

## CDBQC70-HF

High-Reliability and High-Performance

$I_o = 70 \text{ mA}$

$V_R = 70 \text{ Volts}$

RoHS Device

Halogen Free



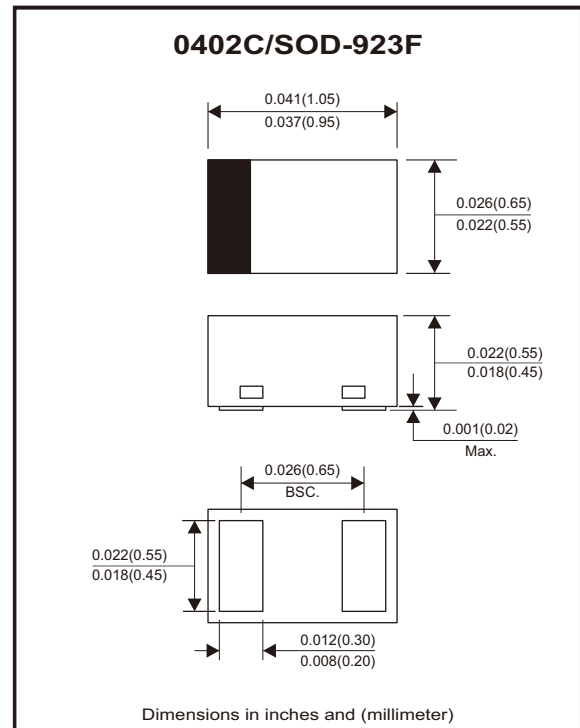
### Features

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

### 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              |  | $V_{RM}$     |     |     | 70   | V                |
| Reverse voltage                   |  | $V_R$        |     |     | 70   | V                |
| RMS reverse voltage               |  | $V_{R(RMS)}$ |     |     | 49   | V                |
| Average forward rectified current |  | $I_o$        |     |     | 70   | mA               |
| Peak forward surge current        | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$    |     |     | 0.1  | A                |
| Power dissipation                 |  | $P_D$        |     |     | 125  | mW               |
| Operating temperature range       |  | $T_j$        | -65 |     | +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>$I_F = 15\text{mA}$                                       | $V_F$    |     |     | 0.41<br>1 | V             |
| Reverse current               | $V_R = 50\text{V}$  | $I_R$    |     |     | 0.1       | $\mu\text{A}$ |
| Capacitance between terminals | $f = 1\text{MHz}$ , and 0 VDC reverse voltage                                   | $C_T$    |     |     | 2         | 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 (CDBQC70-HF)

