



Micro Commercial Components
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FR1QG THRU FR1ZZG

Features

- For Surface Mount Applications
- Extremely Low Thermal Resistance
- High Temp Soldering: 250°C for 10 Seconds At Terminals
- Fast Recovery Times For High Efficiency
- Gull Wing Lead Bend To Prevent Arcing
- Perfect For Ballast, Television And Monitor Applications

1 Amp Fast Recovery Silicon Rectifier 1200 to 2000 Volts

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

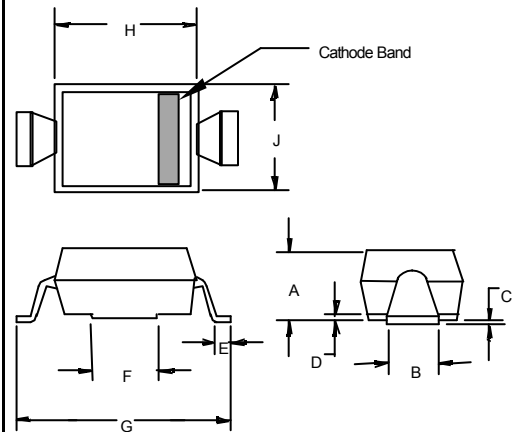
MCC Part Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
FR1QG	FR1Q	1200V	840V	1200V
FR1VG	FR1V	1400V	980V	1400V
FR1YG	FR1Y	1600V	1120V	1600V
FR1ZG	FR1Z	1800V	1260V	1800V
FR1ZZG	FR1ZZ	2000V	1400V	2000V

Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward Current	$I_{F(AV)}$	1.0A	$T_J = 55^\circ\text{C}$
Peak Forward Surge Current	I_{FSM}	30A	8.3ms, half sine
Maximum Instantaneous Forward Voltage	V_F	1.50V 1.70V	$I_{FM} = 1.0A;$ $T_J = 25^\circ\text{C}^*$
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	5 μA 30 μA	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$
Maximum Reverse Recovery Time	T_{rr}	300ns 500ns	$I_F=0.5A, I_R=1.0A,$ $I_{rr}=0.25A$
Typical Junction Capacitance	C_J	45pF	Measured at 1.0MHz, $V_R=4.0V$

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

DO-215AA (SMBG) (Round Lead)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.075	.116	1.90	2.95	
B	.078	.087	1.98	2.21	
C	.002	.008	.05	.20	
D	—	.02	—	.51	
E	.015	.03	.38	.76	
F	.065	.084	1.65	2.13	
G	.245	.276	6.22	7.00	
H	.160	.180	4.06	4.57	
J	.130	.151	3.30	3.83	

SUGGESTED SOLDER PAD LAYOUT

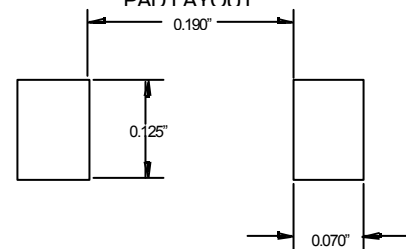
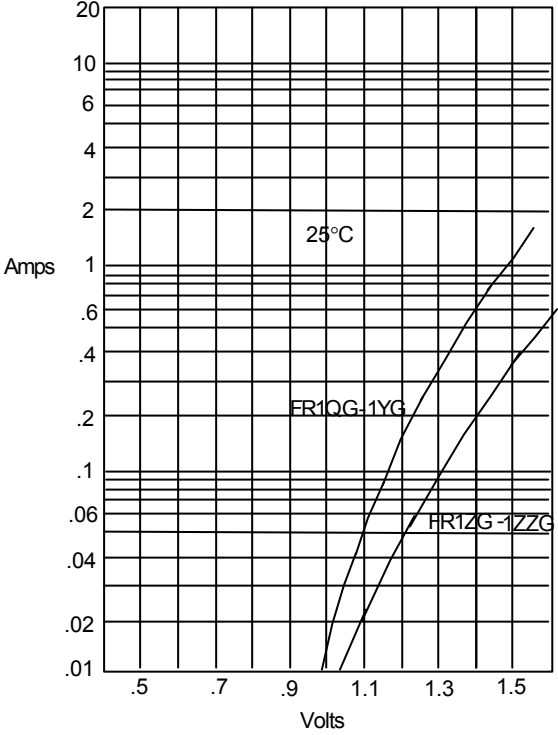
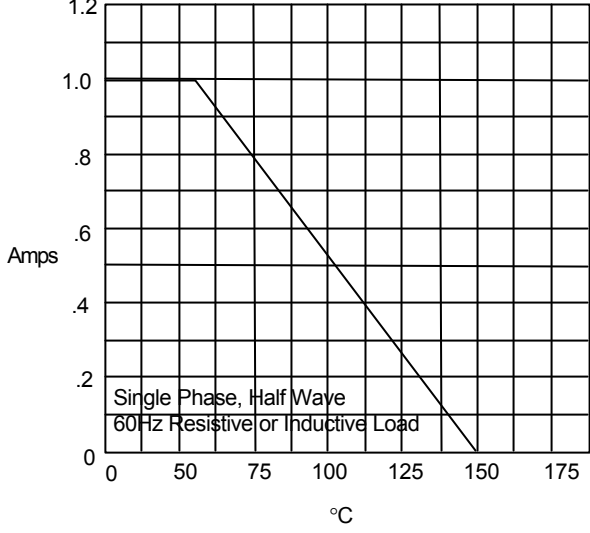


