Fast Recovery Diodes

FR3AB~FR3MB DO-214AA(SMB)

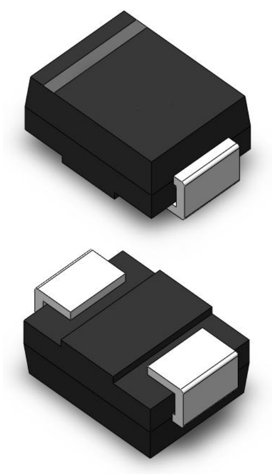
Features

- Glass Passivated Die Construction.
- Fast Recovery Time for High Efficiency.
- Low Forward Voltage Drop and High Current Capability.
- Surge Overload Rating to 100A Peak.
- Ideally Suited for Automatic Assembly.
- Plastic Material: UL Flammability Classification Rating 94V-0.

Mechanical Date

- Case: Molded Plastic.
- Terminals: Solder Plated Terminal Solderable per MIL-STD-202, Method 208.
- Polarity: Cathode Band or Cathode Notch.
- SMB Weight: 0.09 grams (approx.).

DO-214AA(SMB)



Maximum Ratings and Electrical Characteristics (@ T_A = 25℃ unless otherwise specified)

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	FR3AB	FR3BB	FR3DB	FR3GB	FR3JB	FR3KB	FR3MB	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
DC Blocking Voltage	V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ T_T=75℃	I_O	3.0							A
Non-Repetitive Peak Forward Surge Current: 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	100							A
Forward Voltage @ I_F =3.0A	V_{FM}	1.3							V
Peak Reverse Current at Rated DC Blocking Voltage **T_A=25℃**	I_{RM}	5							μA
T_A=125℃		250							
Maximum Recovery Time (Note 3)	t_{rr}	150				250	500		ns
Typical Junction Capacitance (Note 2)	C_J	50							pF
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	15							℃/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150							℃

Notes:

1. Thermal resistance: junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pad as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, Irr = 0.25A. See figure 5.

