



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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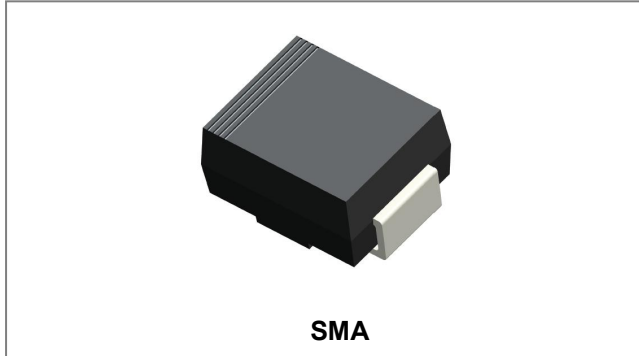
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## FR1A-FR1M

### 1.0A SURFACE MOUNT FAST RECOVERY RECTIFIER



#### Features

- Fast switching for high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 260 ° C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- Glass passivated chip junction
- 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: JEDEC DO-214AC molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.07 grams

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

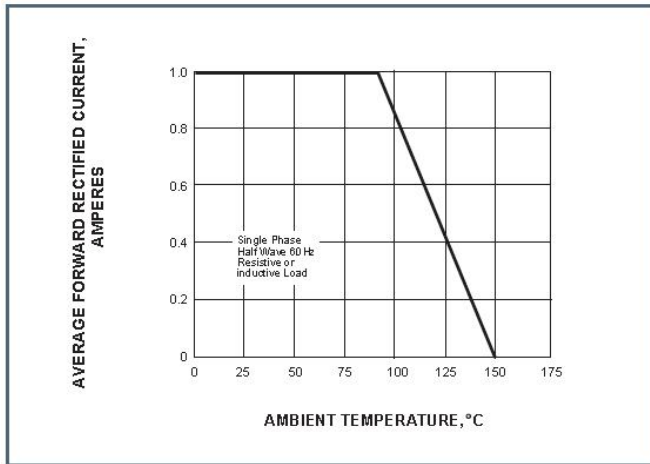
Characteristic	Symbol	FR1A	FR1B	FR1D	FR1G	FR1J	FR1K	FR1M	Units
Peak Repetitive Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Average forward rectified output current @T <sub>A</sub> = 90°C	I <sub>(AV)</sub>	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	30							A
Forward Voltage @I <sub>F</sub> = 1.0A	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> = 100°C	I <sub>RM</sub>	5.0 50.0							µA
Reverse recovery time (Note 1)	t <sub>rr</sub>	150				250	500		ns
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	15							pF
Typical Thermal Resistance (Note 3)	R <sub>θJA</sub> R <sub>θJL</sub>	100.0 32							°C/W
Operating and Storage Temperature Range	T <sub>STG</sub>	-55 to +150							°C

Note: 1. Reverse recovery condition IF=0.5A, IR=1.0A, Irr=0.25A  
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.

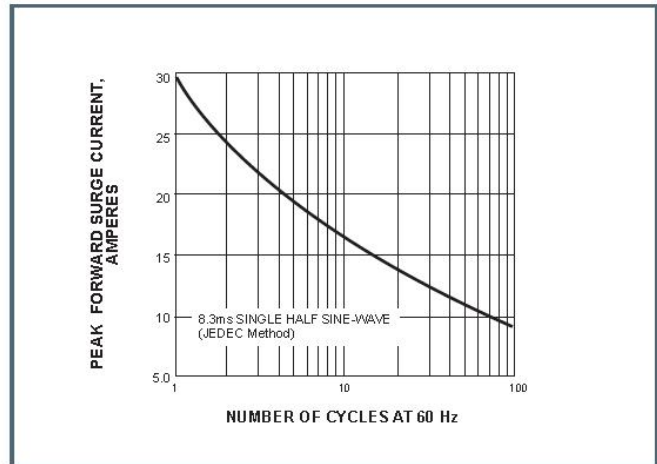
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Ratings and Characteristics Curves**

