   | $I_o$        |     |     | 200  | mA               |
| Peak forward surge current        | 8.3 ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$    |     |     | 0.6  | A                |
| Power dissipation                 |   | $P_D$        |     |     | 125  | mW               |
| Operating temperature range       |   | $T_j$        | -55 |     | +125 | $^\circ\text{C}$ |
| Storage temperature range         |   | $T_{STG}$    | -65 |     | +125 | $^\circ\text{C}$ |

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

| Parameter                     | Conditions  | Symbol   | Min | Typ | Max       | Unit          |
|-------------------------------|---|----------|-----|-----|-----------|---------------|
| Forward voltage               | $I_F = 1\text{mA}$<br>$I_F = 40\text{mA}$                                       | $V_F$    |     |     | 0.38<br>1 | V             |
| Reverse current               | $V_R = 30\text{V}$  | $I_R$    |     |     | 0.2       | $\mu\text{A}$ |
| Capacitance between terminals | $f = 1\text{MHz}$ , and 0 VDC reverse voltage                                   | $C_T$    |     |     | 5         | pF            |
| Reverse recovery time         | $I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R$ , $R_L = 100 \text{ ohm}$ | $T_{rr}$ |     |     | 5         | nS            |

## Typical Rating and Characteristic Curves (ACDBQC40-HF)

Fig.1 - Forward Characteristics

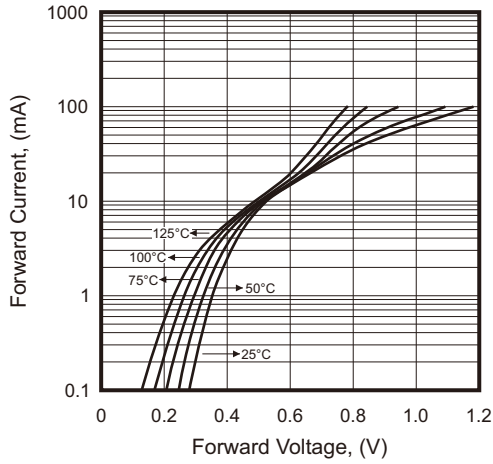


Fig.2 - Reverse Characteristics

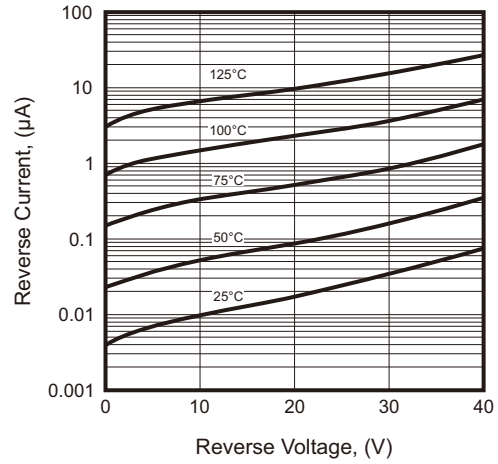


Fig.3 - Typical Capacitance Between Terminals Characteristics

