

# SMD Schottky Barrier Diode



SMD Diodes Specialist

## CDBK0520L-HF(RoHS Device)

$I_o = 500 \text{ mA}$

$V_R = 20 \text{ Volts}$

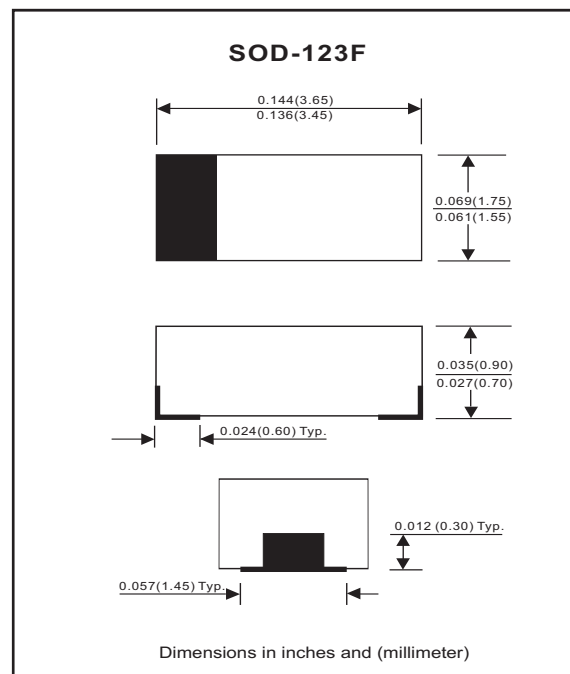


### Features

- 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 & BM
- Mounting position: Any
- Weight: 0.011 gram(approx.).



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

| Parameter                         | Conditions                                                            | Symbol    | Min | Typ | Max  | Unit               |
|-----------------------------------|-----------------------------------------------------------------------|-----------|-----|-----|------|--------------------|
| Peak reverse voltage              |                                                                       | $V_{RM}$  |     |     | 20   | V                  |
| Reverse voltage                   |                                                                       | $V_R$     |     |     | 20   | V                  |
| Average forward rectified current |                                                                       | $I_o$     |     |     | 0.5  | A                  |
| 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 | $^{\circ}\text{C}$ |
| Junction temperature              |                                                                       | $T_j$     |     |     | +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               | $I_F = 100\text{mA}$ @ $T_a = 25^{\circ}\text{C}$<br>$I_F = 500\text{mA}$ @ $T_a = 25^{\circ}\text{C}$<br>$I_F = 100\text{mA}$ @ $T_a = 100^{\circ}\text{C}$<br>$I_F = 500\text{mA}$ @ $T_a = 100^{\circ}\text{C}$ | $V_F$    |     |     | 300<br>385<br>220<br>330 | mV            |
| Reverse current               | $V_R = 10\text{V}$ @ $T_a = 25^{\circ}\text{C}$<br>$V_R = 20\text{V}$ @ $T_a = 25^{\circ}\text{C}$                                                                                                                 | $I_R$    |     |     | 75<br>250                | $\mu\text{A}$ |
| Capacitance between terminals | $f = 1 \text{ MHz}$ , 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            |

REV:B

RATING AND CHARACTERISTIC CURVES (CDBK0520L-HF)

