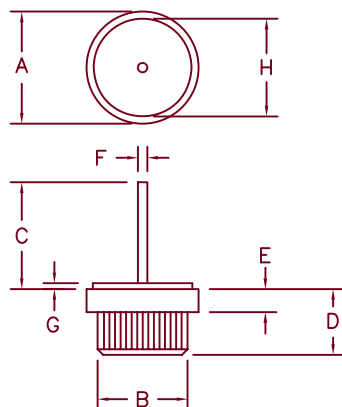


Ultra Fast Recovery Rectifier UFR30PF & UFR31PF



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	.590	.630	15.0	16.0	Dia.
B	.499	.510	12.6	13.0	Dia.
C	.600	—	15.2	—	
D	.350	.370	8.90	9.40	
E	.090	.130	2.28	3.30	
F	.045	.053	1.14	1.35	Dia.
G	.030	.035	.762	.900	
H	.500	.510	12.7	13.0	Dia.

Microsemi Catalog
Number

Repetitive Peak
Reverse Voltage

Transient Peak
Reverse Voltage

UFR3010PF*
UFR3015PF*
UFR3020PF*
UFR3130PF*
UFR3140PF*
UFR3150PF*

100V
150V
200V
300V
400V
500V

100V
150V
200V
300V
400V
500V

- Ultra Fast Recovery
- 175°C Junction Temperature
- t_{RR} 35 to 50 nsec Maximum
- High Reliability
- 30 Amps Current Rating
- V_{RRM} 100 to 500V

*Add Suffix R for Reverse Polarity

Electrical Characteristics

	UFR30PF UFR31PF		
Average forward current	$I_F(AV)$ 30A	30A	Square wave
Case Temperature (standard polarity)	T_C 148°C	139°C	$R_{\theta JC} = 1.0^\circ C/W$
Case Temperature (reverse polarity)	T_C 127°C	110°C	$R_{\theta JC} = 1.8^\circ C/W$
Maximum surge current	I_{FSM} 500A	400A	8.3 ms, half sine, $T_J = 175^\circ C$
Max peak forward voltage	V_{FM} .975V	1.25V	$I_{FM} = 30A: T_J = 25^\circ C^*$
Max reverse recovery time	t_{RR} 35 ns	50 ns	1/2A, 1A, 1/4A, $T_J = 25^\circ C$
Max peak reverse current	I_{RM} —1.0 mA—	—	$V_{RRM}, T_J = 125^\circ C$
Max peak reverse current	I_{RM} —15 μA —	—	$V_{RRM}, T_J = 25^\circ C$
Typical Junction Capacitance	C_J 140 pF	115 pF	$V_R = 10V, f = 1Mhz, T_J = 25^\circ C$

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

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	-55°C to 175°C
Operating junction temp range	T_J	-55°C to 175°C
Max thermal resistance (standard polarity)	$R_{\theta JC}$	1.0°C/W
Max thermal resistance (reverse polarity)	$R_{\theta JC}$	1.8°C/W
Typical thermal resistance	$R_{\theta CS}$	0.4°C/W
Weight		0.3 ounce (9.0 grams) typical



