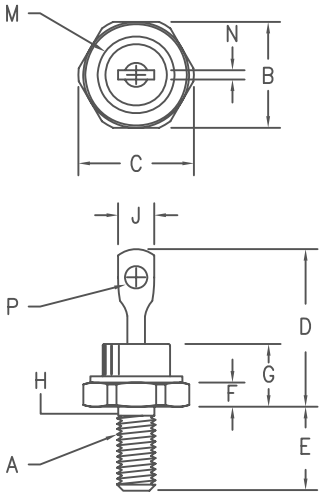
Military Fast Recovery Rectifier
1N3890 – 1N3893



Notes:
1. 10–32 UNF3A threads
2. Full threads within 2 1/2 threads
3. Standard Polarity: Stud is Cathode
   Reverse Polarity: Stud is Anode

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	---	---	---	---	1
B	.424	.437	10.77	11.10	
C	---	.505	---	12.82	
D	---	.800	---	20.32	
E	.422	.453	10.72	11.50	
F	.075	.175	1.90	4.44	
G	---	.405	---	10.29	
H	.163	.189	4.14	4.80	2
J	---	.250	---	6.35	
M	---	.424	---	10.77	Dia.
N	.020	.065	.510	1.65	
P	.060	---	1.52	---	Dia.

DO203AA (DO4)

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
1N3890*	100V	100V
1N3891*	200V	200V
1N3893*	400V	400V

*Add Suffix R For Reverse Polarity

- Fast Recovery Rectifier
- Available in JAN, JANTX, JANTXV
- Mil–PRF–19500/304
- 175°C Junction Temperature
- V_{RRM} 100 to 400 Volts
- 12 Amps Current Rating

Electrical Characteristics

Average forward current	$I_{F(AV)}$ 12 Amps	T_C = 100°C, Square wave, $R_{\theta JC}$ = 2.0°C/W
Maximum surge current	I_{FSM} 175 Amps	8.3 ms, half sine T_C = 100°C
Max peak forward voltage	V_{FM} 2.75 Volts	I_{FM} = 175A; T_J = 25°C (800µs pulse width)
Max peak forward voltage	V_{FM} 1.50 Volts	I_{FM} = 38A T_J = 25°C*
Max peak reverse current	I_{RM} 2 mA	V_{RRM}, T_J = 150°C
Max peak reverse current	I_{RM} 10 µA	V_{RRM}, T_J = 25°C
Max reverse recovery time	t_{RR} 200 ns	I_F = 1A dc, V_R = 30V, di/dt = 25A/µs, TC = 55°C
Max junction capacitance	C_J 115 pF	V_R = 10V, f = 1Mhz, T_J = 25°C

*Pulse test: Pulse width 300 µsec, Duty cycle 2%

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	–65°C to 175°C
Operating junction temp range	T_J	–65°C to 175°C
Max thermal resistance	$R_{\theta JC}$	2.0°C/W Junction to case
Mounting torque		15 inch pounds maximum
Weight		.16 ounces (5.0 grams) typical

LAWRENCE Microsemi
6 Lake Street
Lawrence, MA 01841
PH: (978) 620–2600
FAX: (978) 689–0803
www.microsemi.com

