TAYCHIPST

**Small Surface Mount Ultrafast Diodes**

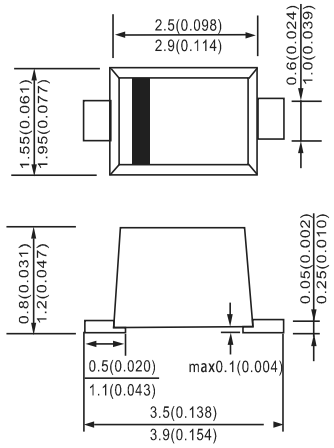
# ES07B THRU ES07D

**100V-200V 0.5A**

## FEATURES

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- High temperature soldering: 260 °C/ 10 seconds at terminals
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

SOD-123FL




Dimensions in millimeters

## MECHANICAL DATA

**Case:** JEDEC DO-219AB (SMF®) Plastic case

**Polarity:** Band denotes cathode end

**Weight:** approx. 15 mg

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

### Absolute Maximum Ratings

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Part | Symbol | Value | Unit |
|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | ES07B | $V_{RRM}$ | 100 | V |
| | | ES07D | $V_{RRM}$ | 200 | V |
| Maximum RMS voltage | | ES07B | $V_{RMS}$ | 70 | V |
| | | ES07D | $V_{RMS}$ | 140 | V |
| Maximum DC blocking voltage | | ES07B | $V_{DC}$ | 100 | V |
| | | ES07D | $V_{DC}$ | 200 | V |
| Maximum average forward rectified current | $T_{tp}$ = 105 °C | | $I_{F(AV)}$ | 1.2 | A |
| | $T_A$ = 65 °C[1)] | | $I_{F(AV)}$ | 0.5 | A |
| Peak forward surge current 8.3 ms single half sine-wave | $T_L$ = 25 °C | | $I_{FSM}$ | 30 | A |

1) Mounted on epoxy glass PCB with 3 x 3 mm, Cu pads (≥ 40 µm thick)

### Electrical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage | 1.0 A[3)] | $V_F$ | | | 0.98 | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A$ = 25°C | $I_R$ | | | 10 | µA |
| | $T_A$ = 100°C | $I_R$ | | | 50 | µA |
| Reverse recovery time | $I_F$ = 0.5 A, $I_R$ = 1 A, $I_{rr}$ = 0.25 A | $t_{rr}$ | | | 25 | ns |
| Typical capacitance | 4 V, 1 MHz | $C_j$ | | 4 | | pF |

2) Pulse test, 300 µs pulse with 1 % duty cycle

## RATINGS AND CHARACTERISTIC CURVES ES07B THRU ES07D

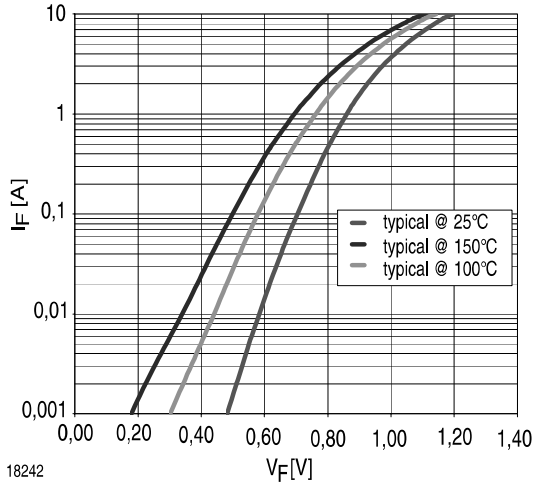



Figure 1. Typical Forward Characteristics

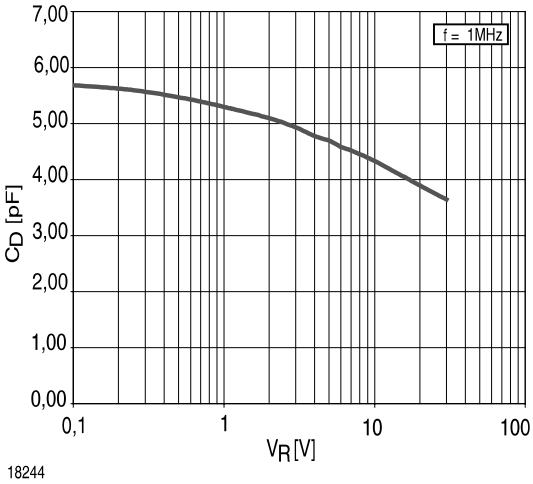



Figure 3. Typ. Diode Capacitance vs. Reverse Voltage

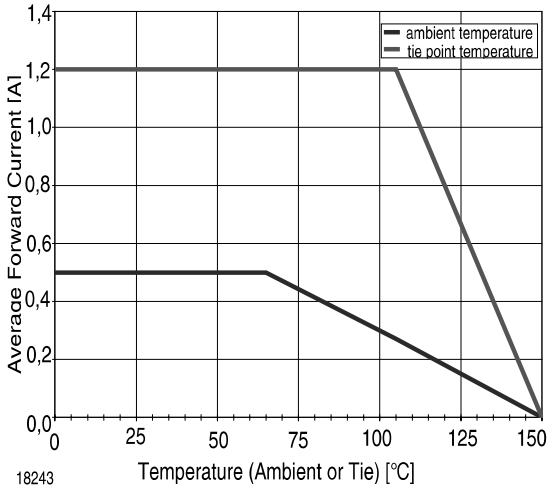



Figure 2. Forward Current Derating Curve

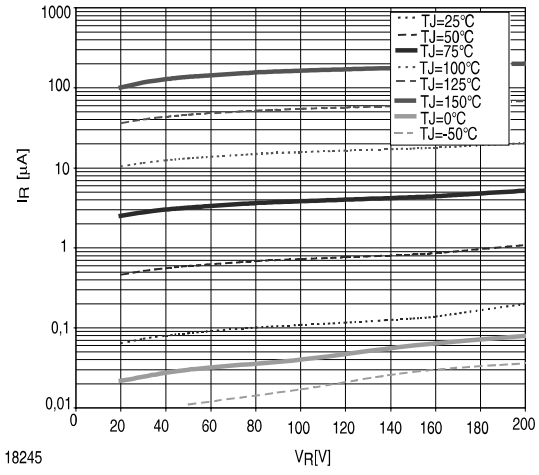



Figure 4. Typical Reverse Characteristics