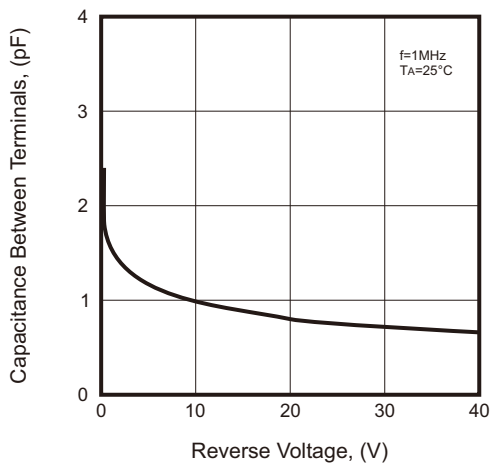
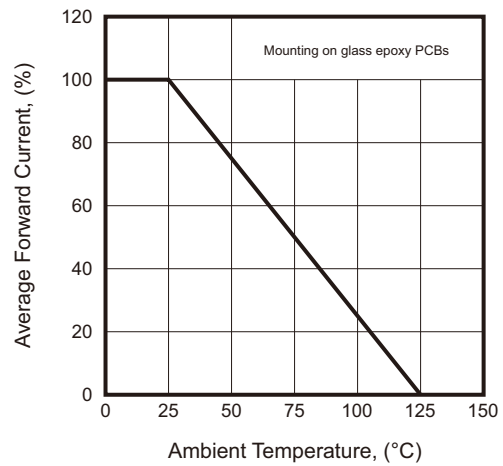
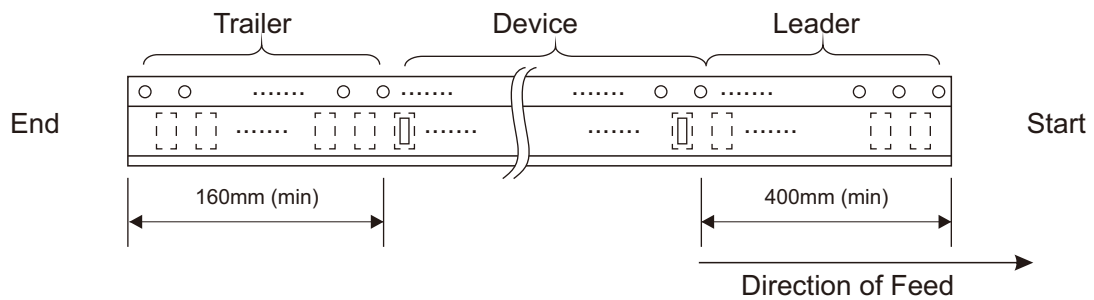
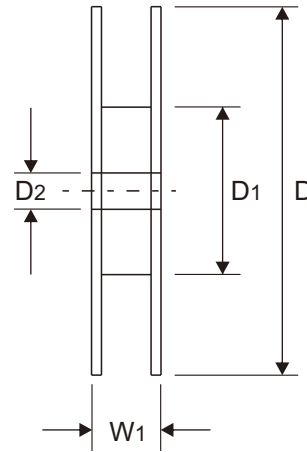
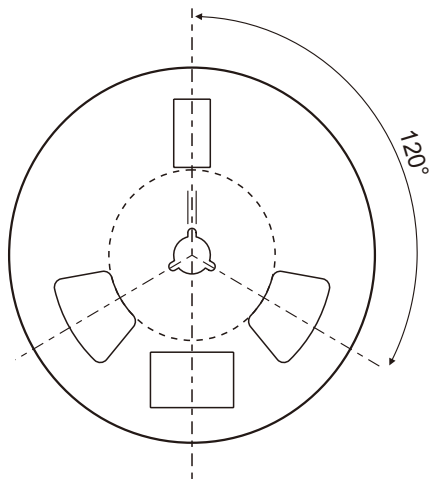
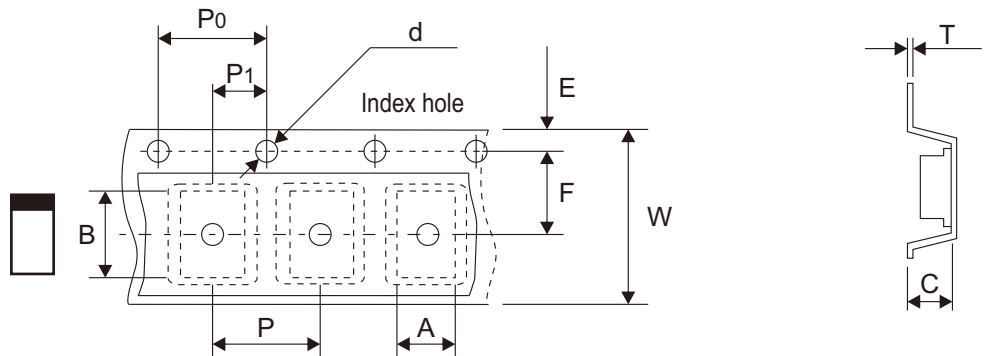


Fig.4 - Current Derating Curve



## Reel Taping Specification



| 0402C<br>(SOD-923F) | SYMBOL | A             | B             | C             | d                        | D             | D1            | D2            |
|---------------------|--------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
|                     | (mm)   | 0.78 ± 0.05   | 1.25 ± 0.05   | 0.65 ± 0.05   | 1.50 + 0.10<br>- 0.00    | 178.00 ± 1.00 | 60.00 ± 0.50  | 13.50 ± 0.20  |
|                     | (inch) | 0.031 ± 0.002 | 0.049 ± 0.002 | 0.026 ± 0.002 | 0.059 + 0.004<br>- 0.000 | 7.008 ± 0.039 | 2.362 ± 0.020 | 0.531 ± 0.008 |

| 0402C<br>(SOD-923F) | SYMBOL | E             | F             | P             | P0            | P1            | T                        | W             | W1                       |
|---------------------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|--------------------------|
|                     | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.10   | 0.20 + 0.03<br>- 0.05    | 8.00 ± 0.20   | 12.00 + 0.50<br>- 0.00   |
|                     | (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>- 0.000 |

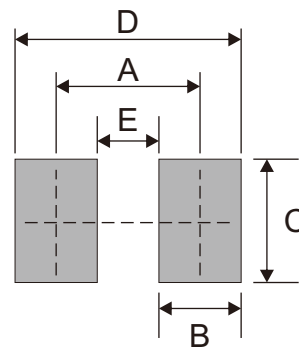
## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| ACDBQC40-HF | BC           |



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