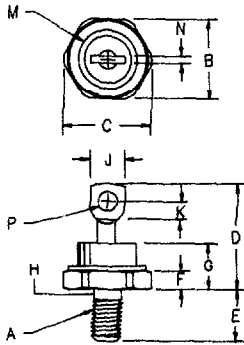


# Military Ultra Fast Rectifier

## 1N6304 - 1N6306



- Notes:
- 1/4-28
  - Full threads within 2 1/2 threads
  - For Reverse Polarity add R to Part Number  
Standard Polarity: Stud is Cathode  
Reverse Polarity: Stud is Anode

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	.669	.688	16.99	17.48	
C	---	.793	---	20.14	
D	.750	1.00	19.05	25.40	
E	.422	.453	10.72	11.51	
F	.115	.200	2.92	5.08	
G	---	.450	---	11.43	
H	.220	.249	5.59	6.32	2
J	---	.375	---	9.53	
K	.156	---	3.97	---	
M	---	.667	---	16.94	Dia
N	---	.080	---	2.03	
P	.140	.175	3.56	4.45	Dia

### D0203AB (D05)

Microsemi Catalog Number	Working Peak Reverse Voltage	Peak Reverse Voltage
1N6304*	50V	50V
1N6305*	100V	100V
1N6306*	150V	150V

\*Add Suffix R For Reverse Polarity

- Available in JAN, JANTX, JANTXV
- Mil-S-19500/550
- Ultra Fast Recovery Rectifier
- 70 Amps current rating
- 800 Amps surge rating
- VRRM 50 to 150 Volts

#### Electrical Characteristics

Average forward current	I <sub>F(AV)</sub> 70 Amps	T <sub>C</sub> = 100°C, Square wave, R <sub>θJC</sub> = 0.8°C/W
Maximum surge current	I <sub>FSM</sub> 800 Amps	8.3 ms, half sine T <sub>C</sub> = 55°C
Max peak forward voltage	V <sub>FM</sub> .975 Volts	I <sub>FM</sub> = 70A; T <sub>J</sub> = 25°C*
Max peak forward voltage	V <sub>FM</sub> 1.18 Volts	I <sub>FM</sub> = 150A; T <sub>J</sub> = 25°C*
Max peak forward voltage	V <sub>FM</sub> .84 Volts	I <sub>FM</sub> = 70A; T <sub>J</sub> = 150°C*
Max peak reverse current	I <sub>RM</sub> 25 μA	V <sub>RRM</sub> , T <sub>J</sub> = 25°C
Max peak reverse current	I <sub>RM</sub> 30 mA	V <sub>RRM</sub> , T <sub>J</sub> = 150°C*
Max reverse recovery time	t <sub>RR</sub> 50 ns	I <sub>F</sub> = .5A, I <sub>R</sub> = 1A, I(REC) = .25A, di/dt = 85A/μs
Typical reverse recovery time	t <sub>RR</sub> 30 ns	I <sub>F</sub> = .5A, I <sub>R</sub> = 1A, I(REC) = .25A, di/dt = 85A/μs
Max reverse recovery time	t <sub>RR</sub> 60 ns	70A, 130A/μs, T <sub>J</sub> = 25°C
Max junction capacitance	C <sub>J</sub> 600 pF	V <sub>R</sub> = 10V, f = 1Mhz, T <sub>J</sub> = 25°C

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

#### Thermal and Mechanical Characteristics

Storage temp range	T <sub>STG</sub>	-65°C to 175°C
Operating junction temp range	T <sub>J</sub>	-65°C to 175°C
Max thermal resistance	R <sub>θJC</sub>	0.8°C/W Junction to case
Typical thermal resistance	R <sub>θJC</sub>	0.75°C/W Junction to case
Max mounting torque		30 inch pounds maximum
Weight		.54 ounces (15.3 grams) typical

**Microsemi Corp.**  
**Colorado**

PH: 303-469-2161  
FAX: 303-466-3775

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# 1N6304 — 1N6306

Figure 1  
Typical Forward Characteristics

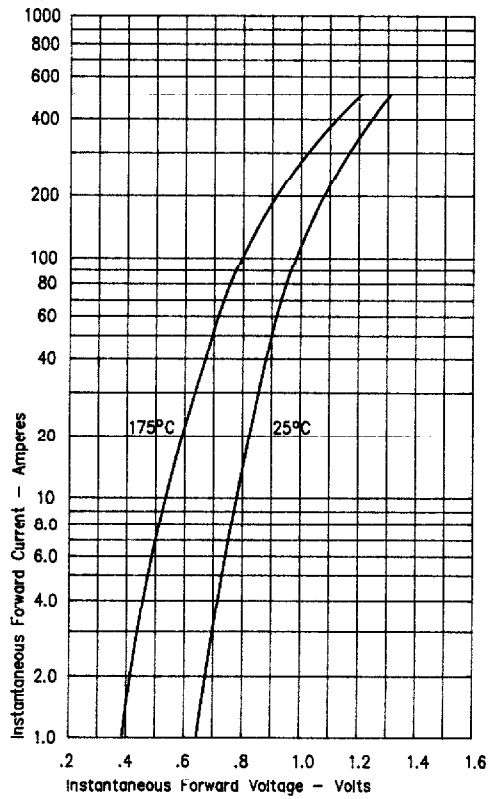


Figure 3  
Typical Junction Capacitance

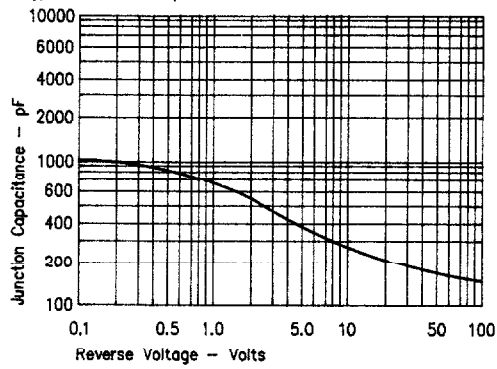


Figure 4  
Forward Current Derating

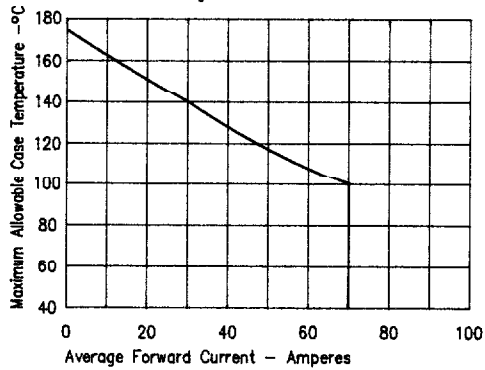


Figure 2  
Typical Reverse Characteristics