Figure 1
Typical Forward Characteristics



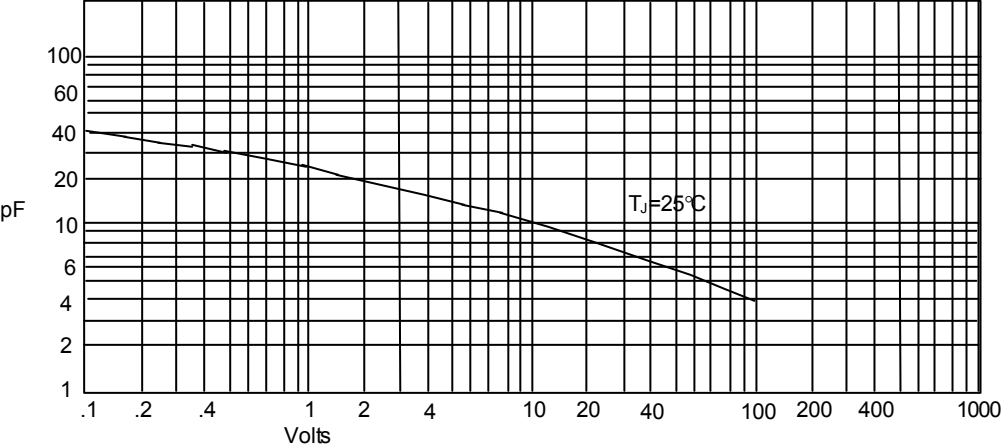
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve

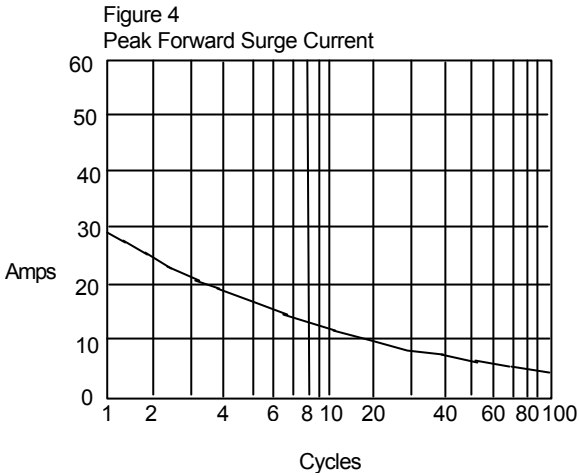


Average Forward Rectified Current - Amperes *versus*
Ambient Temperature - °C

Figure 3
Junction Capacitance

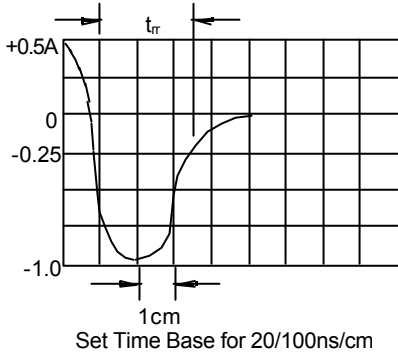
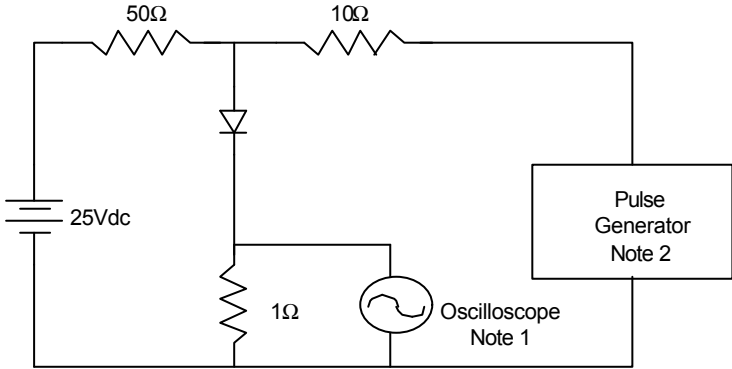


Junction Capacitance - pF *versus*
Reverse Voltage - Volts



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