Rating and Characteristic Curves

Fig1. Forward Current Derating Curve

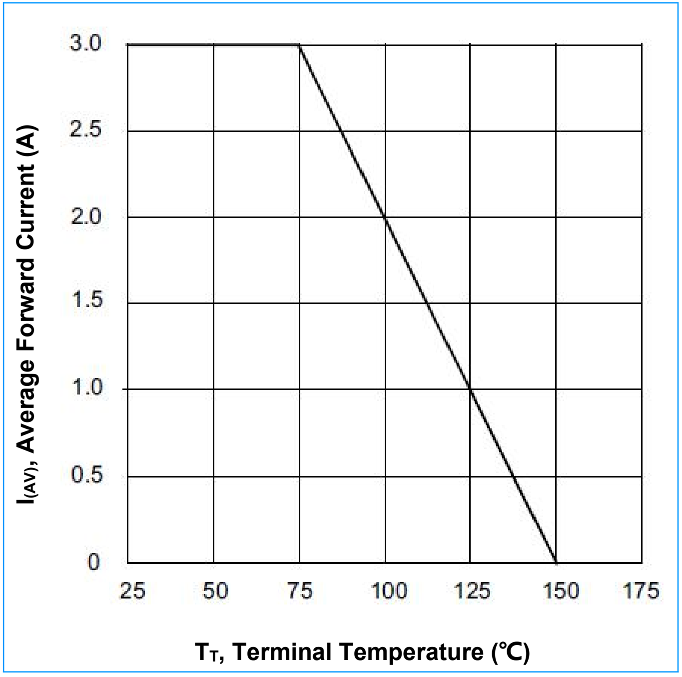


Fig2. Typical Forward Characteristics

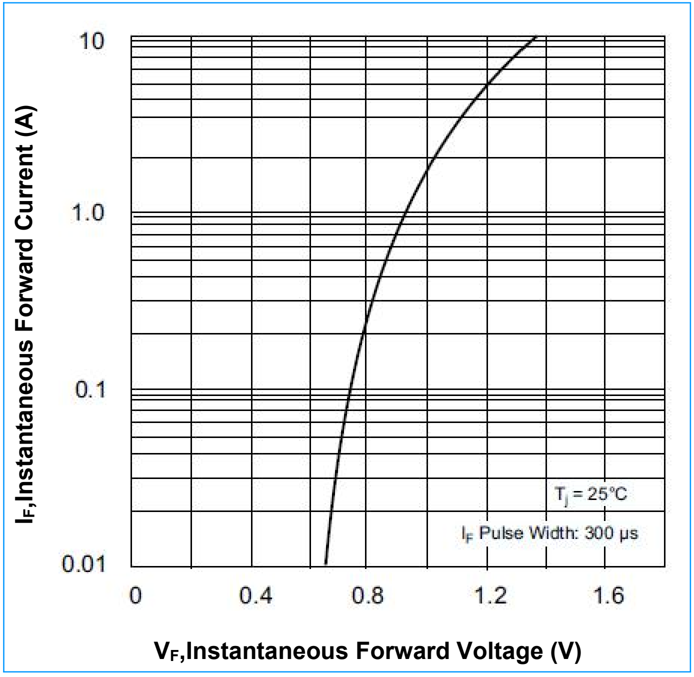


Fig3. Forward Surge Current Derating Curve

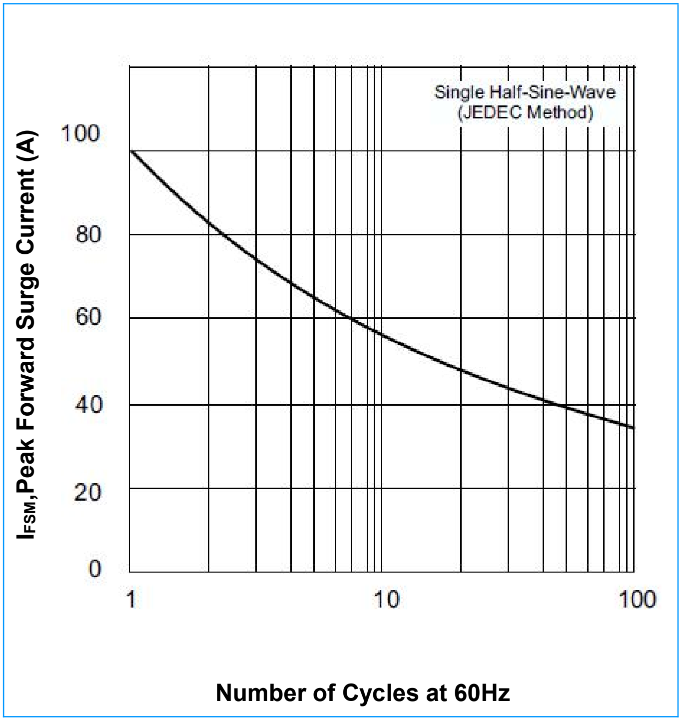
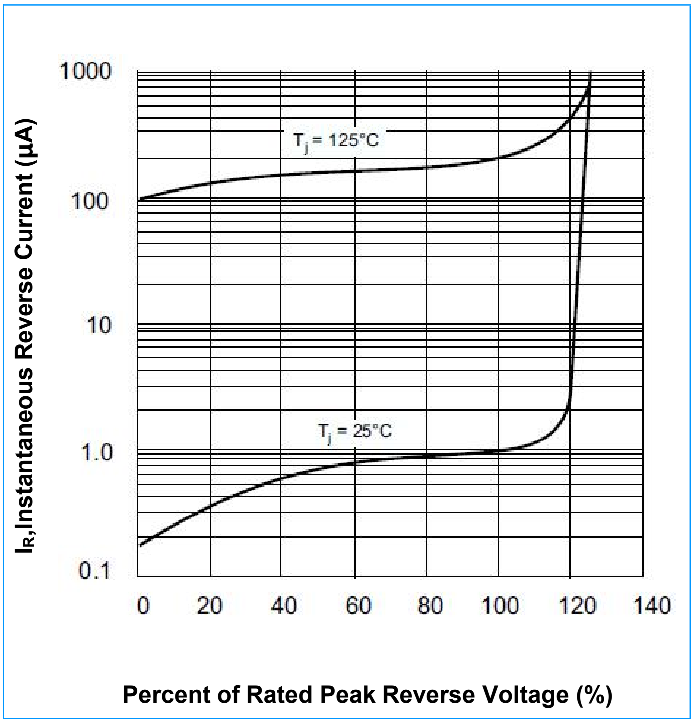


