



# DATA SHEET

## FR3A~FR3K

### FAST SWITCHING SURFACE MOUNT RECTIFIER

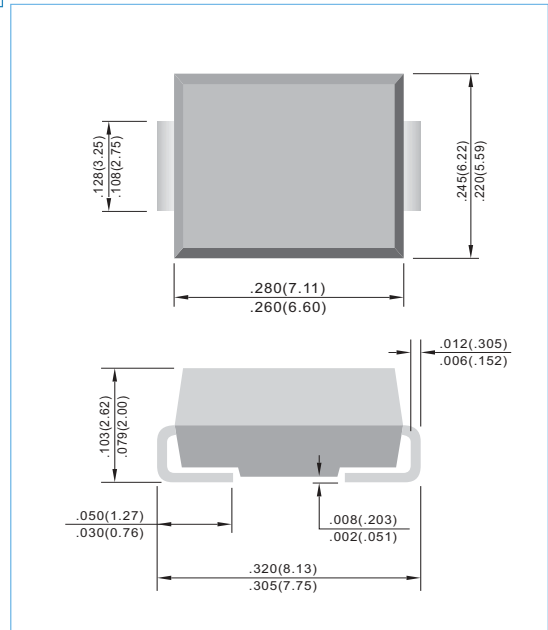
**VOLTAGE** 50 to 800 Volts    **CURRENT** 3.0 Ampere    **SMC/DO-214AB**    Unit: inch (mm)

#### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast Recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- High temperature soldering : 260°C /10 seconds at terminals
- Both normal and Pb free product are available :  
Normal : 80~95% Sn, 5~20% Pb  
Pb free: 98.5% Sn above

#### MECHANICAL DATA

Case: JEDEC DO-214AB molded plastic  
 Terminals: Solder plated, solderable per MIL-STD-750, Method 2026  
 Polarity: Indicated by cathode band  
 Standard packaging: 16mm tape (EIA-481)  
 Weight: 0.007 ounce, 0.21 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

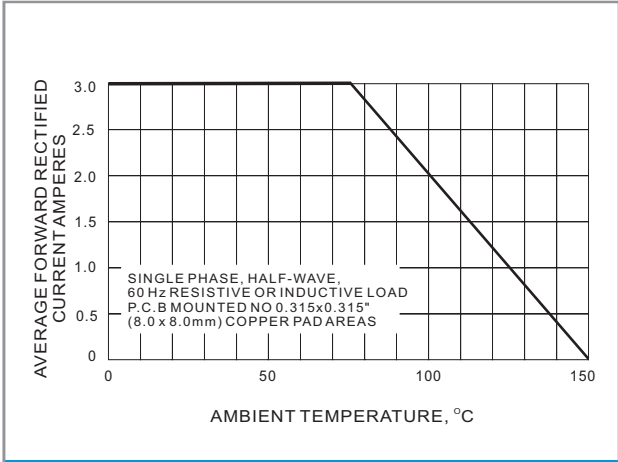
Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	FR3A	FR3B	FR3D	FR3G	FR3J	FR3K	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	V
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	V
Maximum Average Rectified Current at T <sub>L</sub> =75 °C	I <sub>o</sub>	3.0						A
Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load(JEDEC method)	I <sub>FSM</sub>	100						A
Maximum Forward Voltage at 3.0A	V <sub>F</sub>	1.3						V
Maximum DC Reverse Current T <sub>A</sub> =25°C at Rated DC Blocking Voltage T <sub>A</sub> =125°C	I <sub>R</sub>	10 300						uA
Maximum Reverse Recovery Time (Note 1)	T <sub>RR</sub>	150				250	500	ns
Maximum Junction capacitance (Note 2)	C <sub>J</sub>	60						pF
Typical Junction Resistance(Note 3)	R <sub>θJL</sub>	15						°C / W
Operating Junction and Storage Temperature Rating	T <sub>J</sub> ,T <sub>STG</sub>	-50 TO +150						°C

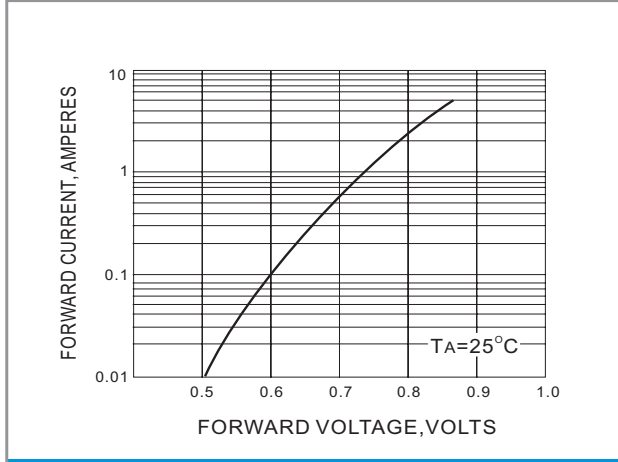
NOTES:1. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A  
 2. Measured at 1 MHz and applied V<sub>r</sub> = 4.0 volts.  
 3. 8.0 mm<sup>2</sup> ( .013mm thick ) land areas.



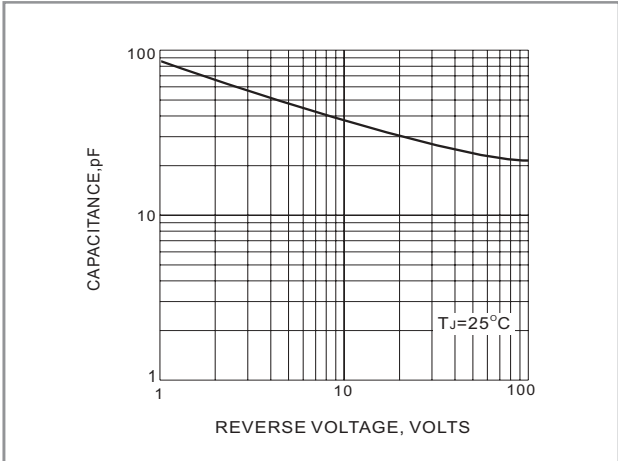
**RATING AND CHARACTERISTIC CURVES**



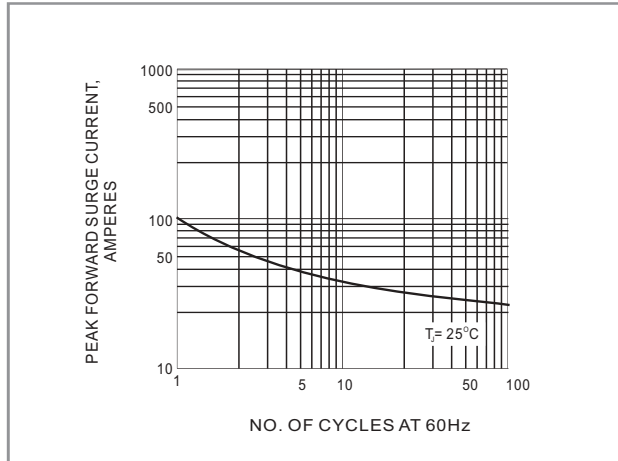
**FIG. 1 FORWARD CURRENT DERATING CURVE**



**FIG. 2 TYPICAL FORWARD CHARACTERISTIC**



**FIG. 3 TYPICAL JUNCTION CAPACITANCE**



**FIG. 4 PEAK FORWARD SURGE CURRENT**