

# FR1A THRU FR1K

## SURFACE MOUNT FAST SWITCHING RECTIFIER VOLTAGE - 50 to 800 Volts CURRENT - 1.0 Ampere

### 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

### MECHANICAL DATA

Case: JEDEC DO-214AA molded plastic

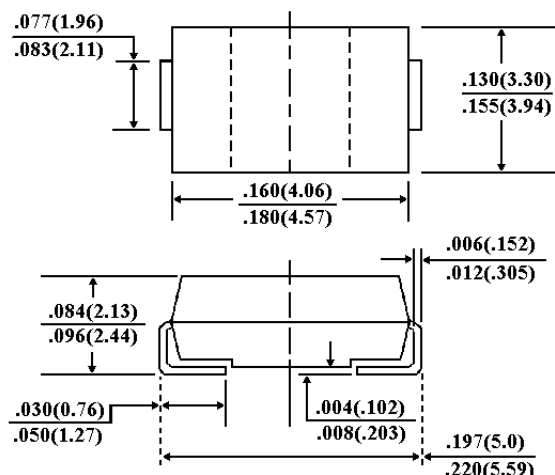
Terminals: Solder plated, solderable per MIL-STD-750,  
Method 2026

Polarity: Indicated by cathode band

Standard packaging: 12mm tape (EIA-481)

Weight: 0.003 ounce, 0.093 gram

### SMB/DO-214AA



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

Resistive or inductive load.

For capacitive load, derate current by 20%.

	SYMBOLS	FR1A	FR1B	FR1D	FR1G	FR1J	FR1K	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	Volts
Maximum Average Forward Rectified Current, at $T_L=90$ °C	$I_{(AV)}$	1.0						Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load(JEDEC method)	$I_{FSM}$	30.0						Amps
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	1.3						Volts
Maximum DC Reverse Current $T_A=25$ °C	$I_R$	5.0						Eg A
At Rated DC Blocking Voltage $T_A=125$ °C		150						
Maximum Reverse Recovery Time (Note 1) $T_J=25$ °C	$T_{RR}$	150				250	500	nS
Typical Junction capacitance (Note 2)	$C_J$	12						pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JKJL}$	30						°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-50 to +150						°C

### NOTES:

1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{rr}=0.25A$
2. Measured at 1 MHz and Applied reverse voltage of 4.0 volts
3.  $8.0mm^2$  (.013mm thick) land areas

# RATING AND CHARACTERISTIC CURVES

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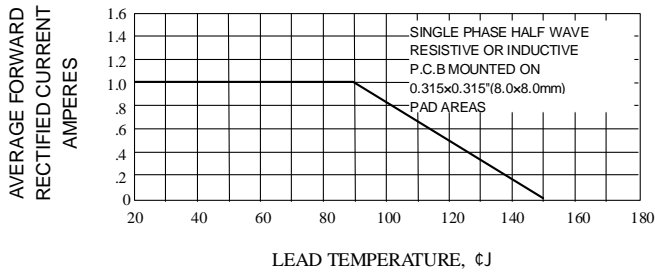


Fig. 1-FORWARD CURRENT DERATING CURVE

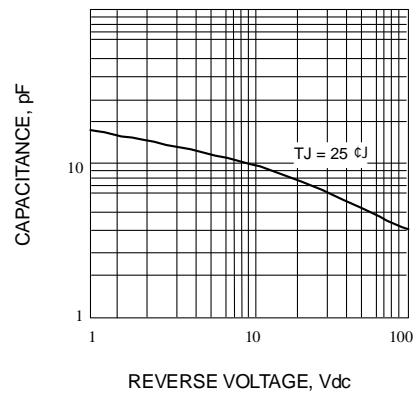


Fig. 2-TYPICAL JUNCTION CAPACITANCE

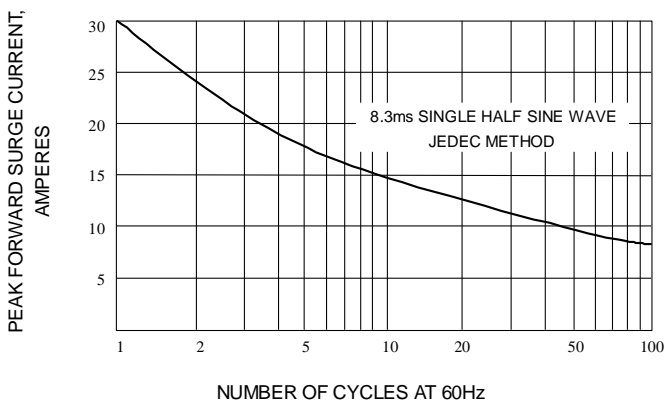


Fig. 3-PEAK FORWARD SURGE CURRENT

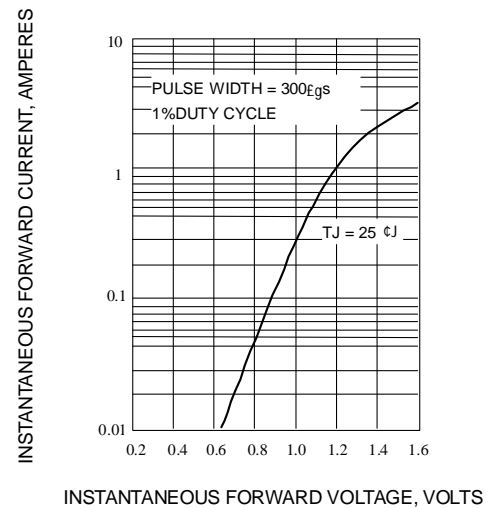
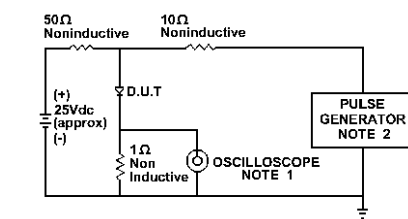


Fig. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



NOTE:1. Rise Time = 7ns max.  
 Input Impedance = 1 megohm. 22pF  
 2. Rise Time = 10ns max.  
 Source Impedance = 50 Ohms

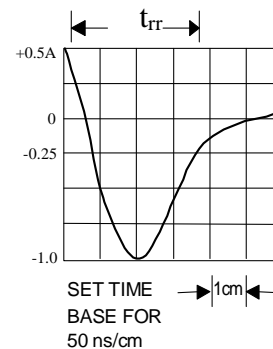


Fig. 5-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM