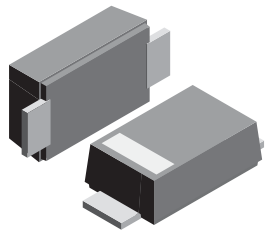
# DFR1A- DFR1M

## SUFACE MOUNT FAST RECOVERY RECTIFIER DIODES

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



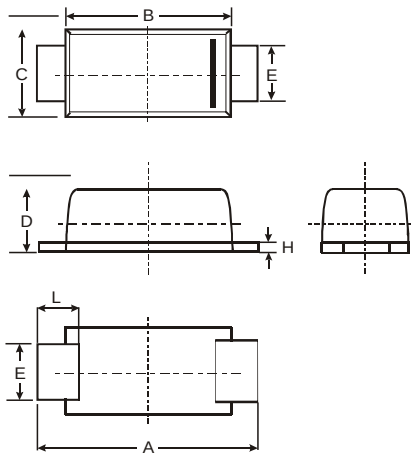
## Features

- Glass passivated device
- Ideal for surface mouted applications
- Low reverse leakage
- Metallurgically bonded construction
- High temperature soldering guaranteed:
- 250℃/10 seconds,0.375”(9.5mm) lead length, 5 lbs. (2.3kg) tension

## Mechanical Data

- Case: SOD-123FL plastic body over passivated junction
- 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 | DFR1A | DFR1B | DFR1D | DFR1G | DFR1J | DFR1K | DFR1M | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current at $T_A$=65℃ (NOTE 1) | $I_{(AV)}$ | 1.0 | | | | | | | Amp |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) $T_L$=25℃ | $I_{FSM}$ | 30.0 | | | | | | | Amps |
| Maximum instantaneous forward voltage at 1.0A | $V_F$ | 1.3 | | | | | | | Volts |
| Maximum DC reverse current $T_A$=25℃ at rated DC blocking voltage $T_A$=100℃ | $I_R$ | 5.0<br>100.0 | | | | | | | μA |
| Maximum reverse recovery time (NOTE 2) | trr | 150 | | | | 250 | 500 | | ns |
| Typical junction capacitance (NOTE 3) | $C_J$ | 15 | | | | | | | pF |
| Typical thermal resistance (NOTE 4) | $R_{\theta JA}$ | 180 | | | | | | | K/W |
| Operating junction and storage temperature range | $T_J$,$T_{STG}$ | -50 to +150 | | | | | | | ℃ |

**Note:** 1.Averaged over any 20ms period.
2.Measured with IF=0.5A, IR=1A, Irr=0.25A.
3.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
4.Thermal resistance junction to ambient, 6.0 mm2 coppeer pads to each terminal.

# RATINGS AND CHARACTERISTIC CURVES DFR1A THRU DFR1M

FIG. 1- FORWARD CURRENT DERATING CURVE

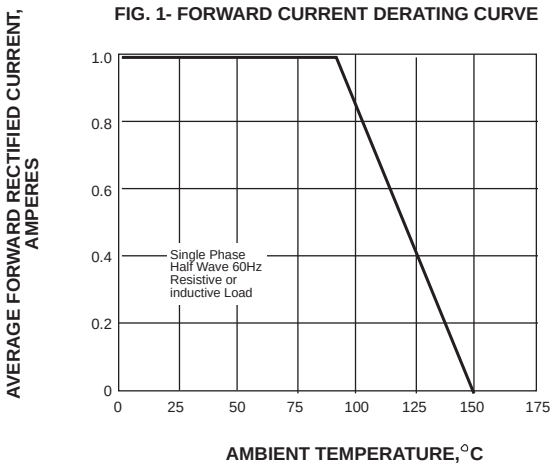



FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

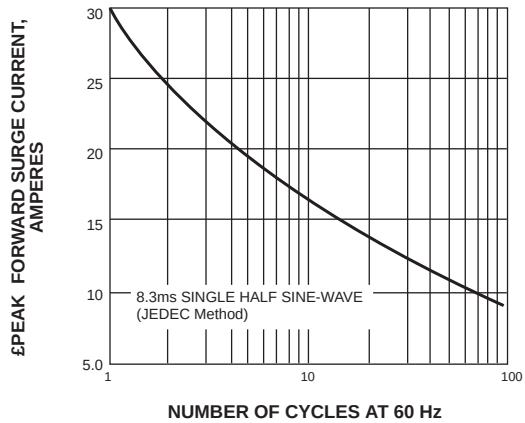



FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

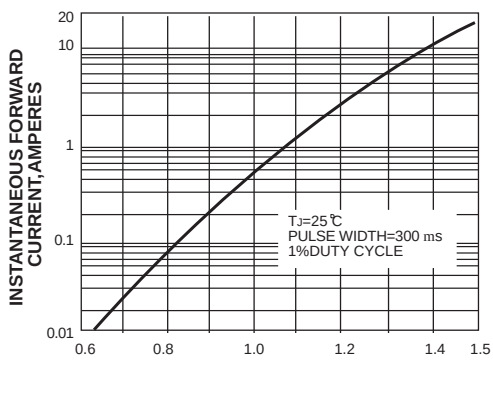



FIG. 4-TYPICAL REVERSE CHARACTERISTICS

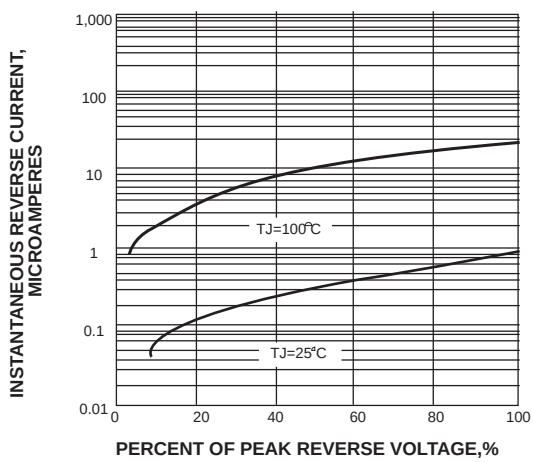



FIG. 5-TYPICAL JUNCTION CAPACITANCE

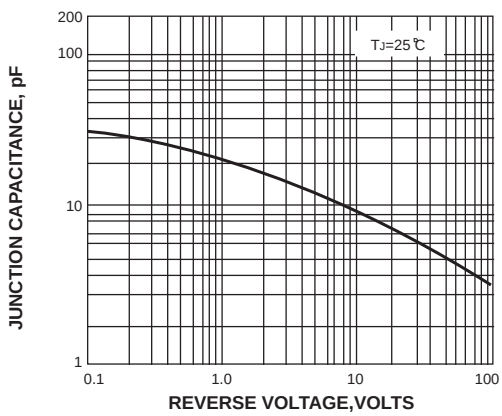



FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