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05-07-07 Rev. 2

UFR30PF

Figure 1
Typical Forward Characteristics

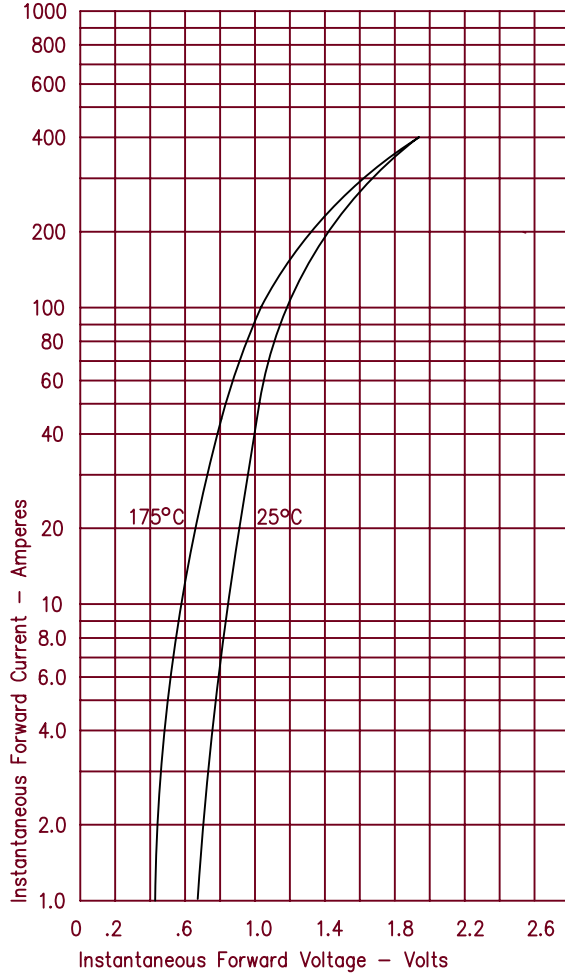


Figure 2
Typical Reverse Characteristics

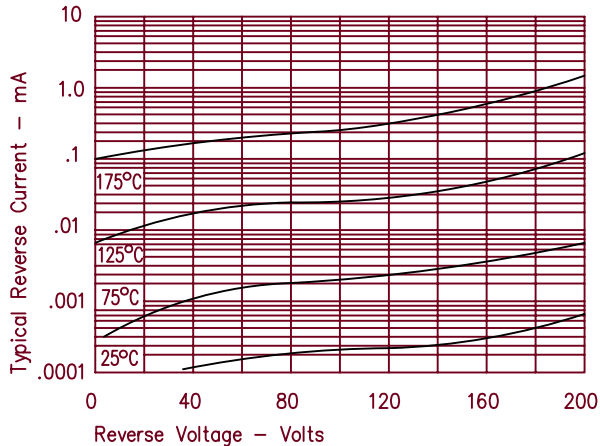


Figure 3
Typical Junction Capacitance

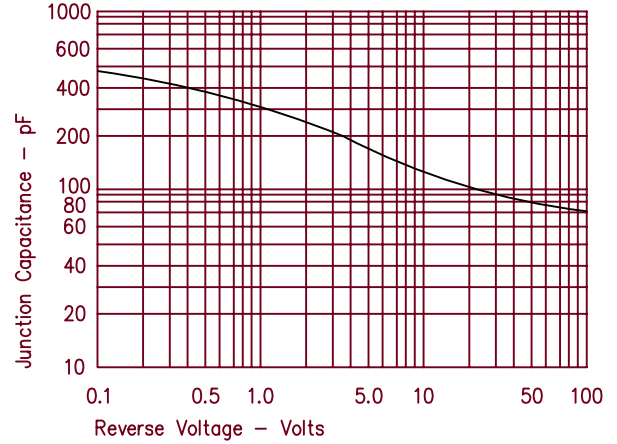


Figure 4
Forward Current Derating - Standard Polarity

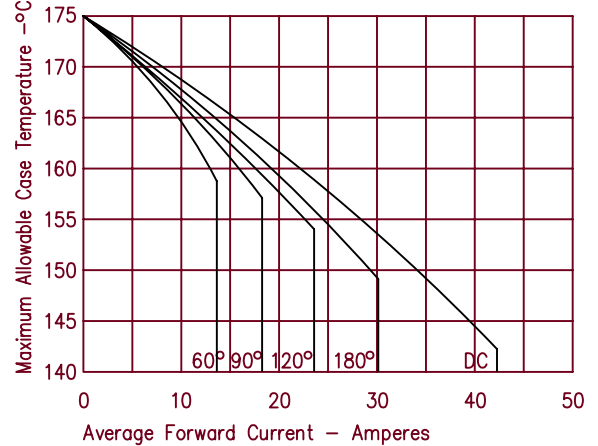
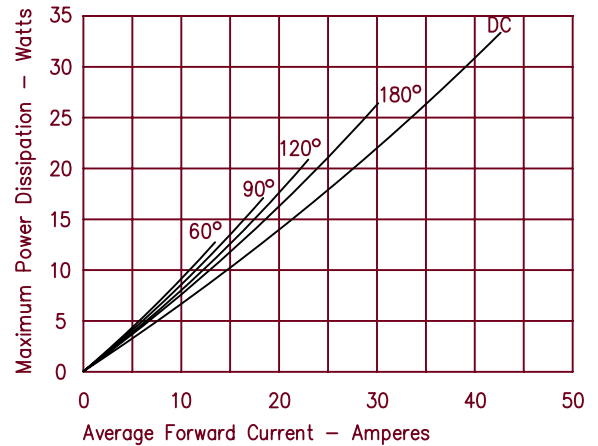


