



DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

FR3A
THRU
FR3K

TECHNICAL SPECIFICATIONS OF SURFACE MOUNT FAST RECOVERY RECTIFIER

VOLTAGE RANGE - 50 to 800 Volts

CURRENT - 3.0 Amperes

FEATURES

- * Ideal for surface mounted applications
- * Low leakage current
- * Glass passivated junction

MECHANICAL DATA

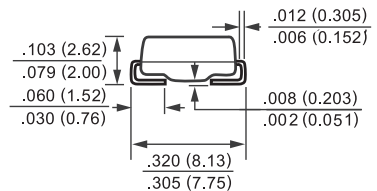
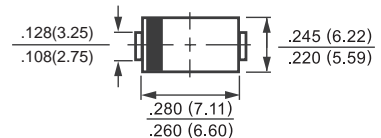
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- * Polarity: As marked
- * Mounting position: Any
- * Weight: 0.24 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.



SMC (DO-214AB)



Dimensions in inches and (millimeters)

| | SYMBOL | FR3A | FR3B | FR3D | FR3G | FR3J | FR3K | UNITS |
|---|----------|--------------|------|------|------|------|------|-------|
| Maximum Recurrent Peak Reverse Voltage | VRRM | 50 | 100 | 150 | 200 | 300 | 400 | Volts |
| Maximum RMS Voltage | VRMS | 35 | 70 | 105 | 140 | 210 | 280 | Volts |
| Maximum DC Blocking Voltage | Vdc | 50 | 100 | 150 | 200 | 300 | 400 | Volts |
| Maximum Average Forward Rectified Current TA = 75°C | Io | 3.0 | | | | | | Amps |
| Peak Forward Surge Current IFM(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | IFSM | 100 | | | | | | Amps |
| Maximum Forward Voltage at 3.0A DC | VF | 1.2 | | | | | | Volts |
| Maximum DC Average Reverse Current at Rated DC Blocking Voltage | IR | @ TA = 25°C | | | | | | uAmps |
| | | @ TA = 125°C | | | | | | |
| Maximum Reverse Recovery Time (Note 3) | trr | 150 | | 250 | | 500 | | nSec |
| Typical Thermal Resistance (Note 2) | RθJL | 10 | | | | | | °C/W |
| Typical Junction Capacitance (Note 1) | Cj | 60 | | | | | | pF |
| Operating and Storage Temperature Range | Tj, TSTG | -65 to + 175 | | | | | | °C |

- NOTES : 1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC
 2. Thermal Resistance (Junction to Ambient), 0.4x0.4in² (10.0X10.0mm²) copper pads to each terminal.
 3. Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.

RATING AND CHARACTERISTIC CURVES (FR3A THRU FR3K)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

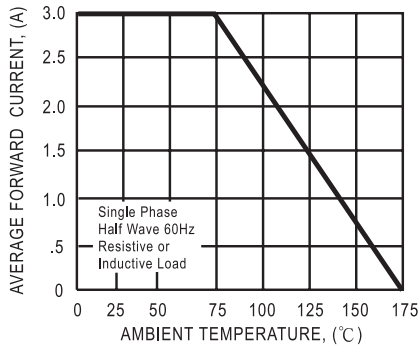


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

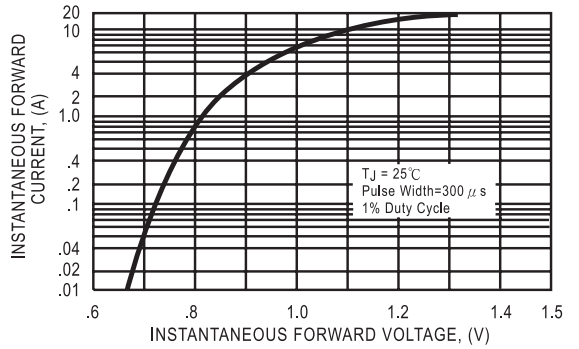


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

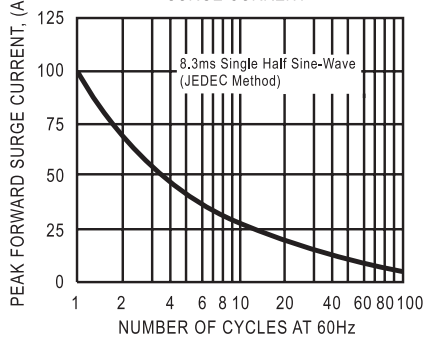


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

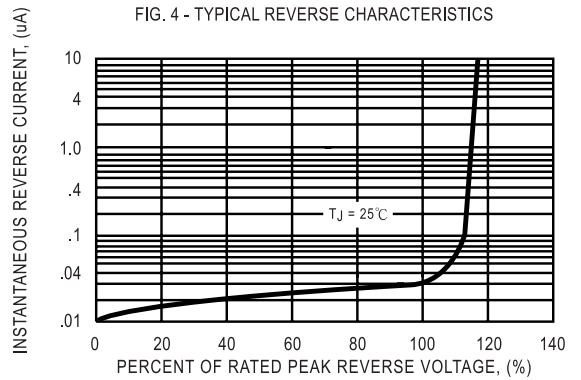
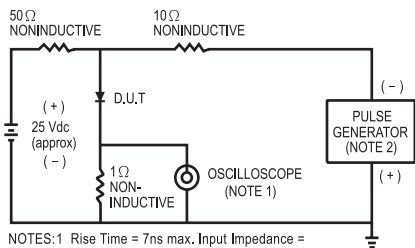


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm, 22 pF.
2. Rise Time = 10ns max. Source Impedance = 50 ohms.

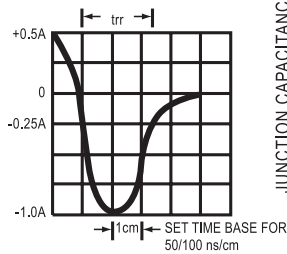
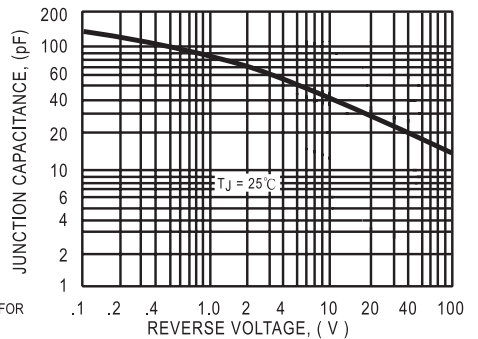


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



DC COMPONENTS CO., LTD.