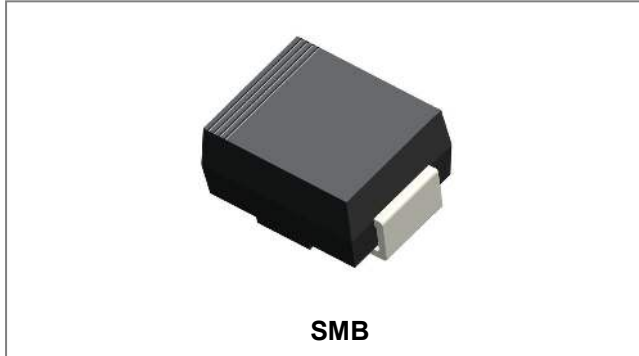


## FR2A-FR2M

### 2.0A SURFACE MOUNT FAST RECOVERY RECTIFIER



#### Features

- Glass passivated Die Construction
- Ideal Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Fast Recovery Time
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

#### Circuit Diagram



#### Mechanical Data

- **Case:** SMB molded plastic
- **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.09grams

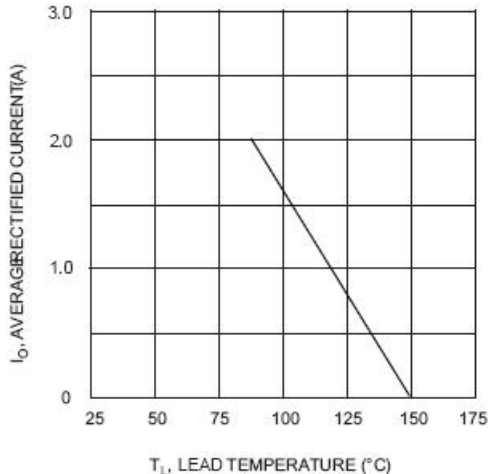
#### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

Characteristic	Symbol	FR2A	FR2B	FR2D	FR2G	FR2J	FR2K	FR2M	Units
Peak Repetitive Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>DC</sub>	<b>50</b>	<b>100</b>	<b>200</b>	<b>400</b>	<b>600</b>	<b>800</b>	<b>1000</b>	V
Maximum RMS voltage	V <sub>RMS</sub>	<b>35</b>	<b>70</b>	<b>140</b>	<b>280</b>	<b>420</b>	<b>560</b>	<b>700</b>	V
Average forward rectified output current @T <sub>L</sub> = 90°C	I <sub>(AV)</sub>	2.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	50							A
Forward Voltage @I <sub>F</sub> = 2.0A	V <sub>FM</sub>	1.30							V
Peak Reverse Current @T <sub>A</sub> = 25°C At Rated DC Blocking Voltage @T <sub>A</sub> = 125°C	I <sub>RM</sub>	5.0 300.0							μA
Reverse recovery time (Note 1)	t <sub>rr</sub>	150				250	500		ns
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	50							pF
Typical Thermal Resistance (Note 3)	R <sub>θJL</sub>	20							°C/W
Operating and Storage Temperature Range	T <sub>STG</sub>	-55 to +150							°C

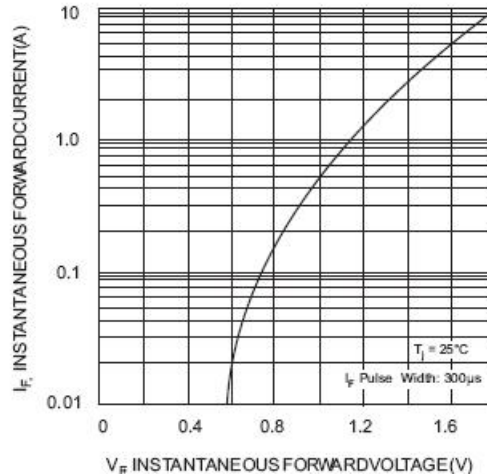
Note: 1. Reverse recovery condition I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A  
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Mounted on P.C.B Board with 8.0mm<sup>2</sup> land area.

