



**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**

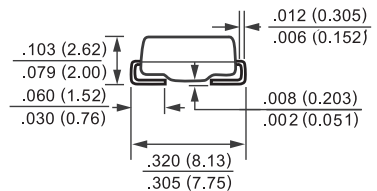
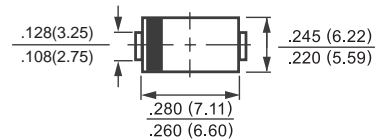
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 0.24 gram

**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	10					uAmps
		@ TA = 125°C	300					
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), 0.4x0.4in<sup>2</sup> (10.0X10.0mm<sup>2</sup>) 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

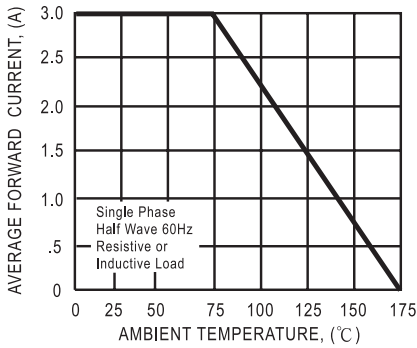


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

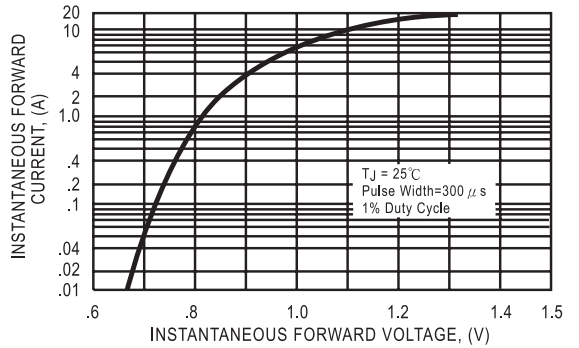


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

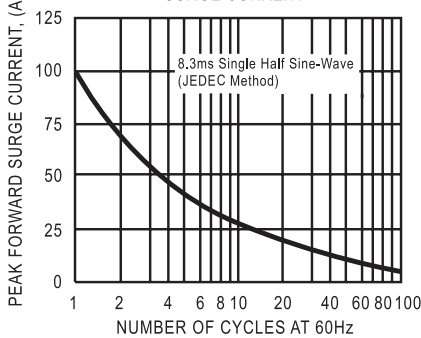


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

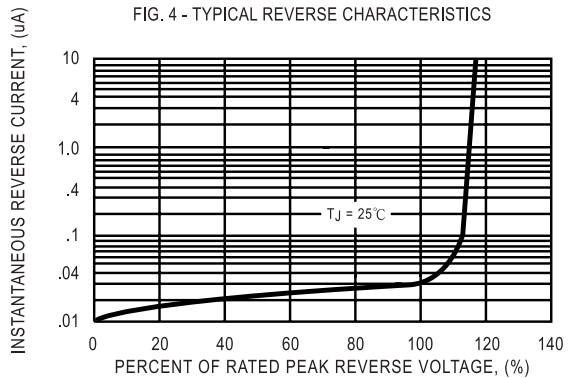
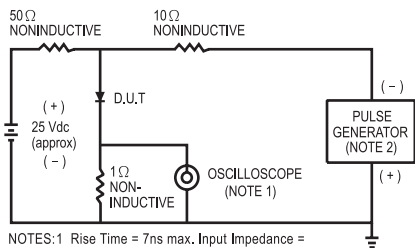


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

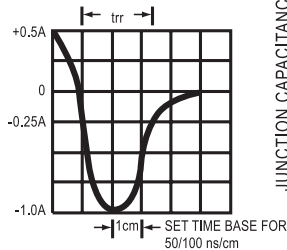
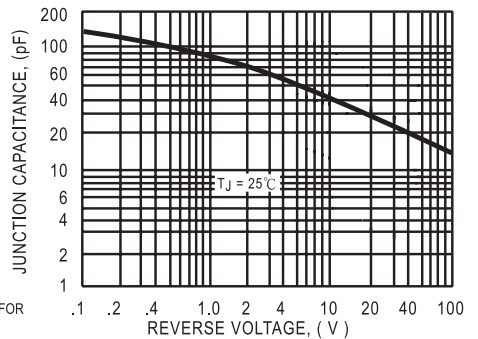


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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