Fig. 1 - Forward characteristics

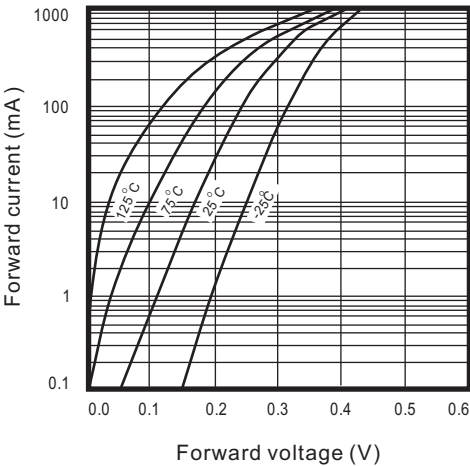


Fig. 2 - Reverse characteristics

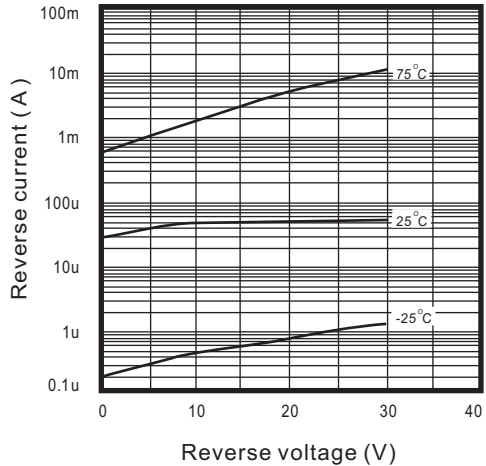


Fig. 3 - Capacitance between terminals characteristics

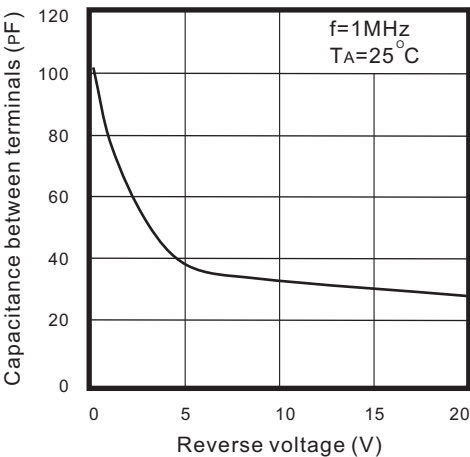
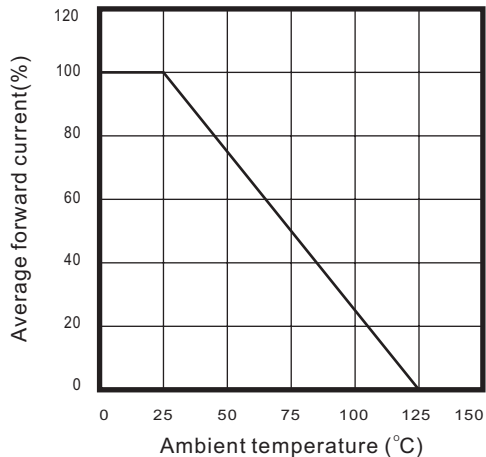
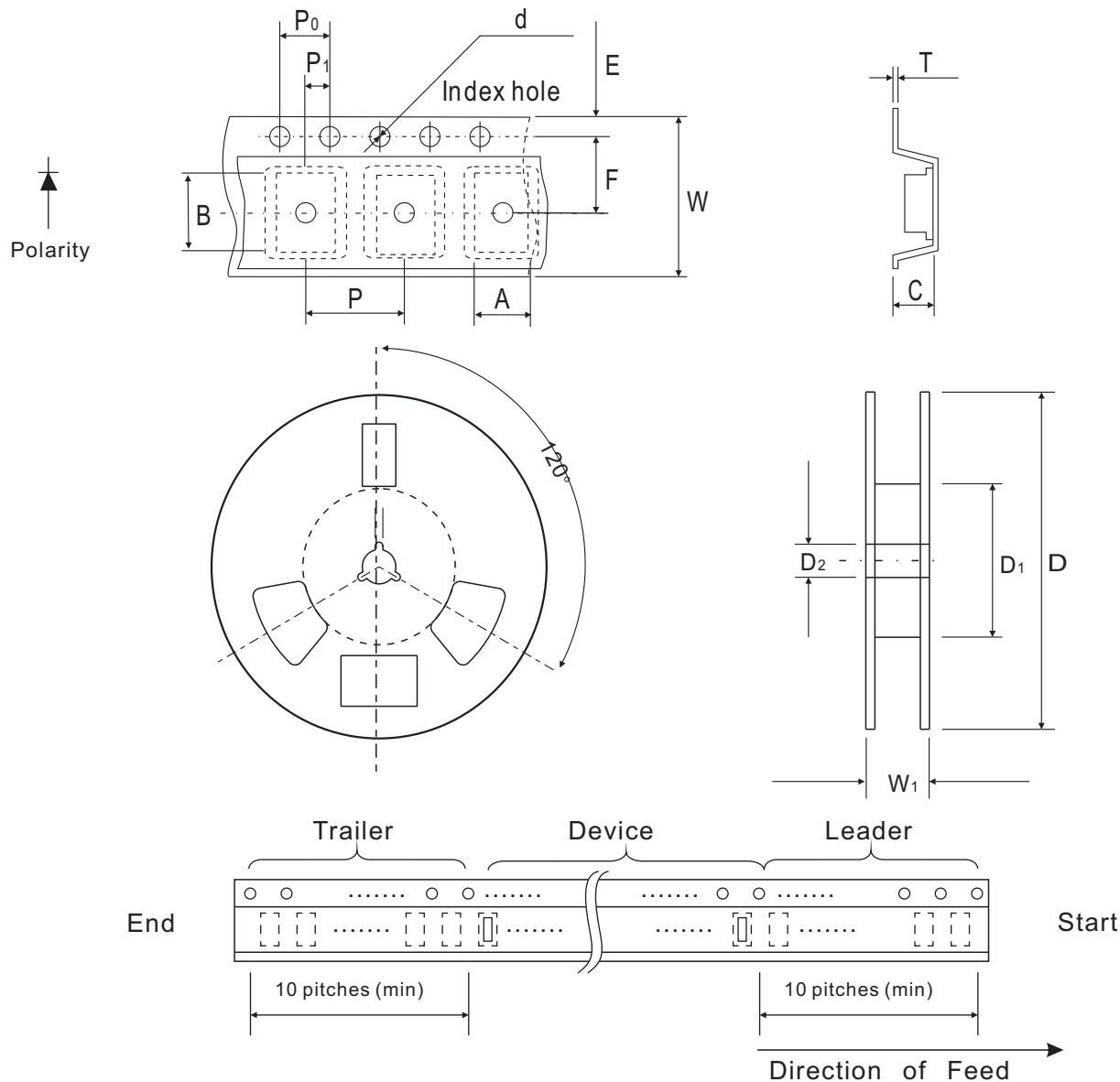


Fig.4 - Current derating curve



## Reel Taping Specification



|               |        |               |               |               |               |              |                |                |
|---------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| K<br>SOD-123F | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|               | (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<br>SOD-123F | 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 ± 0.05    | 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.     |

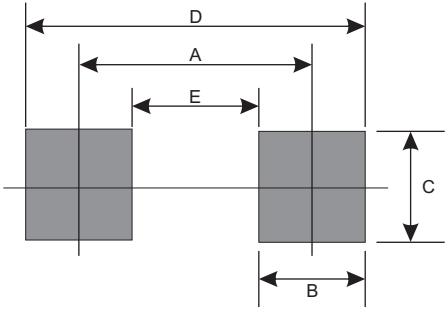
## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| CDBK0520L-HF | BM           |



## 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 | 3000         | 7         |