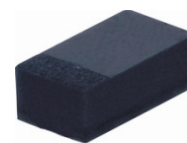


## CDSQR4148S-HF

RoHS Device

Halogen Free



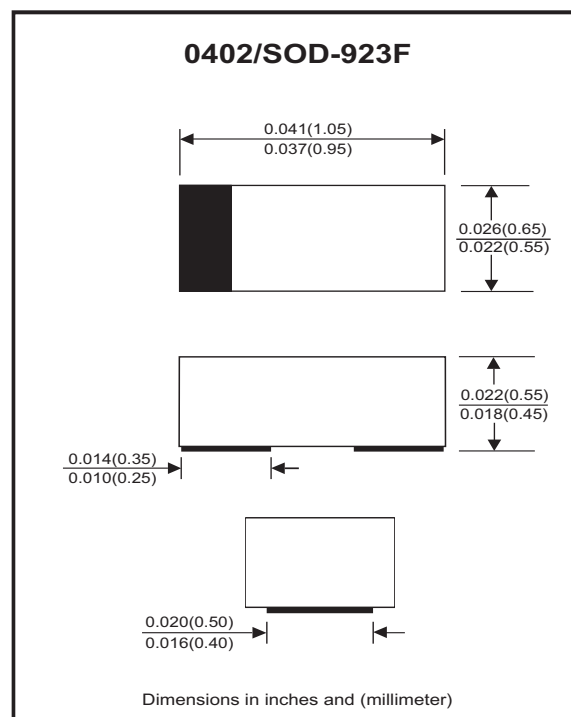
### Features

- High Speed.
- Designed for mounting on small surface.
- Extremely thin/leadless package.
- High mounting capability, strong surge withstand, high reliability.

### Mechanical data

- Case: 0402/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             |
|---------------------------------|--------------------|-----------|-----|-----|------|------------------|
| Repetitive peak reverse voltage |                    | $V_{RRM}$ |     |     | 100  | V                |
| Reverse voltage                 |                    | $V_R$     |     |     | 100  | V                |
| Average forward current         |                    | $I_O$     |     |     | 150  | mA               |
| Forward current, surge peak     | $T_p=8.3\text{mS}$ | $I_{FSM}$ |     | 1.5 |      | A                |
| Repetitive peak forward current |                    | $I_{FRM}$ |     |     | 300  | mA               |
| Power dissipation               |                    | $P_D$     |     |     | 125  | mW               |
| Operating temperature range     |                    | $T_j$     | -40 |     | +150 | $^\circ\text{C}$ |
| Storage temperature range       |                    | $T_{STG}$ | -55 |     | +150 | $^\circ\text{C}$ |

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

| Parameter                     | Conditions                                                                    | Symbol   | Min | Typ | Max       | Unit     |
|-------------------------------|-------------------------------------------------------------------------------|----------|-----|-----|-----------|----------|
| Forward voltage               | $I_F = 100\text{ mA DC}$                                                      | $V_F$    |     |     | 1.0       | V        |
| Reverse current               | $V_R = 20\text{V}$<br>$V_R = 75\text{V}$                                      | $I_R$    |     |     | 25<br>2.5 | nA<br>uA |
| Capacitance between terminals | $f = 1\text{MHz}$ , and 0 VDC reverse voltage                                 | $C_T$    |     |     | 3         | pF       |
| Reverse recovery time         | $I_F = I_R = 10\text{ mA}$ , $R_L = 100\text{ ohms}$ , $I_{rr} = 1\text{ mA}$ | $T_{rr}$ |     |     | 4         | nS       |

RATING AND CHARACTERISTIC CURVES (CDSQR4148S-HF)

