

SMD Schottky Barrier Diode



SMD Diodes Specialist

CDBK0540-HF(RoHS Device)

$I_o = 500 \text{ mA}$
 $V_R = 40 \text{ Volts}$

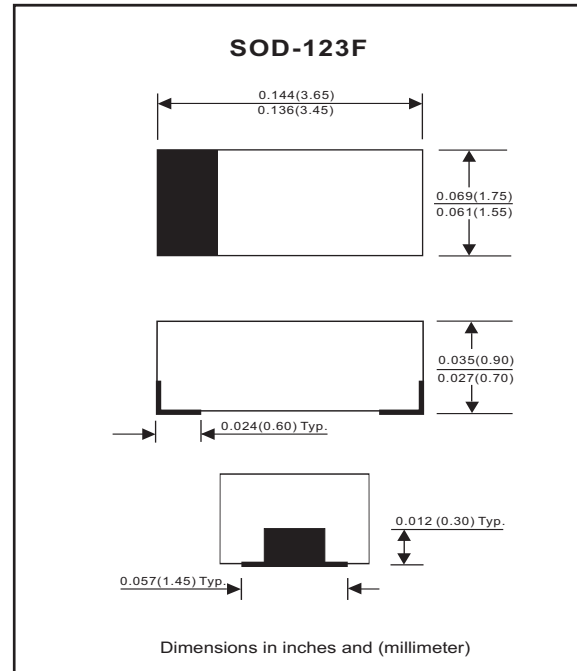


Features

- Halogen free.
- Low forward voltage.
- Designed for mounting on small surface.
- Extremely thin / leadless package.
- Majority carrier conduction.

Mechanical data

- Case: SOD-123F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Marking code: cathode band & BN
- Mounting position: Any
- Weight: 0.011 gram(approx.).



Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|-----------------------------------|---|-----------|-----|-----|------|------|
| Peak reverse voltage | | V_{RM} | | | 40 | V |
| Reverse voltage | | V_R | | | 40 | V |
| Average forward rectified current | | I_o | | | 500 | mA |
| Forward current,surge peak | 8.3 ms single half sine-wave superimposed on rate load (JEDEC method) | I_{FSM} | | | 5.5 | A |
| Storage temperature | | T_{STG} | -40 | | +125 | °C |
| Junction temperature | | T_j | | | +125 | °C |

Electrical Characteristics (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|-------------------------------|--|----------|-----|-----|------------------------------|------|
| Forward voltage | $I_F = 0.5 \text{ A}$ @ $T_a = 25 \text{ }^\circ\text{C}$ $I_F = 1 \text{ A}$ @ $T_a = 25 \text{ }^\circ\text{C}$ $I_F = 0.5 \text{ A}$ @ $T_a = 100 \text{ }^\circ\text{C}$ $I_F = 1 \text{ A}$ @ $T_a = 100 \text{ }^\circ\text{C}$ | V_F | | | 0.51 0.64 0.46 0.62 | V |
| Reverse current | $V_R = 20\text{V}$ @ $T_a = 25 \text{ }^\circ\text{C}$ $V_R = 40\text{V}$ @ $T_a = 25 \text{ }^\circ\text{C}$ $V_R = 20\text{V}$ @ $T_a = 100 \text{ }^\circ\text{C}$ $V_R = 40\text{V}$ @ $T_a = 100 \text{ }^\circ\text{C}$ | I_R | | | 0.01 0.02 2 5 | mA |
| Capacitance between terminals | f = 1 MHz, and 0 VDC reverse voltage | C_T | | | 170 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{mA}$, $I_{rr} \times I_R$, $R_L = 100\text{ohm}$ | T_{rr} | | 22 | | ns |

RATING AND CHARACTERISTIC CURVES (CDBK0540-HF)

