

**FR301  
THRU  
FR307**

**Features**

- Low Cost
- Low Leakage
- Low Forward Voltage Drop
- High Current Capability
- Fast Switching Speed For High Efficiency

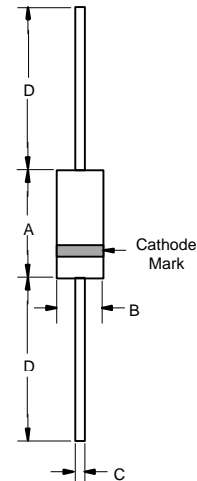
**3 Amp Fast Recovery  
Rectifier  
50 to 1000 Volts**

**Maximum Ratings**

- Operating Temperature: -65°C to +150°C
- Storage Temperature: -65°C to +150°C

Microsemi Catalog Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
FR301	---	50V	35V	50V
FR302	---	100V	70V	100V
FR303	---	200V	40V	200V
FR304	---	400V	280V	400V
FR305	---	600V	420V	600V
FR306	---	800V	560V	800V
FR307	---	1000V	700V	1000V

**DO-201AD**



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

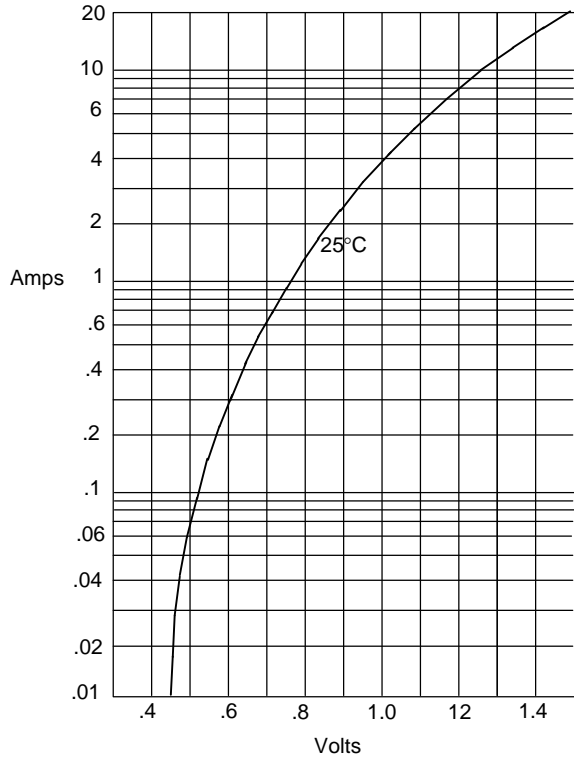
Average Forward Current	$I_{F(AV)}$	3 A	$T_A = 55^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	200A	8.3ms, half sine
Maximum Instantaneous Forward Voltage	$V_F$	1.3V	$I_{FM} = 3.0\text{A};$ $T_A = 25^\circ\text{C}$
Maximum DC Reverse Current At Rated DC Blocking Voltage	$I_R$	10 $\mu\text{A}$ 150 $\mu\text{A}$	$T_A = 25^\circ\text{C}$ $T_A = 55^\circ\text{C}$
Maximum Reverse Recovery Time	$T_{rr}$	150ns 250ns 500ns	$I_F=0.5\text{A}, I_R=1.0\text{A},$ $I_{rr}=0.25\text{A}$
Typical Junction Capacitance	$C_J$	65pF	Measured at 1.0MHz, $V_R=4.0\text{V}$

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	---	.370	---	9.50	
B	---	.250	---	6.40	
C	.048	.052	1.20	1.30	
D	1.000	---	25.40	---	