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

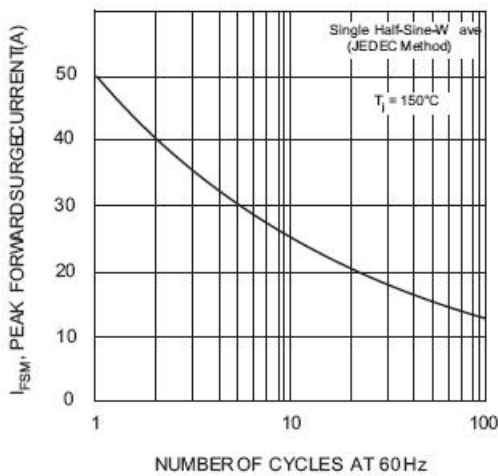
**Ratings and Characteristics Curves**



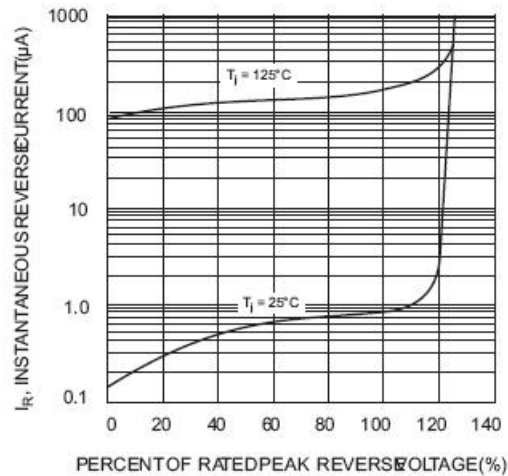
$T_L$ , LEAD TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



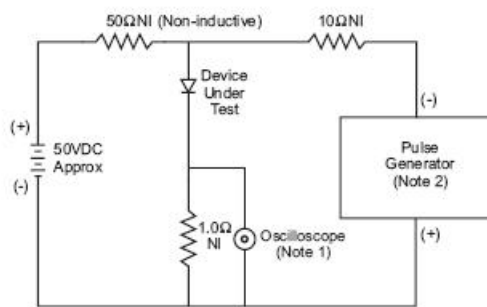
$V_F$  INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



NUMBER OF CYCLES AT 60Hz  
Fig. 3 Forward Surge Current Derating Curve



PERCENT OF RATED PEAK REVERSE VOLTAGE (%)  
Fig. 4, Typical Reverse Characteristics



Notes:  
1. Rise Time= 7.0ns max. Input Impedance= 1.0M  $\Omega$ , 2pF.  
2. Rise Time= 10ns max. Input Impedance= 50  $\Omega$ .

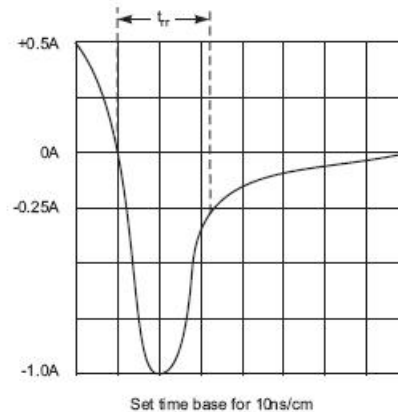
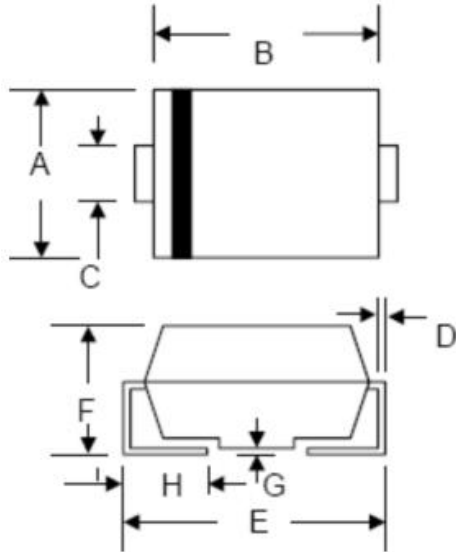


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

**Mechanical Dimensions SMB**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.80	2.20	0.071	0.087
D	0.152	0.305	0.006	0.012
E	4.80	5.59	0.189	0.220
F	2.10	2.60	0.083	0.102
G	0.051	0.203	0.002	0.008
H	0.76	1.52	0.030	0.060

**Ordering Information**

Device	Package	Shipping
FR2A-FR2M	SMB	3000pcs / reel

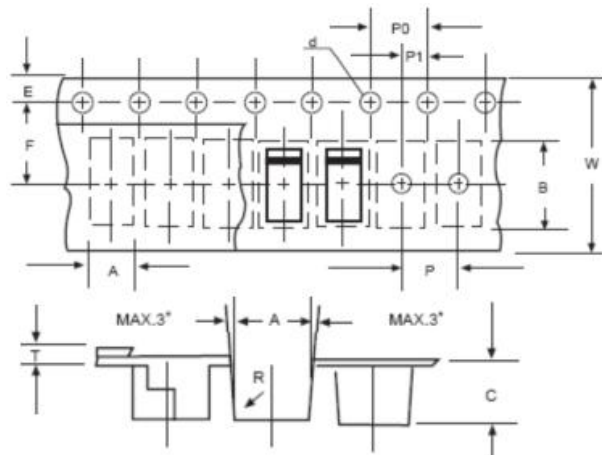
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

FR2A = Part Name  
 YY = Year  
 WW = Week  
 L = Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Carrier Tape & Reel Specification SMB**


SYMBOL	Millimeters	
	Min.	Max.
A	3.99	4.19
B	5.72	5.92
C	3.23	3.43
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	7.90	8.10
P0	3.90	4.10
P1	1.90	2.10
T	-	0.60
W	11.80	12.20

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