



Micro Commercial Components



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Features

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Fast 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-L	FR1A	50V	35V	50V
FR1B-L	FR1B	100V	70V	100V
FR1D-L	FR1D	200V	140V	200V
FR1G-L	FR1G	400V	280V	400V
FR1J-L	FR1J	600V	420V	600V
FR1K-L	FR1K	800V	560V	800V
FR1M-L	FR1M	1000V	700V	1000V

Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward current	$I_{F(AV)}$	1.0A	$T_a = 90^\circ\text{C}$
Peak Forward Surge Current	I_{FSM}	30A	8.3ms, half sine
Maximum Instantaneous Forward Voltage	V_F	1.30V	$I_{FM} = 1.0A$; $T_J = 25^\circ\text{C}^*$
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	5 μA 200 μA	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$
Maximum Reverse Recovery Time FR1A-L-G-L FR1J-L FR1K-L-M-L	T_{rr}	150ns 250ns 500ns	$I_F = 0.5A$, $I_R = 1.0A$, $I_{rr} = 0.25A$
Typical Junction Capacitance	C_J	15pF	Measured at 1.0MHz, $V_R = 4.0V$

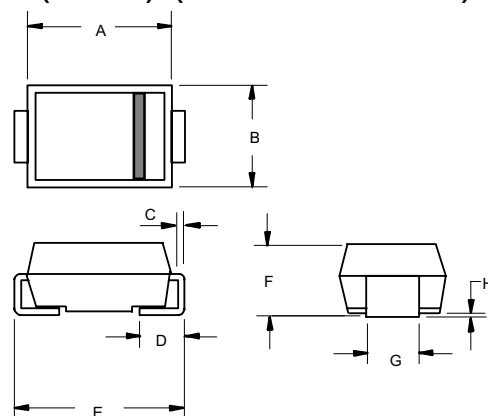
*Pulse test: Pulse width 200 μsec , Duty cycle 2%

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7.

FR1A-L THRU FR1M-L

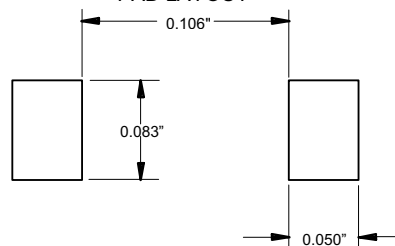
1 Amp Fast Recovery Silicon Rectifier 50 to 1000 Volts

DO-214AA (SMB) (LEAD FRAME)



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.160	.185	4.06	4.70	
B	.130	.155	3.30	3.94	
C	.006	.012	0.15	0.31	
D	.030	.060	0.76	1.52	
E	.200	.220	5.08	5.59	
F	.079	.096	2.00	2.44	
G	.075	.087	1.91	2.21	
H	.002	.008	0.05	0.203	

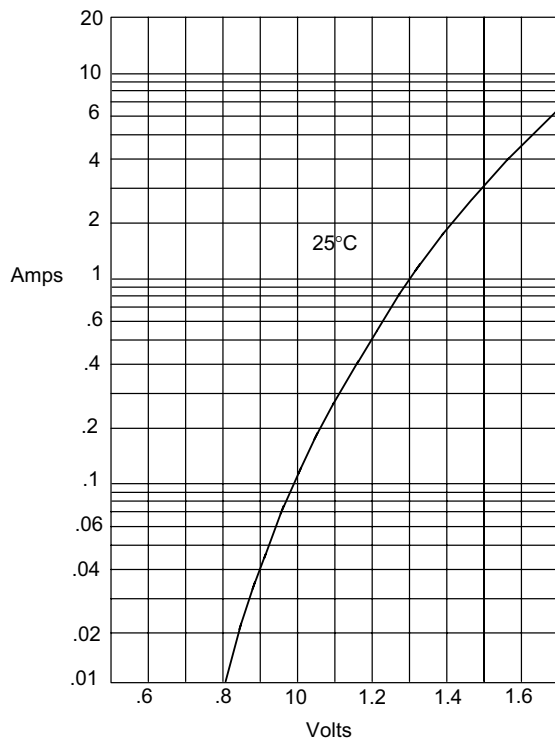
SUGGESTED SOLDER PAD LAYOUT



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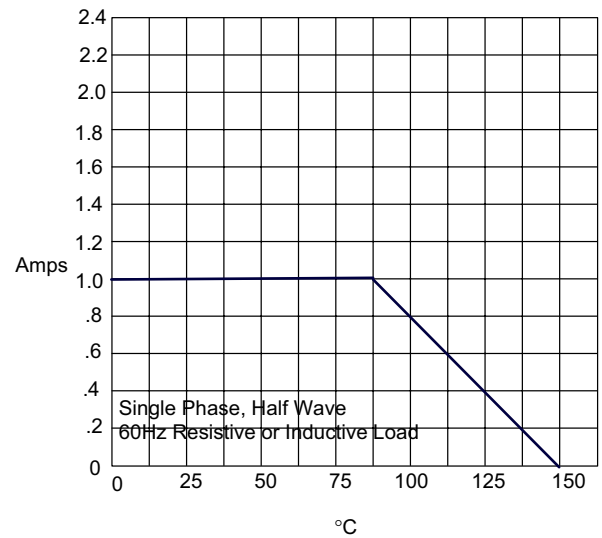
FR1A-L thru FR1M-L

