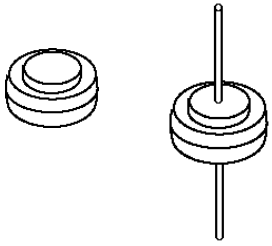
Semiconductor

Data Sheet

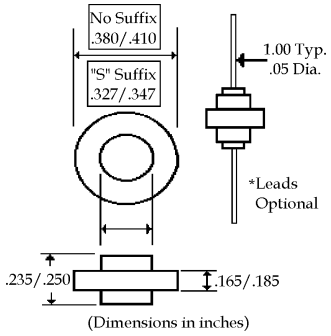
50 Amp PLASTIC SILICON AUTOMOTIVE RECTIFIERS

FR5001 . . . 5004 Series

Description



Mechanical Dimensions



Options - Add Suffix to Part #:
FR5000L = 2 Leads
For 1 Lead:
FR5000C = Lead On Cathode
FR5000A = Lead On Anode

Features

- **LOW COST**
- **HIGH SURGE CAPABILITY**
- **DIFFUSED JUNCTION**
- **LOW LEAKAGE CURRENT**
- **HIGH TEMPERATURE CAPABILITY**
- **MEETS UL SPECIFICATION 94V-0**

	FR5001 . . . 5004 Series				Units
Maximum Ratings	**FR5001**	**FR5002**	**FR5003**	**FR5004**	
Peak Repetitive Reverse Voltage...V_{RRM}	100	200	300	400	Volts
RMS Reverse Voltage...$V_{R(rms)}$	70	140	210	280	Volts
DC Blocking Voltage...V_{DC}	100	200	300	400	Volts
Average Forward Rectified Current...$I_{F(av)}$ Single Phase Resistive Load, 60 Hz, T_C = 150°C	50				Amps
Non-Repetitive Peak Forward Surge Current...I_{FSM} Surge Supplied @ Rated Load Conditions, ½ Sine Wave, Single Phase, 60 Hz	600				Amps
Operating & Storage Temperature Range...T_J, T_{STRG}	-50 to 175				°C
Electrical Characteristics					
Maximum Forward Voltage @ 80A...V_F *(Note 4)*	1.06				Volts
Maximum DC Reverse Current...I_R 25°C	2.0				µAmps
@ Rated DC Blocking Voltage 150°C	500				µAmps
Typical Junction Capacitance...C_J *(Note 1)*	300				pF
Typical Thermal Resistance...$R_{\theta JC}$ *(Note 2)*	0.8				°C/W
Typical Reverse Recovery Time...t_{RR}	3.0				µs

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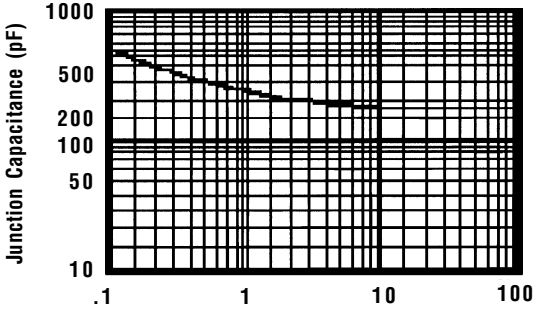
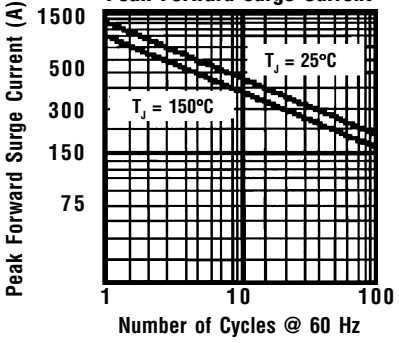
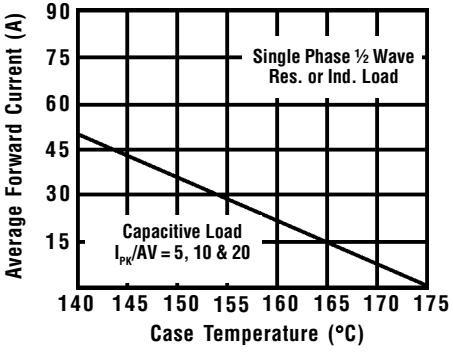
Typical Junction Capacitance



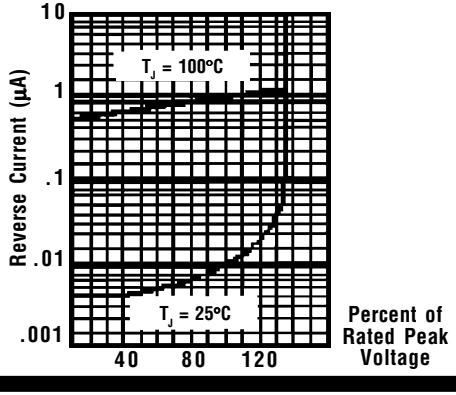
Non-Repetitive Peak Forward Surge Current



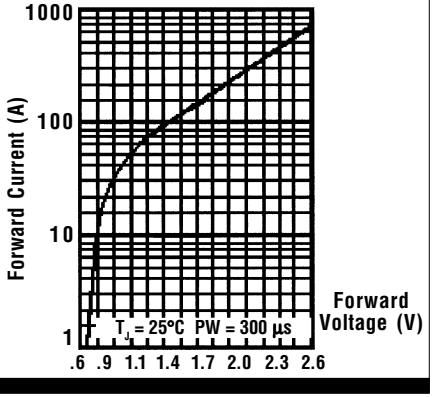
Forward Current Derating Curve



Typical Reverse Characteristics



Typical Instantaneous Forward Characteristics



Ratings at 25 Deg. C ambient temperature unless otherwise specified.

Single Phase Half Wave, 60 Hz Resistive or Inductive Load.

For Capacitive Load, Derate Current by 20%.

NOTES: 1. Measured @ 1 MHz and applied reverse voltage of 4.0V.
2. Thermal Resistance Junction to Case, Jedec Method.
3. When Mounted to heat sink, from body.
4. Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle 2%.