Fig.1 - Forward Characteristics

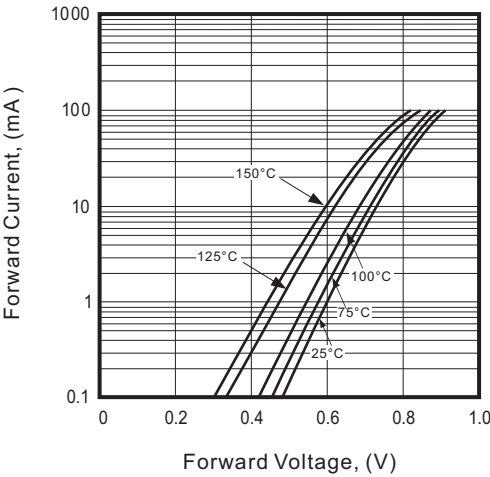


Fig.2 - Reverse Characteristics

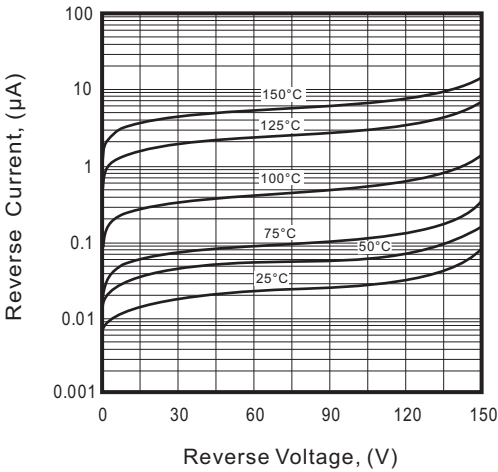


Fig.3 - Capacitance Between Terminals Characteristics

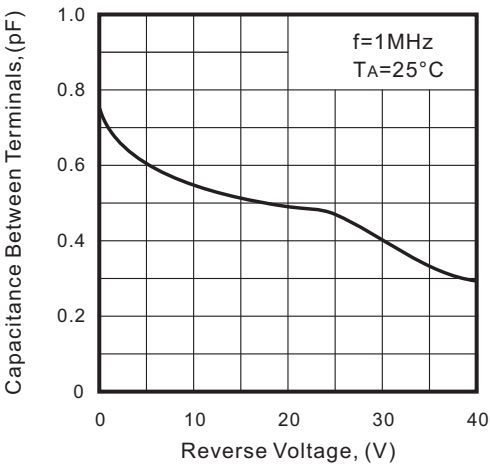
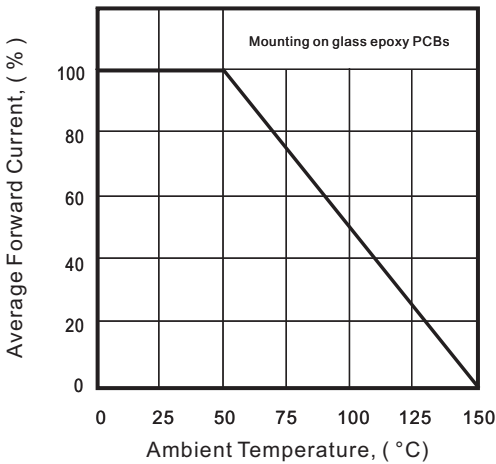
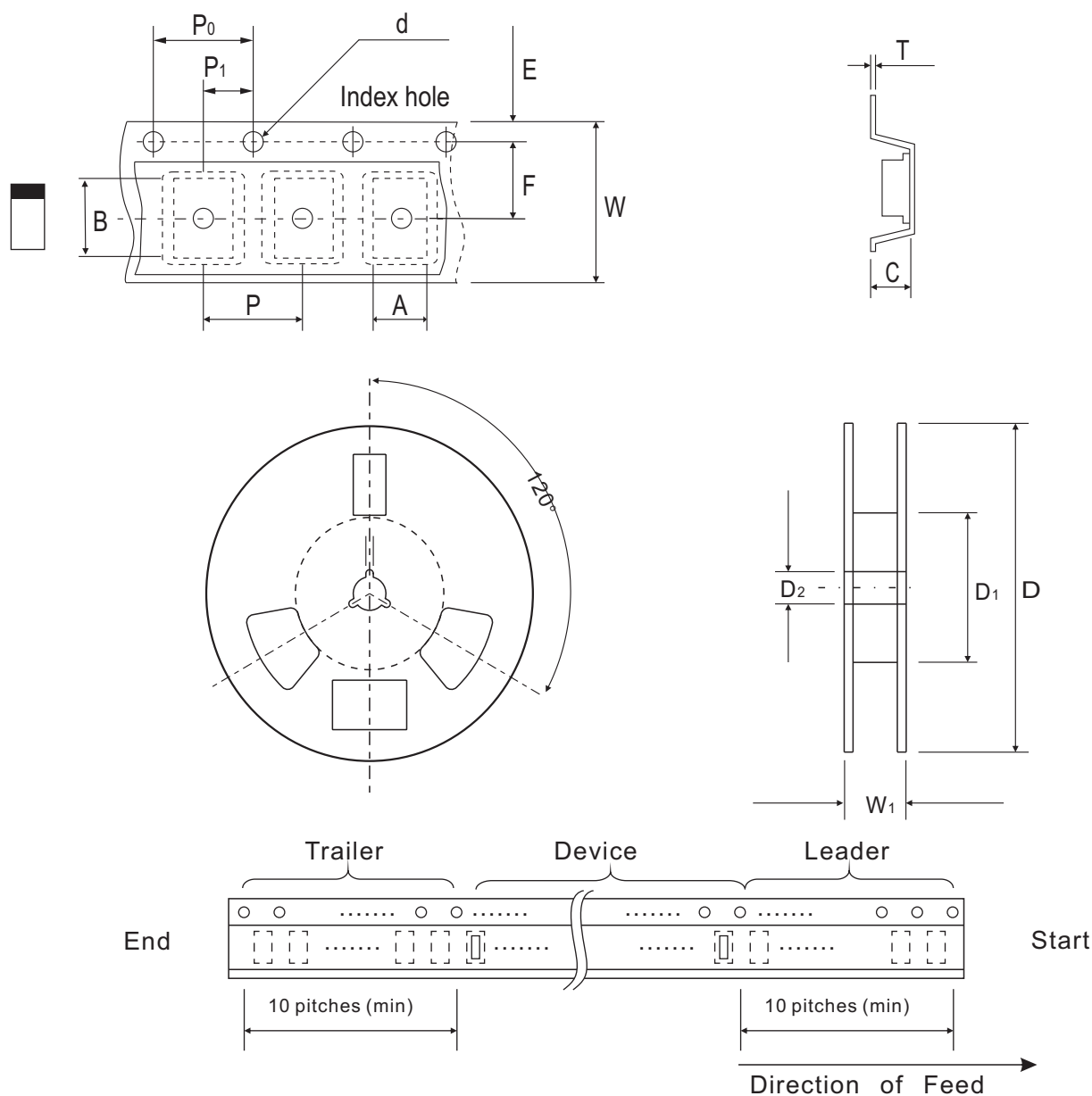


Fig. 4 - Current Derating Curve



## Reel Taping Specification



| 0402<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       | 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 ± 0.040 | 2.362 MIN.     | 0.512 ± 0.008  |

| 0402<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 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX.     |

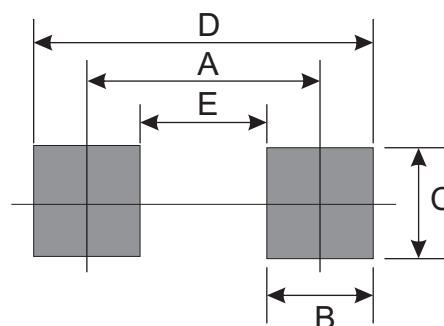
## Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| CDSQR4148S-HF | .S3          |



## Suggested PAD Layout

| SIZE | 0402/SOD-923F |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 0.750         | 0.030  |
| B    | 0.500         | 0.020  |
| C    | 0.700         | 0.028  |
| D    | 1.250         | 0.049  |
| E    | 0.250         | 0.010  |



## Standard Packaging

| Case Type     | Qty Per Reel | Reel Size |
|---------------|--------------|-----------|
|               | (Pcs)        | (inch)    |
| 0402/SOD-923F | 5,000        | 7         |