

# SMD Schottky Barrier Diode



SMD Diodes Specialist

## CDBF0540 (Lead-free Device)

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

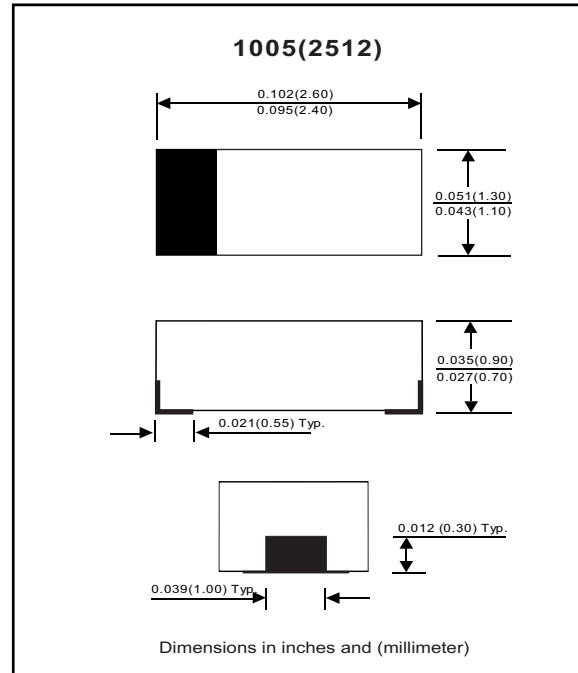
### Features

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



### Mechanical data

- Case: SOD-323F (2512) Standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.
- Weight: 0.006 gram (approximately).



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

| Parameter                         | Conditions  | Symbol    | Min | Typ | Max  | Unit             |
|-----------------------------------|---|-----------|-----|-----|------|------------------|
| Repetitive peak reverse voltage   |   | $V_{RRM}$ |     |     | 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 | $^\circ\text{C}$ |
| Junction temperature              |   | $T_j$     | -40 |     | +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               | $I_F = 0.5 \text{ A}$ @ $T_a = 25^\circ \text{C}$                                 | $V_F$    |     |     | 0.51 | V             |
|                               | $I_F = 1 \text{ A}$ @ $T_a = 25^\circ \text{C}$                                   | $V_F$    |     |     | 0.64 | V             |
|                               | $I_F = 0.5 \text{ A}$ @ $T_a = 100^\circ \text{C}$                                | $V_F$    |     |     | 0.46 | V             |
|                               | $I_F = 1 \text{ A}$ @ $T_a = 100^\circ \text{C}$                                  | $V_F$    |     |     | 0.62 | V             |
| Reverse current               | $V_R = 20 \text{ V}$ @ $T_a = 25^\circ \text{C}$                                  | $I_R$    |     |     | 10   | $\mu\text{A}$ |
|                               | $V_R = 40 \text{ V}$ @ $T_a = 25^\circ \text{C}$                                  | $I_R$    |     |     | 20   | $\mu\text{A}$ |
|                               | $V_R = 20 \text{ V}$ @ $T_a = 100^\circ \text{C}$                                 | $I_R$    |     |     | 2    | mA            |
|                               | $V_R = 40 \text{ V}$ @ $T_a = 100^\circ \text{C}$                                 | $I_R$    |     |     | 5    | mA            |
| Capacitance between terminals | $f = 1 \text{ MHz}$ , and 0 VDC reverse voltage                                   | $C_T$    |     |     | 170  | pF            |
| Reverse recovery time         | $I_F = I_R = 10 \text{ mA}$ , $I_{rr} = 0.1 \times I_R$ , $R_L = 100 \text{ ohm}$ | $T_{rr}$ |     | 22  |      | ns            |

## RATING AND CHARACTERISTIC CURVES (CDBF0540)

Fig. 1 - Forward characteristics

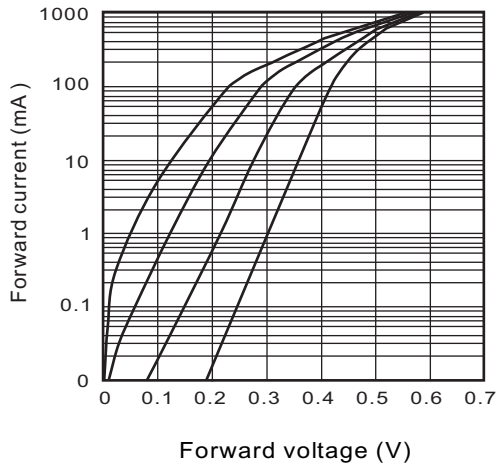


Fig. 2 - Reverse characteristics

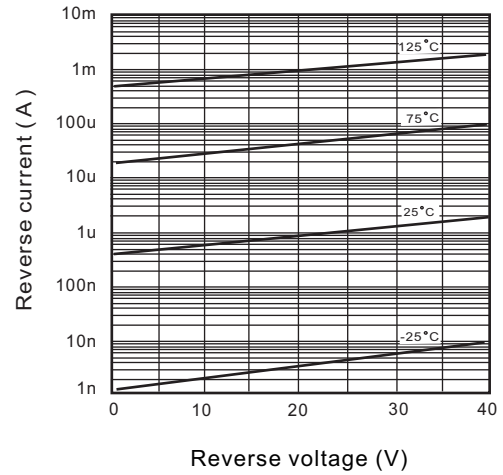


Fig. 3 - Capacitance between terminals characteristics

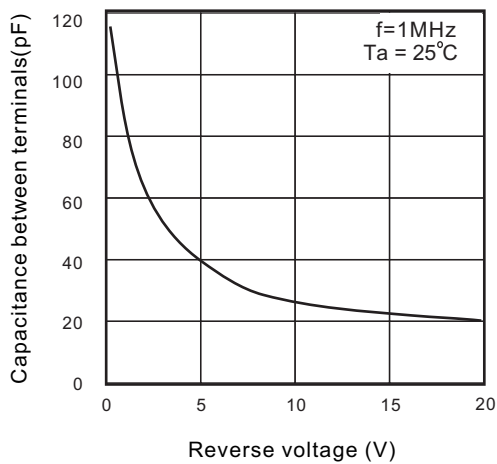


Fig. 4 - Current derating curve