Fig4. Typical Reverse Characteristics

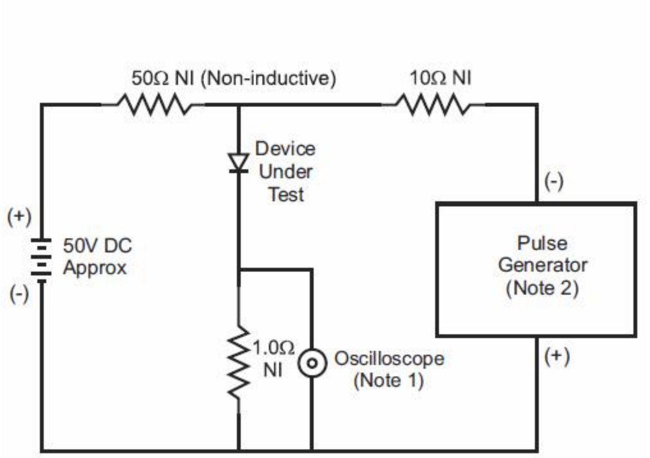


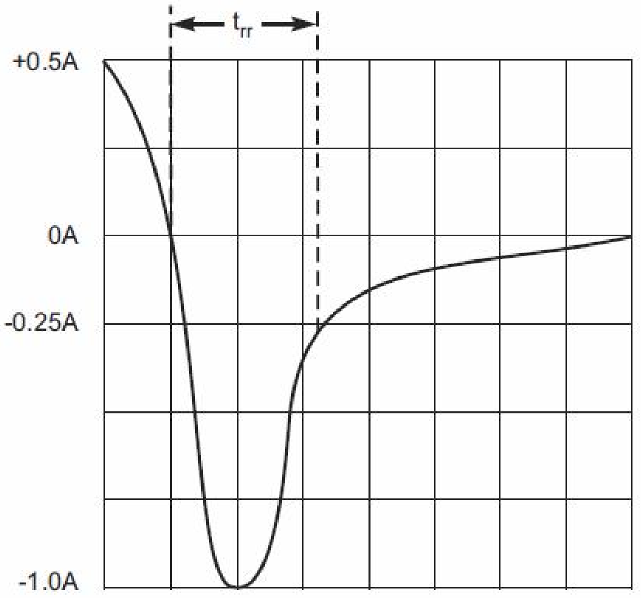
Fast Recovery Diodes

FR3AB~FR3MB DO-214AA(SMB)

Rating and Characteristic Curves (Continue)

Fig5. Reverse Recovery Time Characteristic and Test Circuit



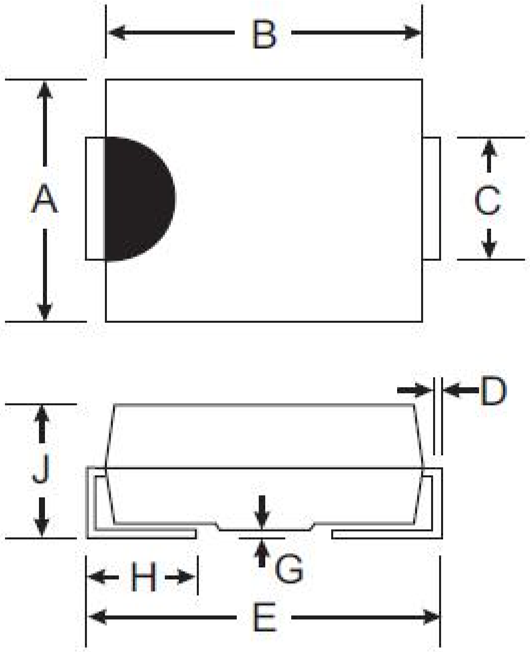


Notes:

1. Rise Time=7.0ns max. Input Impedance=1.0MΩ,22pF.
2. Rise Time=10ns max. Input Impedance=50Ω.

Set Time Base for 50/100 ns/cm

Package Outline (Unit: mm)



Dim	DO-214AA(SMB)	
	Min.	Max.
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62