Micro Commercial Components
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FR1A
THRU
FR1M

1 Amp Fast Recovery Silicon Rectifier 50 to 1000 Volts

Features

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Superfast Recovery Times For High Efficiency

Maximum Ratings

- Operating Temperature: -50°C to +150°C
- Storage Temperature: -50°C to +150°C
- Maximum Thermal Resistance; 15°C/W Junction To Lead

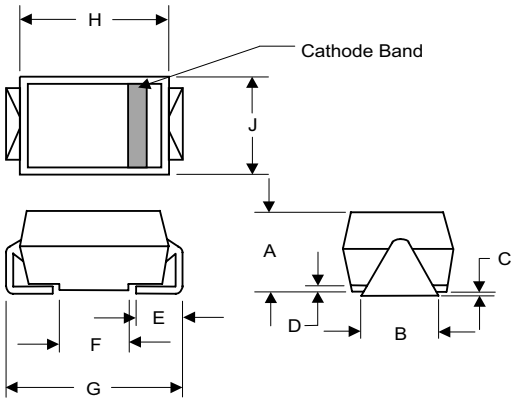
MCC Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
FR1A	FR1A	50V	35V	50V
FR1B	FR1B	100V	70V	100V
FR1D	FR1D	200V	140V	200V
FR1G	FR1G	400V	280V	400V
FR1J	FR1J	600V	420V	600V
FR1K	FR1K	800V	560V	800V
FR1M	FR1M	1000V	700V	1000V

Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward current	$I_{F(AV)}$	1.0A	T_a = 90°C
Peak Forward Surge Current	I_{FSM}	30A	8.3ms, half sine
Maximum Instantaneous Forward Voltage	V_F	1.30V	I_{FM} = 1.0A; T_J = 25°C*
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	5µA 200µA	T_J = 25°C T_J = 125°C
Maximum Reverse Recovery Time FR1A-G FR1J FR1K-M	T_{rr}	 150ns 250ns 500ns	 I_F=0.5A, I_R=1.0A, I_{rr}=0.25A
Typical Junction Capacitance	C_J	12pF	Measured at 1.0MHz, V_R=4.0V

*Pulse test: Pulse width 200 µsec, Duty cycle 2%

DO-214AA
(HSMB) (Round Lead)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.078	.116	1.98	2.95	
B	.075	.089	1.90	2.25	
C	.002	.008	.05	.20	
D	-----	.02	-----	.51	
E	.035	.055	.90	1.40	
F	.065	.091	1.65	2.32	
G	.205	.224	5.21	5.69	
H	.160	.180	4.06	4.57	
J	.130	.155	3.30	3.94	

SUGGESTED SOLDER PAD LAYOUT

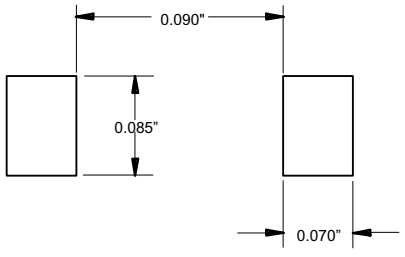
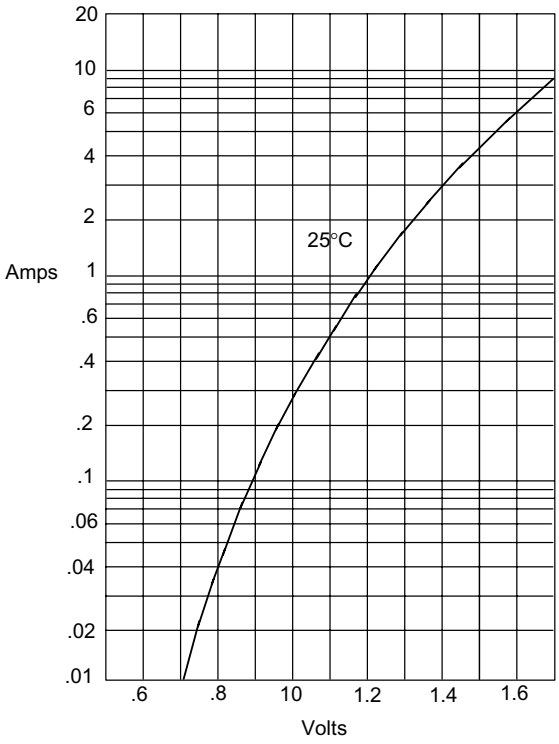
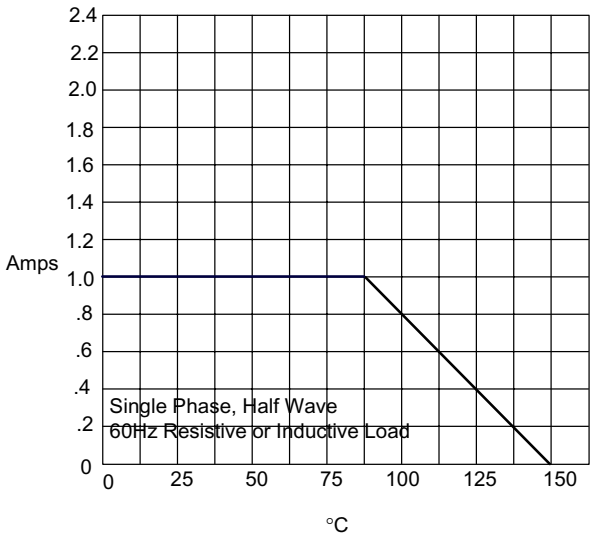


