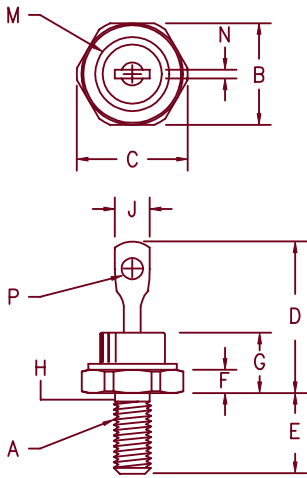# Ultra Fast Recovery Rectifier
1N5812 — 1N5816

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 Minimum	Inches Maximum	Millimeter Minimum	Millimeter Maximum	Notes
A	———	———	———	———	1
B	.424	.437	10.77	11.10	
C	———	.505	———	12.82	
D	.600	.800	15.24	20.32	
E	.422	.453	10.72	11.50	
F	.075	.175	1.91	4.44	
G	———	.405	———	10.29	
H	.163	.189	4.15	4.80	2
J	———	.250	2.54	3.56	
M	———	.350	———	8.89	Dia.
N	.020	.065	.510	1.65	
P	.070	.100	1.78	2.54	Dia.

DO203AA (DO4)

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
1N5812*	50V	50V
1N5813*	75V	75V
1N5814*	100V	100V
1N5815*	125V	125V
1N5816*	150V	150V

*Add Suffix R For Reverse Polarity

- Ultra Fast Recovery Rectifier
- 175°C Junction Temperature
- V_{RRM} — 50 to 150 Volts
- 20 Amps Current Rating

Electrical Characteristics

Average forward current	$I_{F(AV)}$	20 Amps	$T_C = 100°C$, Square wave, $R_{\theta JC} = 1.5°C/W$
Maximum surge current	I_{FSM}	400 Amps	8.3 ms, half sine $T_C = 100°C$
Max peak forward voltage	V_{FM}	.86 Volts	$I_{FM} = 10A$: $T_J = 25°C$*
Max peak forward voltage	V_{FM}	.95 Volts	$I_{FM} = 20A$: $T_J = 25°C$*
Max peak reverse current	I_{RM}	10 μA	V_{RRM}, $T_J = 25°C$
Max peak reverse current	I_{RM}	1 mA	V_{RRM}, $T_J = 100°C$
Max reverse recovery time	t_{RR}	35 ns	$I_F = I_R = 1A$ dc (pk), $I_{(REC)} = 0.1A$, di/dt = 85A/μs
Max junction capacitance	C_J	300 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	$R_{\theta JC}$	1.5°C/W Junction to case
Mounting torque		12—15 inch pounds
Weight		.16 ounces (5.0 grams) typical

8—29—00   Rev. IR

1N5812 – 1N5816

Figure 1
Typical Forward Characteristics

175°C   25°C

Instantaneous Forward Current – Amperes

Instantaneous Forward Voltage – Volts
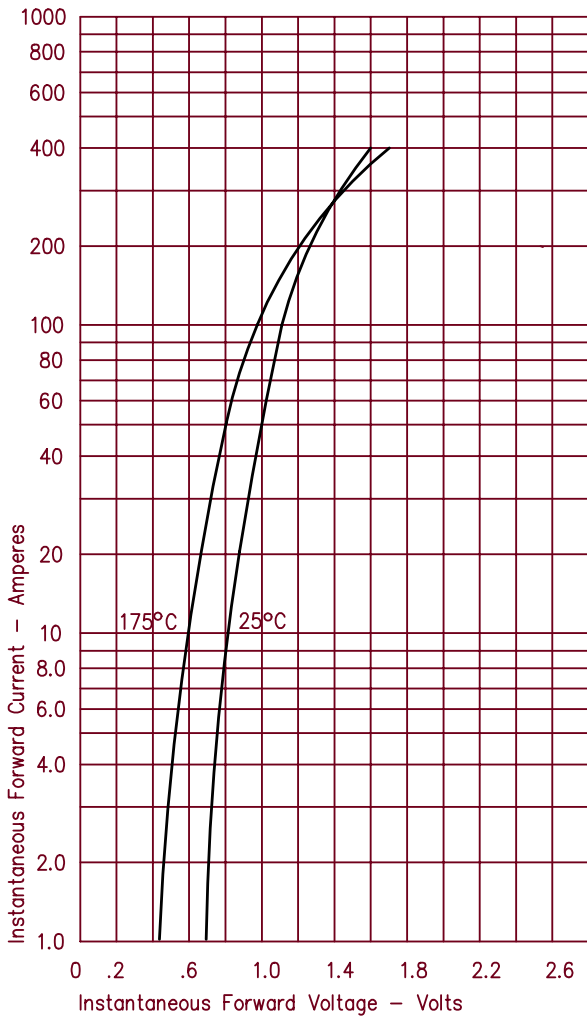
Figure 3
Typical Junction Capacitance

Junction Capacitance – pF

Reverse Voltage – Volts

Figure 4
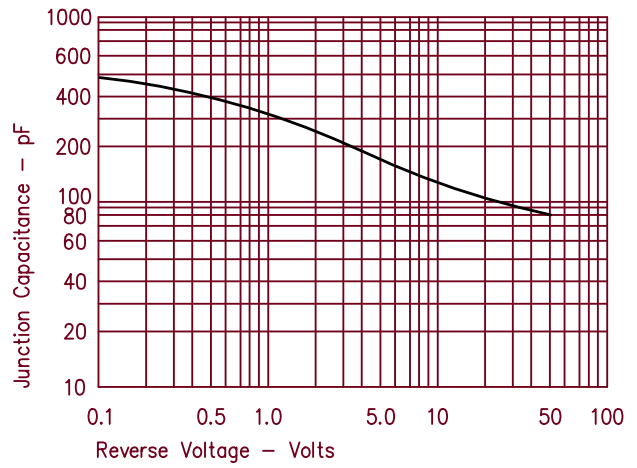Forward Current Derating

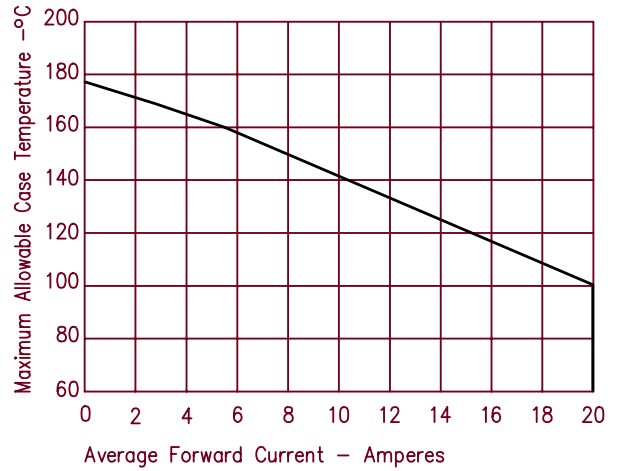Maximum Allowable Case Temperature –°C

Average Forward Current – Amperes

Figure 2
Typical Reverse Characteristics

175°C

125°C

75°C

25°C

Typical Reverse Current – μA

Reverse Voltage – Volts