04–18–07 Rev. 2

1N3890 – 1N3893

Figure 1
Typical Forward Characteristics

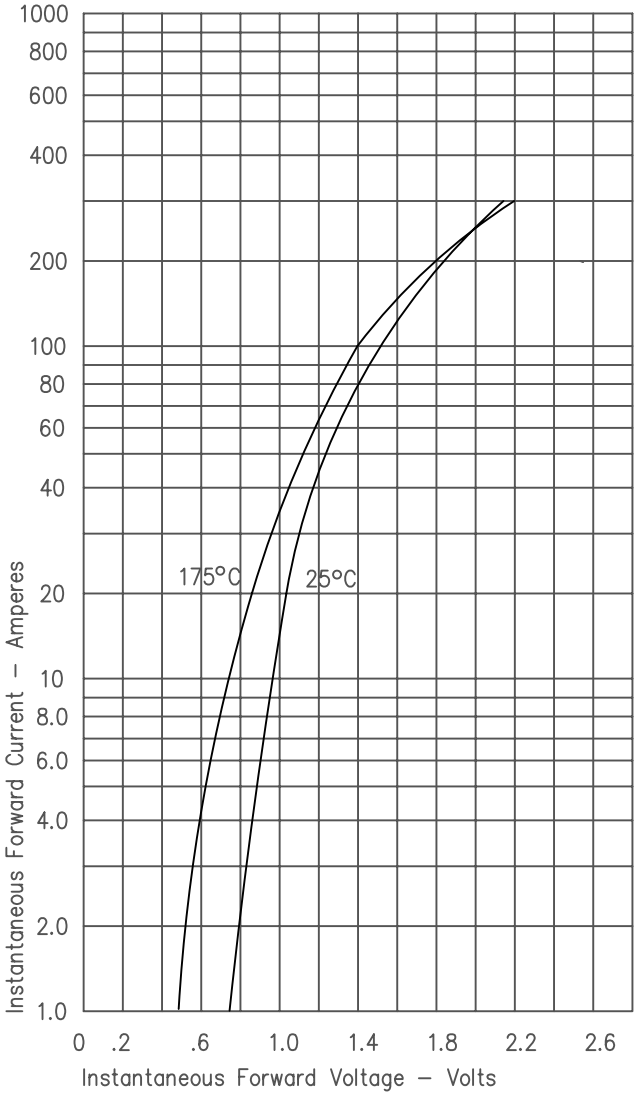


Figure 2
Typical Reverse Characteristics

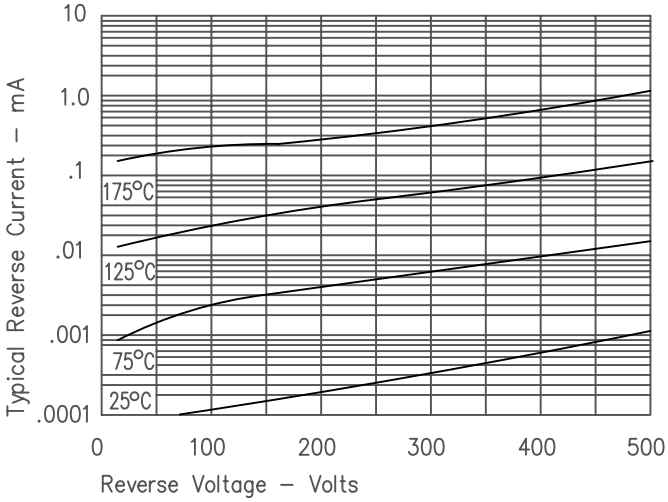


Figure 3
Typical Junction Capacitance

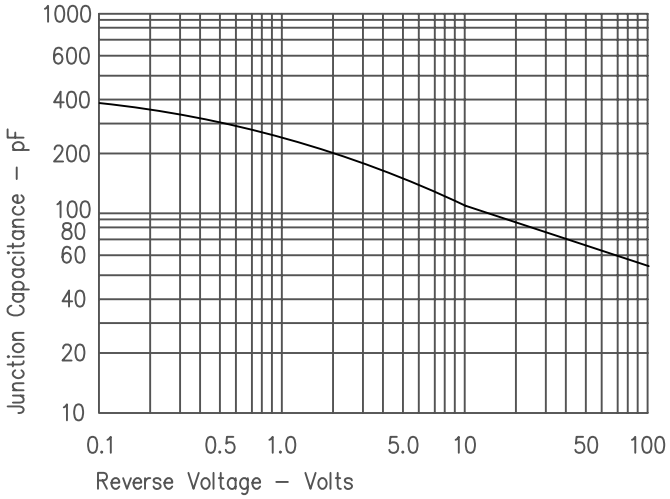


Figure 4
Forward Current Derating