\*Pulse Test: Pulse Width 300 $\mu\text{sec}$ , Duty Cycle 1%

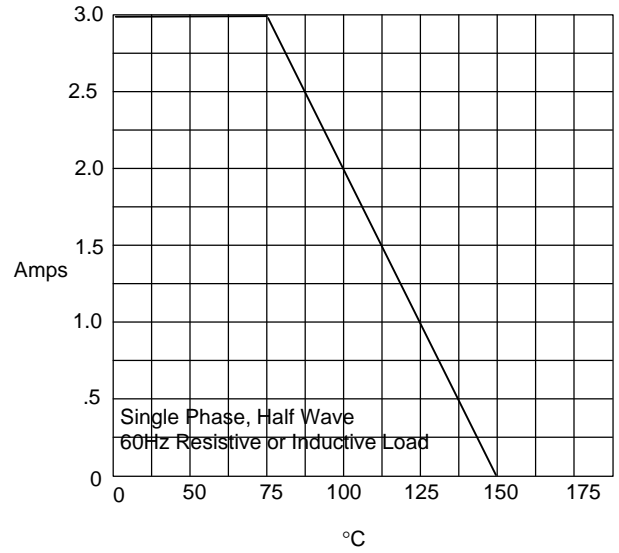
# FR301 thru FR307

Figure 1  
Typical Forward Characteristics



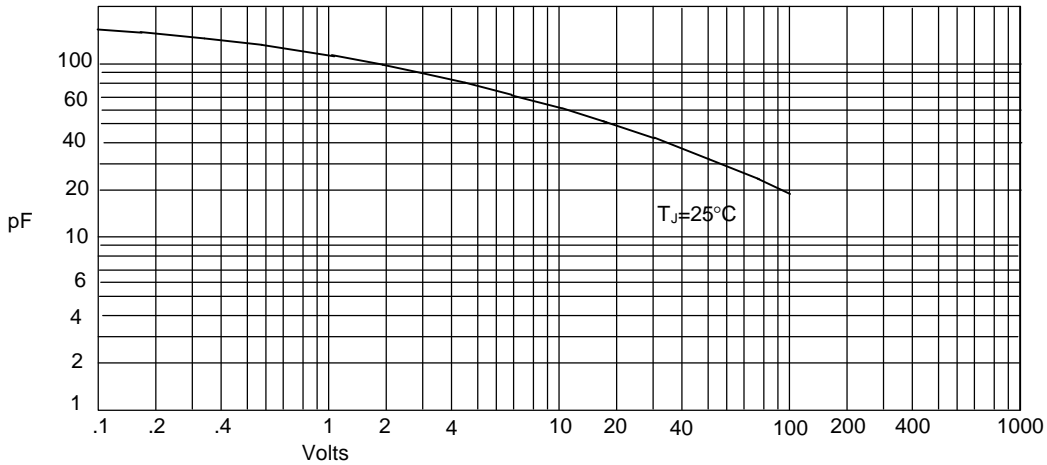
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



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

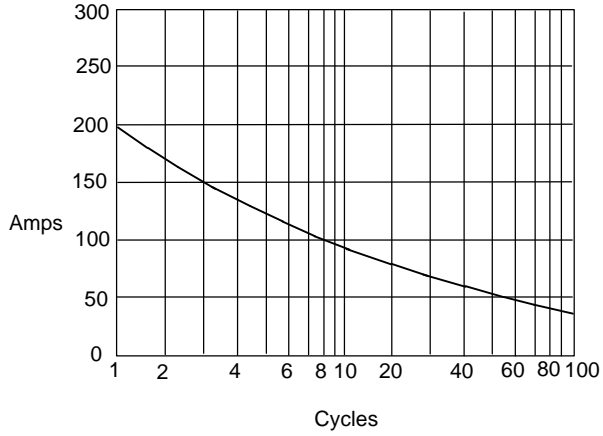
Figure 3  
Junction Capacitance



Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

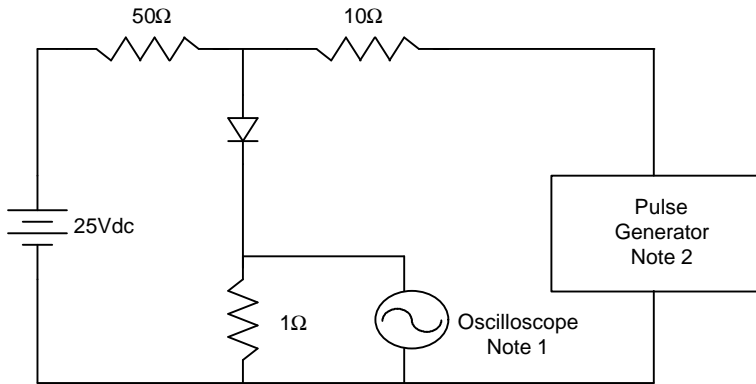
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Figure 4  
Peak Forward Surge Current



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