Figure 1
Typical Forward Characteristics



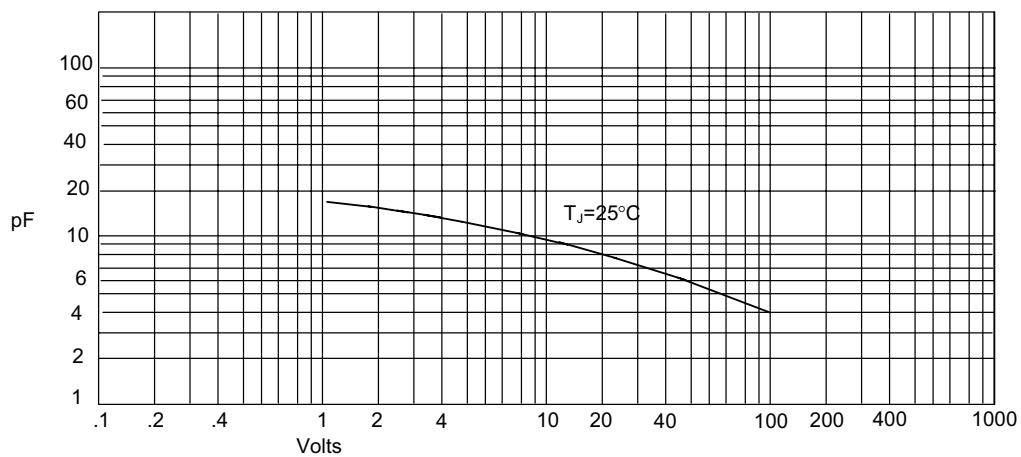
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



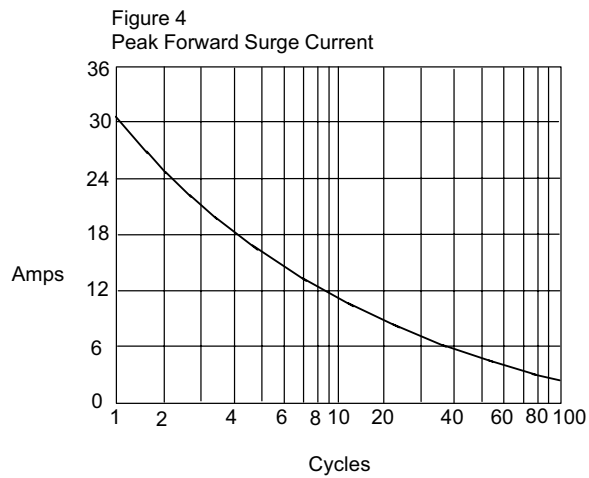
Average Forward Rectified Current - Amperes *versus*
Ambient Temperature - °C

Figure 3
Junction Capacitance



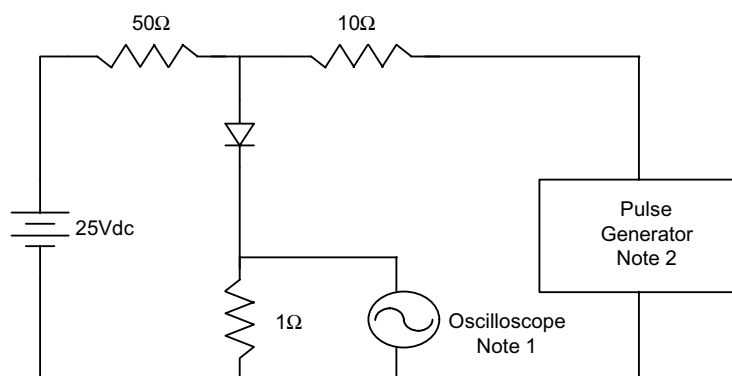
Junction Capacitance - pF *versus*
Reverse Voltage - Volts

FR1A-L thru FR1M-L



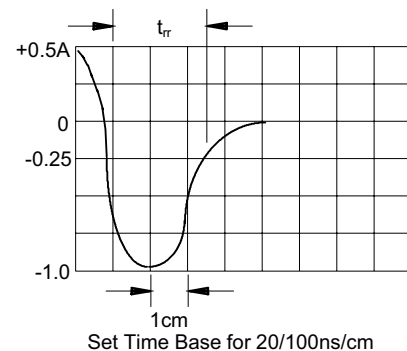
Peak Forward Surge Current - Amperes *versus*
Number Of Cycles At 60Hz - Cycles

Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram



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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Ordering Information :

Device	Packing
FR1A-LTP~FR1M-LTP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. FR1A-LTP-HF~FR1M-LTP-HF

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