Fig. 1 - Forward characteristics

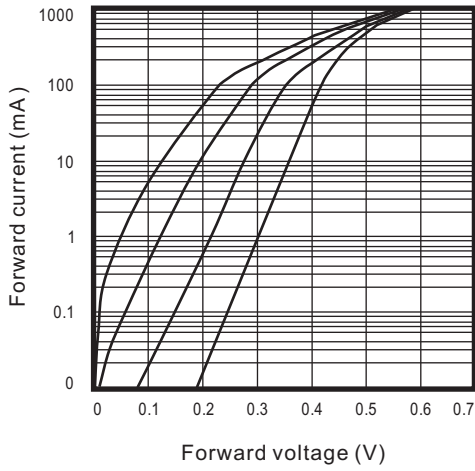


Fig. 2 - Reverse characteristics

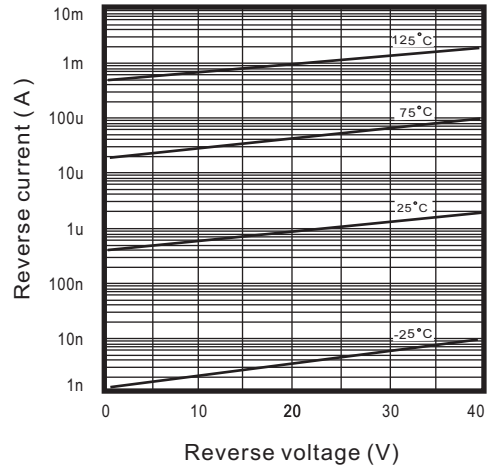


Fig. 3 - Capacitance between terminals characteristics

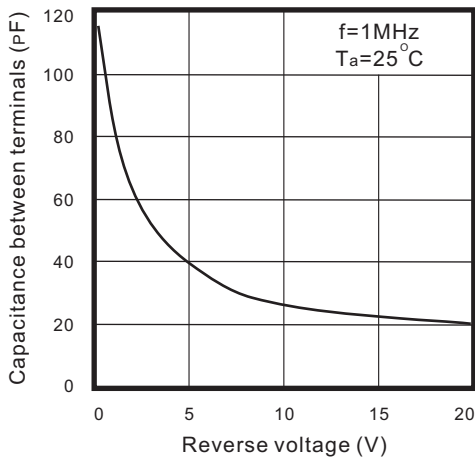
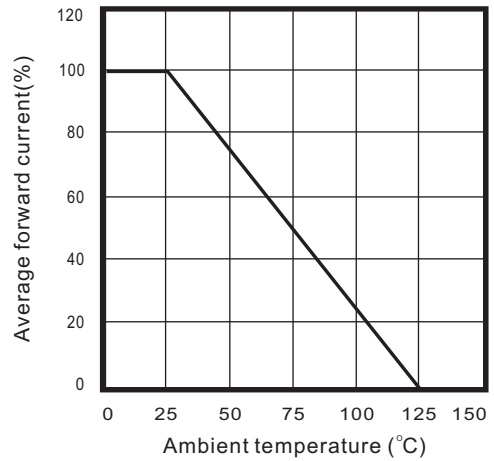
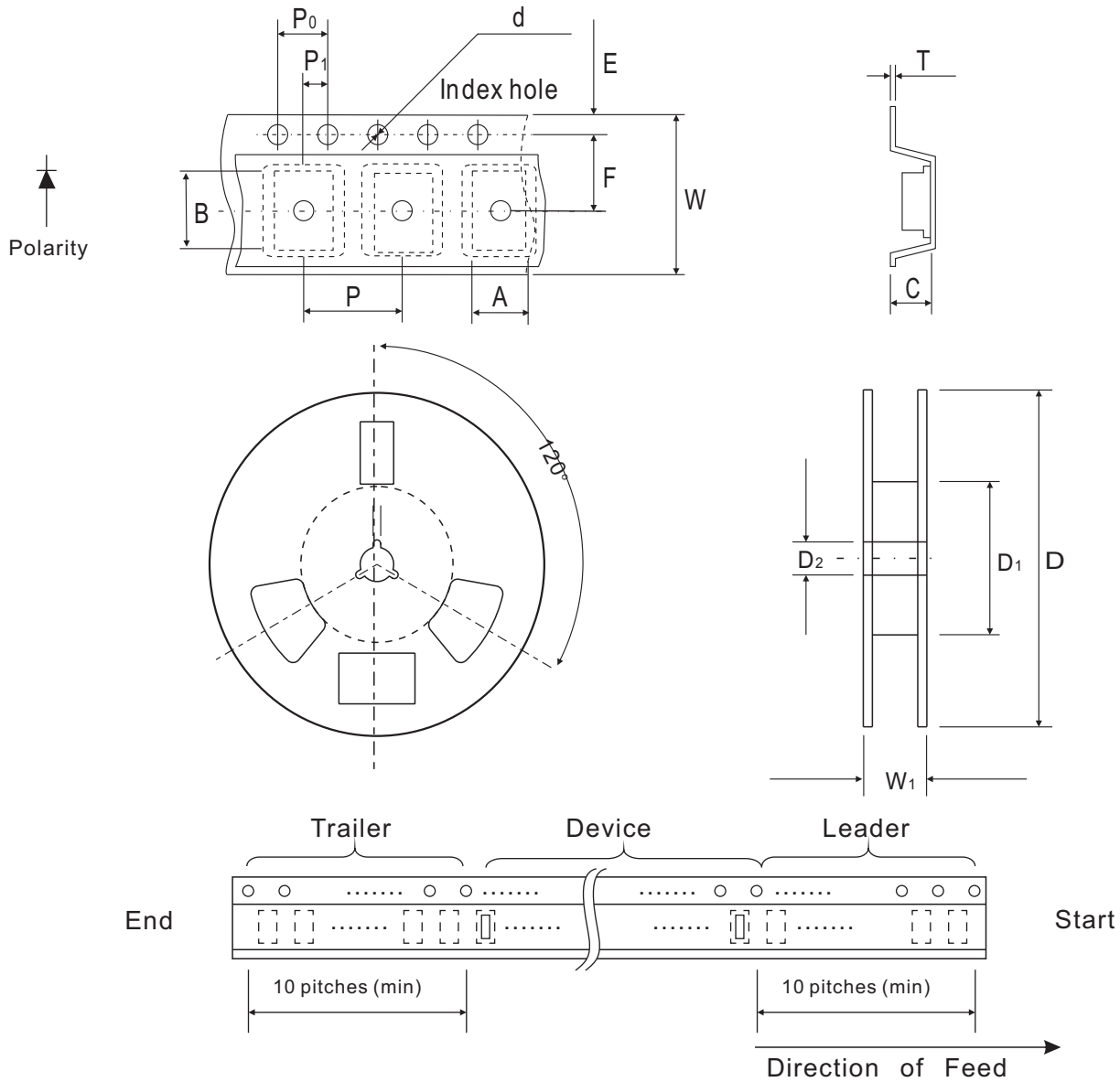


Fig. 4 - Current derating curve



Reel Taping Specification



| K SOD-123F | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|---------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| | (mm) | 1.90 ± 0.10 | 3.80 ± 0.10 | 1.05 ± 0.10 | 1.55 ± 0.10 | 178 ± 1 | 60.0 MIN. | 13.0 ± 0.20 |
| | (inch) | 0.075 ± 0.004 | 0.150 ± 0.004 | 0.041 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 2.362 MIN. | 0.512 ± 0.008 |

| K SOD-123F | SYMBOL | E | F | P | P ₀ | P ₁ | T | W | W ₁ |
|---------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 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

| | |
|-------------|--------------|
| Park Number | Marking Code |
| CDBK0540-HF | BN |



Suggested PAD Layout

| SIZE | K/SOD-123F | |
|------|------------|--------|
| | (mm) | (inch) |
| A | 3.45 | 0.136 |
| B | 1.30 | 0.051 |
| C | 1.60 | 0.063 |
| D | 4.75 | 0.187 |
| E | 2.15 | 0.085 |



Standard Package

| Case Type | Qty per Reel | Reel Size |
|------------|--------------|-----------|
| | (Pcs) | (inch) |
| K/SOD-123F | 4000 | 7 |