Figure 5
Maximum Forward Power Dissipation - Standard Polarity



UFR30PF

Figure 6

Forward Current Derating – Reverse Polarity

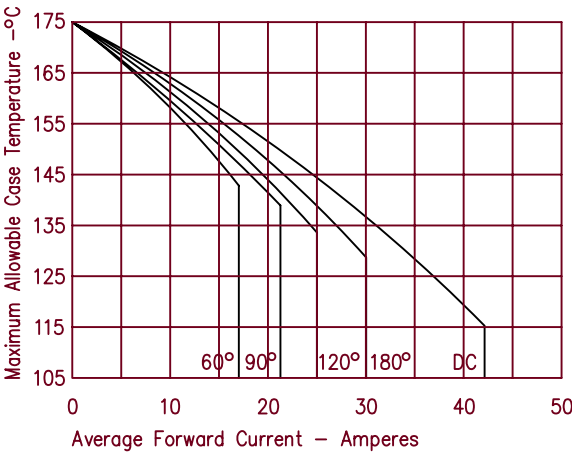
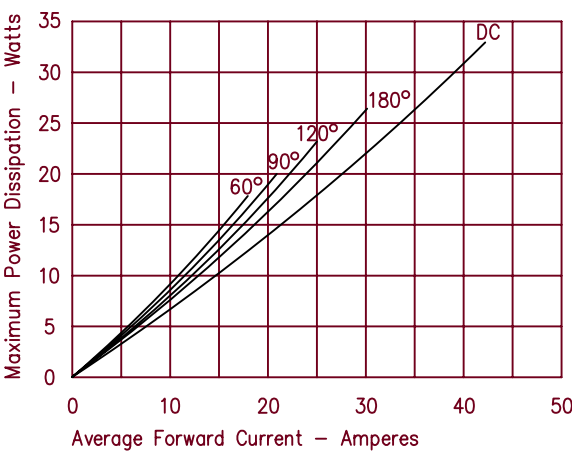


