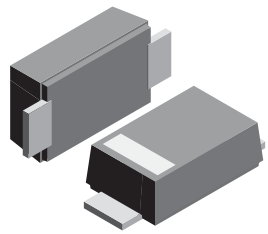
# SM4001FL - SM4007FL

## SURFACE MOUNT RECTIFIER DIODES

**VOLTAGE RANGE: 50 - 1000V**
**CURRENT: 1.0 A**



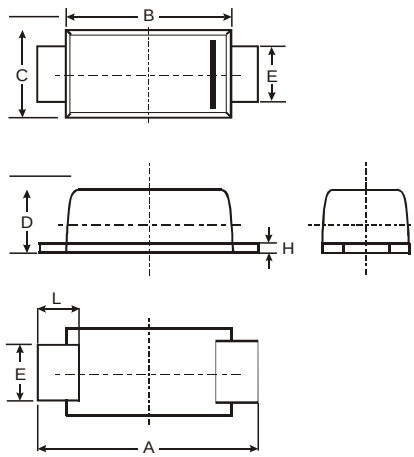
## Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop
- Low Power Loss
- Built-in Strain Relief
- Plastic Case Material has UL Flammability Classification Rating 94V-O

## Mechanical Data

- Case: JEDEC SOD-123FL molded plastic body over passivated chip
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0007 ounce, 0.02 grams

RoHS COMPLIANT




| SOD-123FL | | | |
|---|---|---|---|
| **Dim** | **Min** | **Max** | **Typ** |
| **A** | 3.50 | 3.80 | 3.65 |
| **B** | 2.60 | 2.90 | 2.75 |
| **C** | 1.70 | 1.90 | 1.80 |
| **D** | 0.09 | 1.10 | 1.00 |
| **E** | 0.08 | 1.10 | 0.095 |
| **H** | 0.12 | 0.20 | 0.16 |
| **L** | 0.07 | 0.09 | 0.08 |
| **All Dimensions in mm** | | | |

## Maximum Ratings and Electrical Characteristics $T_A$ = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic | Symbol | SM4001FL | SM4002FL | SM4003FL | SM4004FL | SM4005FL | SM4006FL | SM4007FL | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current @$T_L$ = 100°C | $I_O$ | 1.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 30 | | | | | | | A |
| Forward Voltage @$I_F$ = 1.0A | $V_{FM}$ | 1.10 | | | | | | | V |
| Peak Reverse Current @$T_A$ = 25°C<br>At Rated DC Blocking Voltage @$T_A$ = 125°C | $I_{RM}$ | 5.0<br>200 | | | | | | | μA |
| Reverse Recovery Time (Note 1) | $t_{rr}$ | 2.5 | | | | | | | μS |
| Typical Junction Capacitance (Note 2) | $C_j$ | 15 | | | | | | | pF |
| Typical Thermal Resistance (Note 3) | $R_{\theta JL}$ | 30 | | | | | | | K/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -65 to +175 | | | | | | | °C |

Note: 1. Measured with $I_F$ = 0.5A, $I_R$ = 1.0A, $I_{rr}$ = 0.25A,
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
3. Mounted on P.C. Board with 8.0mm² land area.

FIG. 1 - FORWARD CURRENT DERATING CURVE

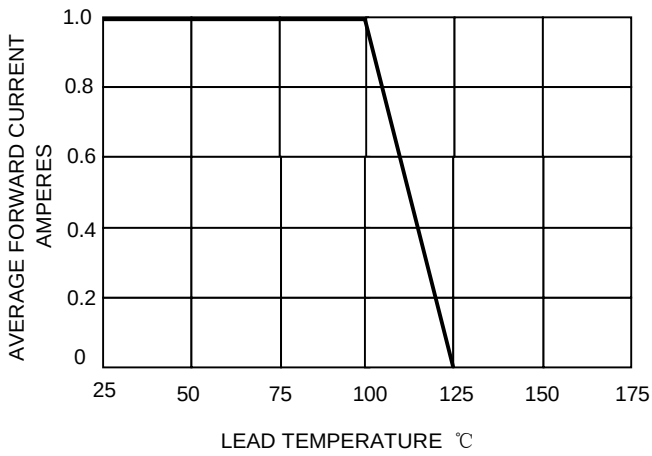



FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

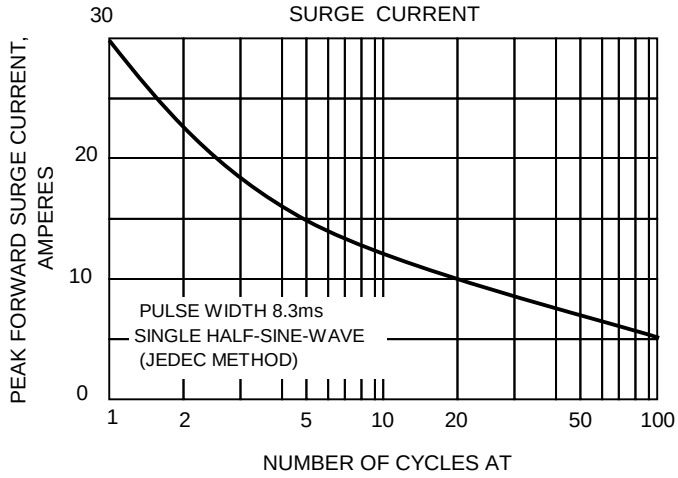



FIG.3-TYPICAL FORWARD CHARACTERISTICS

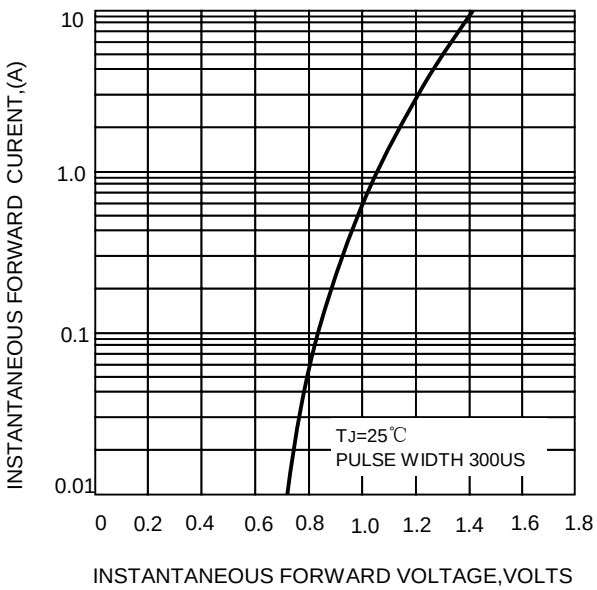



FIG.4-TYPICAL REVERSE CHARACTERISTICS