Fig.1 - Forward Characteristics

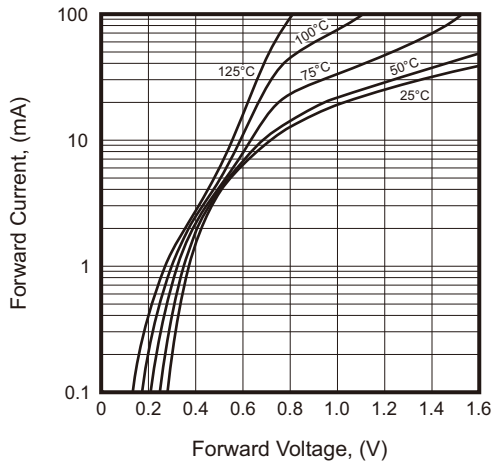


Fig.2 - Reverse Characteristics

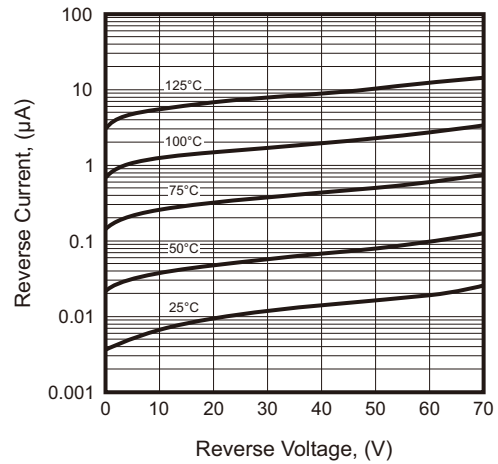


Fig.3 - Typical Capacitance Between Terminals Characteristics

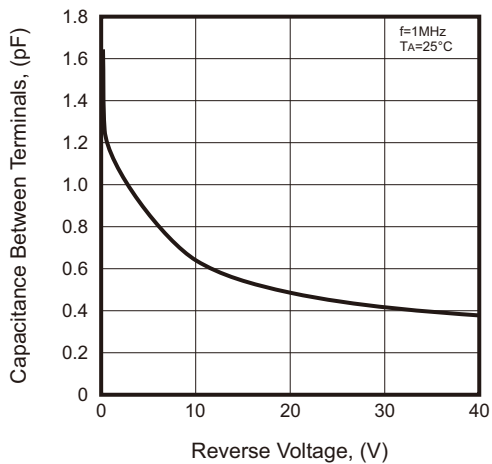
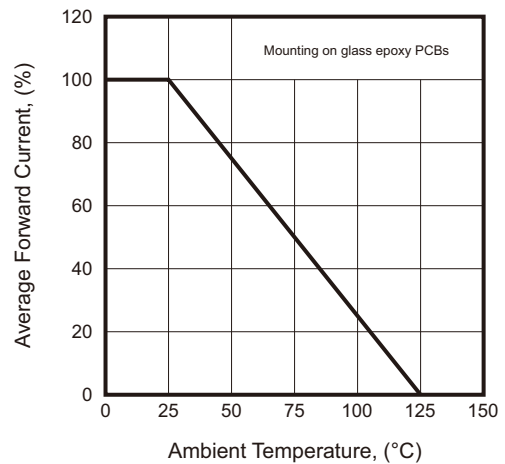
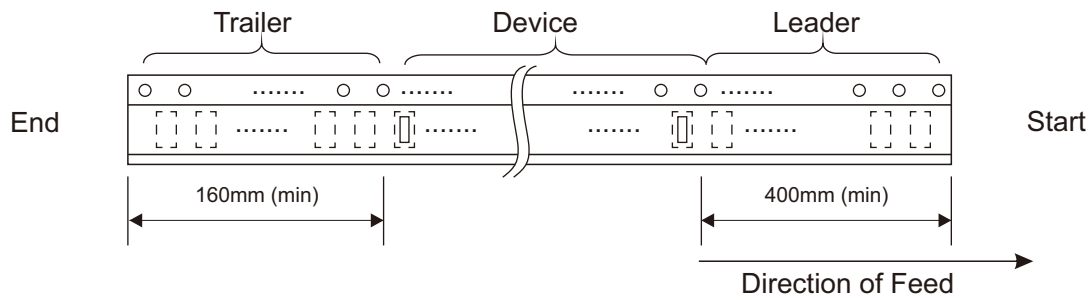
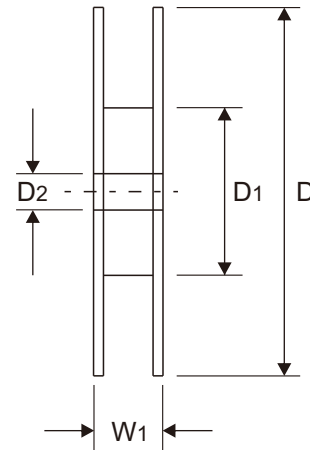
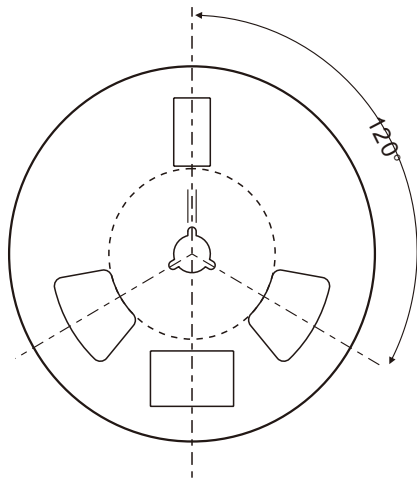
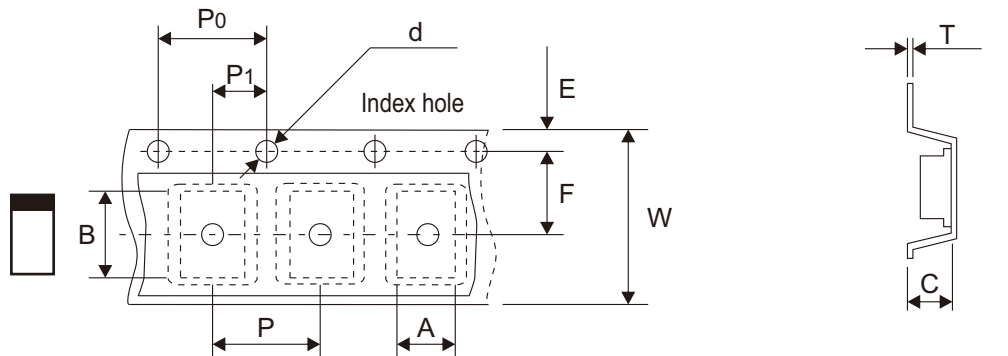


Fig.4 - Current Derating Curve



## Reel Taping Specification



| 0402C<br>(SOD-923F) | SYMBOL | A                 | B                 | C                 | d                            | D                 | D1                | D2                |
|---------------------|--------|-------------------|-------------------|-------------------|------------------------------|-------------------|-------------------|-------------------|
|                     | (mm)   | $0.75 \pm 0.05$   | $1.17 \pm 0.05$   | $0.65 \pm 0.05$   | $1.50 + 0.10$<br>$- 0.00$    | $178.00 \pm 1.00$ | $60.00 \pm 0.50$  | $13.50 \pm 0.20$  |
|                     | (inch) | $0.030 \pm 0.002$ | $0.046 \pm 0.002$ | $0.026 \pm 0.002$ | $0.059 + 0.004$<br>$- 0.000$ | $7.008 \pm 0.039$ | $2.362 \pm 0.020$ | $0.531 \pm 0.008$ |

| 0402C<br>(SOD-923F) | SYMBOL | E                 | F                 | P                 | $P_0$             | $P_1$             | T                            | W                 | $W_1$                        |
|---------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------------|-------------------|------------------------------|
|                     | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $0.20 + 0.02$<br>$- 0.05$    | $8.00 \pm 0.20$   | $12.00 + 0.50$<br>$- 0.00$   |
|                     | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.008 + 0.001$<br>$- 0.002$ | $0.315 \pm 0.008$ | $0.472 + 0.020$<br>$- 0.000$ |

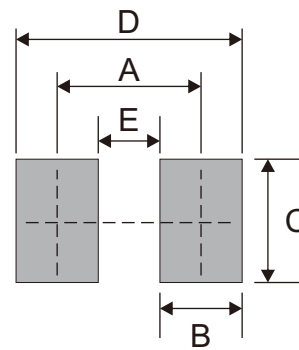
## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| CDBQC70-HF  | BG           |



## 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                |