Figure 1
Typical Forward Characteristics



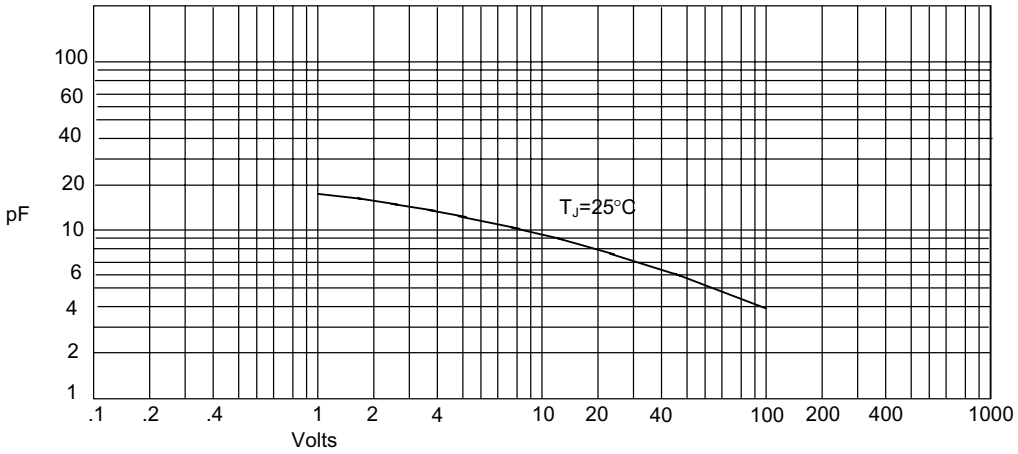
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



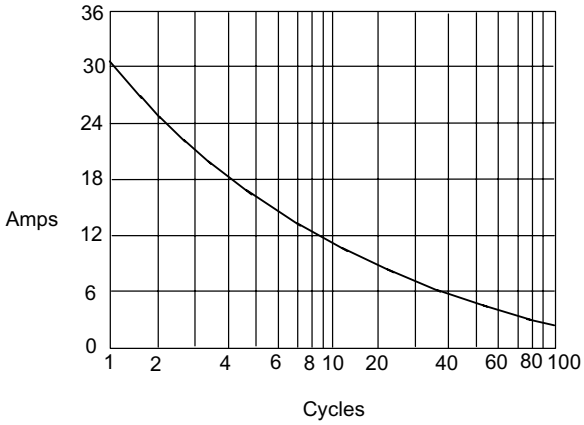
Average Forward Rectified Current - Amperes *versus*
Ambient Temperature -°C

Figure 3
Junction Capacitance



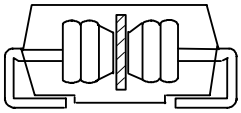
Junction Capacitance - pF *versus*
Reverse Voltage - Volts

Figure 4
Peak Forward Surge Current



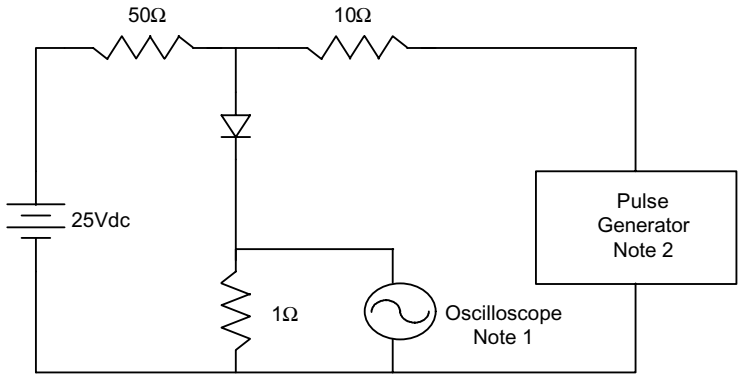
Peak Forward Surge Current - Amperes *versus*
Number Of Cycles At 60Hz - Cycles

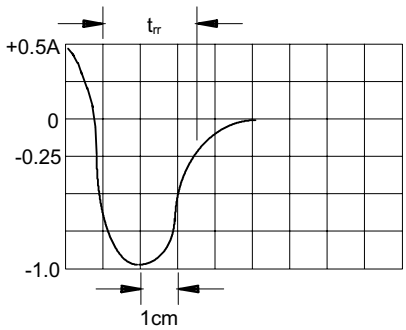
Figure 5
New SMB Assembly



Round Lead
Process

Figure 6
Reverse Recovery Time Characteristic And Test Circuit Diagram





Set Time Base for 20/100ns/cm

Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
2. Rise Time = 10ns max.
Source impedance = 50 ohms
3. Resistors are non-inductive

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