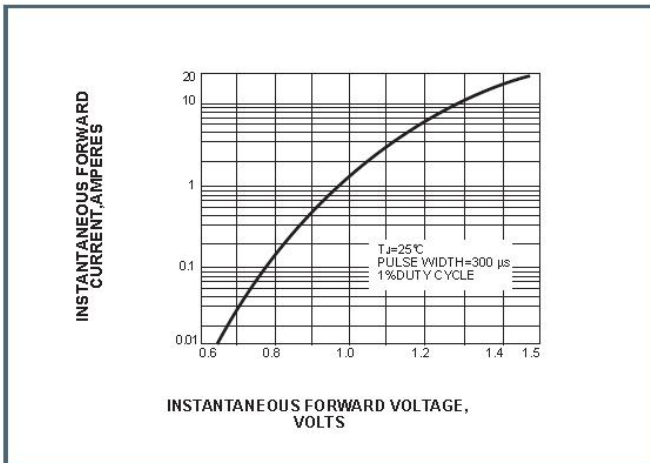
**FIG. 1- FORWARD CURRENT DERATING CURVE**



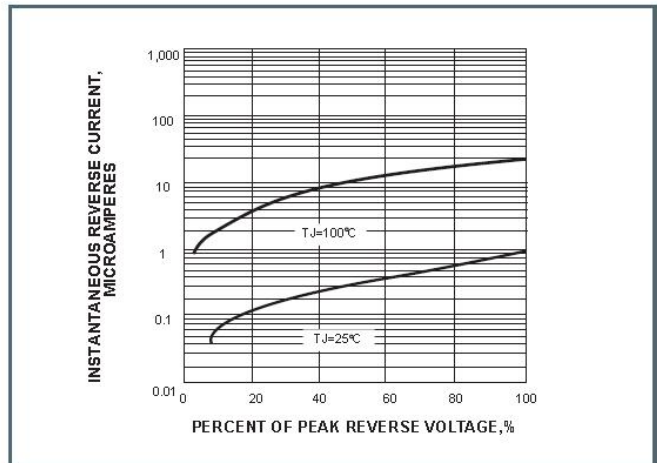
**FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



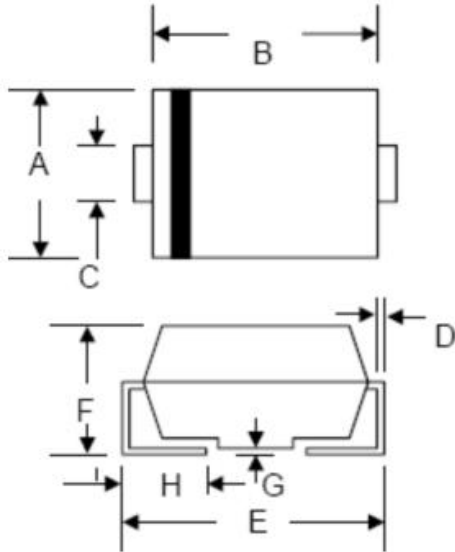
**FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4-TYPICAL REVERSE CHARACTERISTICS**





**Mechanical Dimensions SMA**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.84	0.094	0.112
B	3.99	4.75	0.157	0.187
C	1.05	1.70	0.041	0.067
D	0.15	0.51	0.006	0.020
E	4.80	5.66	0.189	0.223
F	1.90	2.95	0.075	0.116
G	0.05	0.203	0.002	0.008
H	0.76	1.52	0.030	0.600

**Ordering Information**

Device	Package	Shipping
FR1A-FR1M	SMA	5000pcs / reel

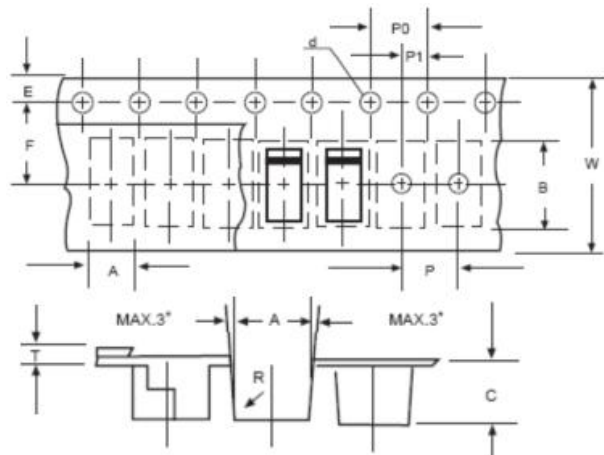
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

FR1A = Part Name  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Carrier Tape & Reel Specification SMA**


SYMBOL	Millimeters	
	Min.	Max.
A	2.97	3.17
B	5.70	5.90
C	2.32	2.52
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
T	0.25	0.35
W	11.80	12.20

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