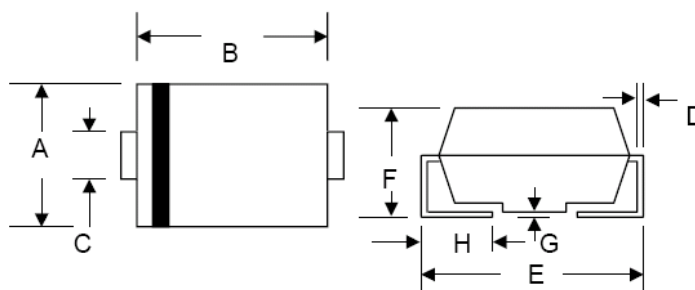


Technical Data  
Data Sheet N0438, Rev. -

Green Products

## Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Surge Overload Rating to 30A Peak
- Low Power Loss
- Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



SMB/DO-214AA				
Dim	Min	Max	Min	Max
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.91	2.11	0.075	0.083
D	0.152	0.305	0.006	0.012
E	5.08	5.59	0.2	0.220
F	2.13	2.44	0.084	0.096
G	0.051	0.203	0.002	0.008
H	0.76	1.27	0.029	0.05
	in mm		in inch	

## Mechanical Data

- Case: Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)

## Marking Diagram:

Where XXXXX is YYWWL



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

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

## Ordering Information

Device	Package	Shipping
FR1A-FR1K	SMB (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

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

Characteristic	Symbol	FR1A	FR1B	FR1D	FR1G	FR1J	FR1K	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	50	100	200	400	600	800	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	560	V
Average Rectified Output Current @T <sub>L</sub> = 90°C	I <sub>O</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> = 125°C	I <sub>RM</sub>	5.0 300						μA
Reverse Recovery Time (Note 1)	t <sub>rr</sub>	150				250	500	nS
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	10						pF
Typical Thermal Resistance (Note 3)	R <sub>θJL</sub>	30						K/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-50 to +150						°C

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

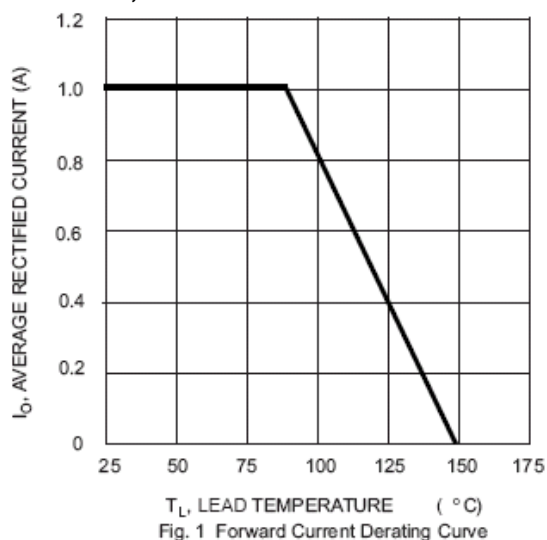


Fig. 1 Forward Current Derating Curve

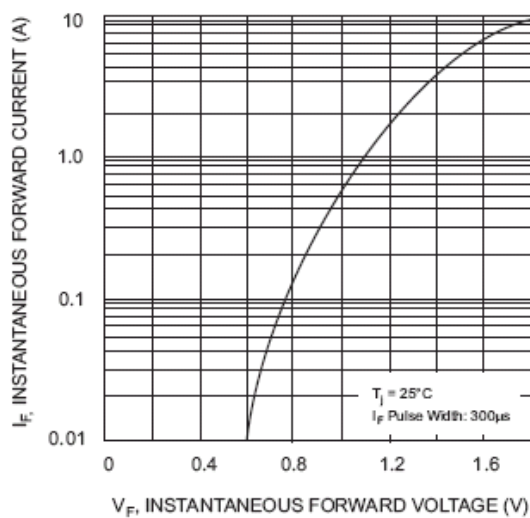


Fig. 2 Typical Forward Characteristics

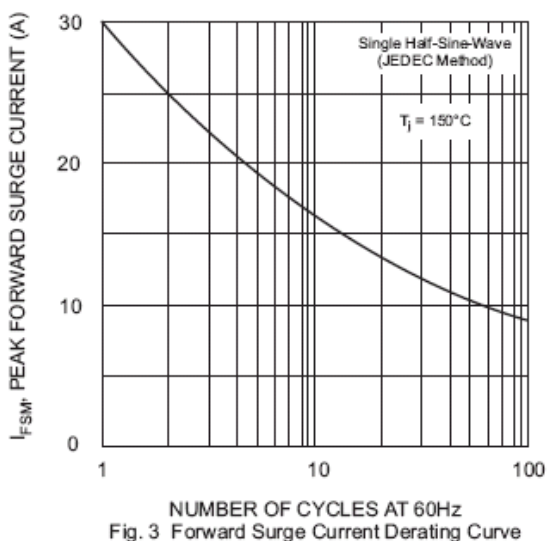


Fig. 3 Forward Surge Current Derating Curve

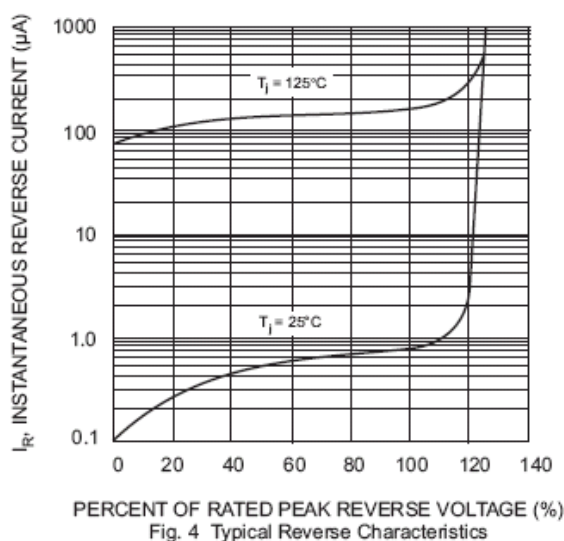
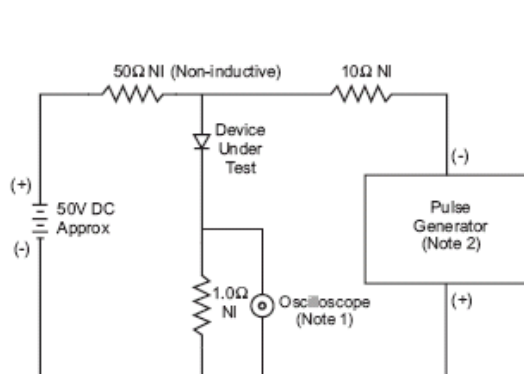


Fig. 4 Typical Reverse Characteristics



Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .

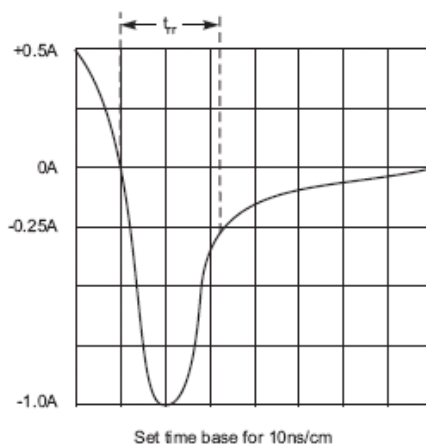


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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