Figure 7

Maximum Forward Power Dissipation – Reverse Polarity



UFR31PF

Figure 1
Typical Forward Characteristics

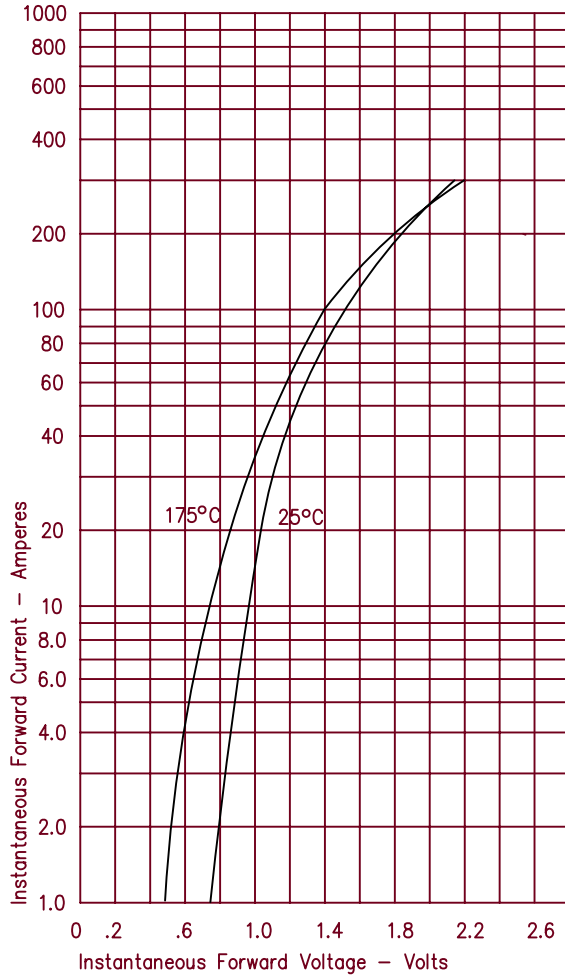


Figure 2
Typical Reverse Characteristics

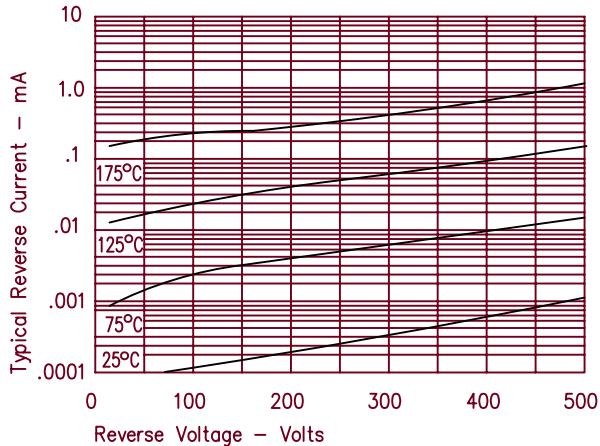


Figure 3
Typical Junction Capacitance

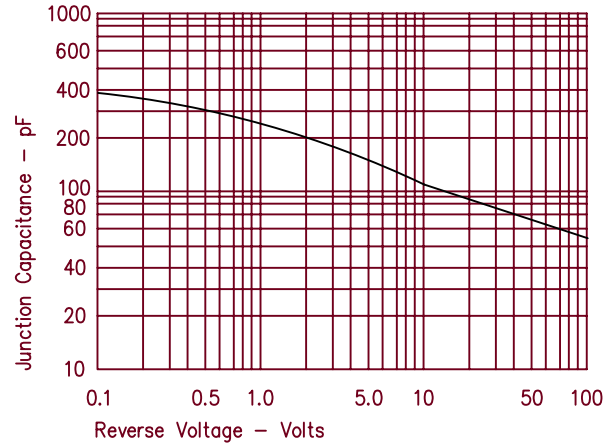


Figure 4
Forward Current Derating - Standard Polarity

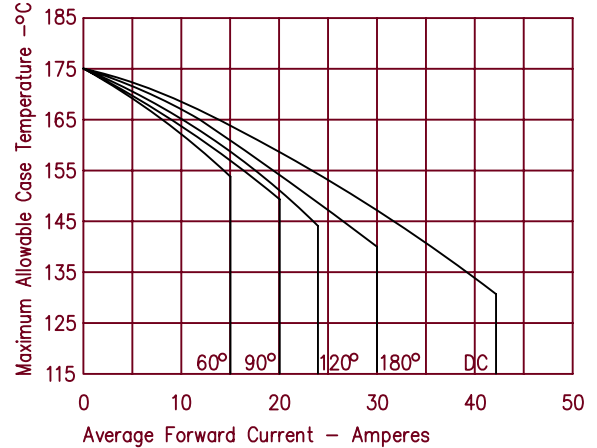
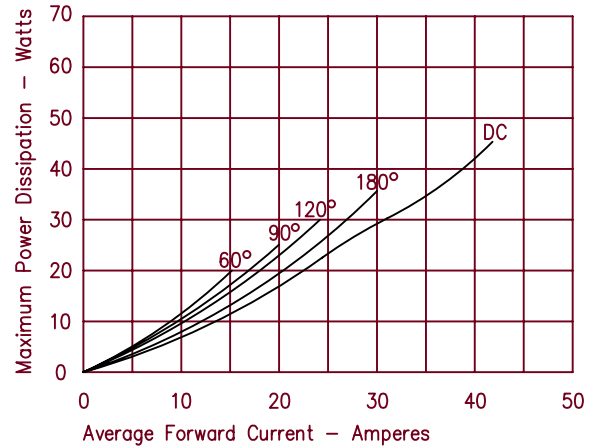


Figure 5
Maximum Forward Power Dissipation - Reverse Polarity



UFR31PF

Figure 6
Forward Current Derating – Reverse Polarity

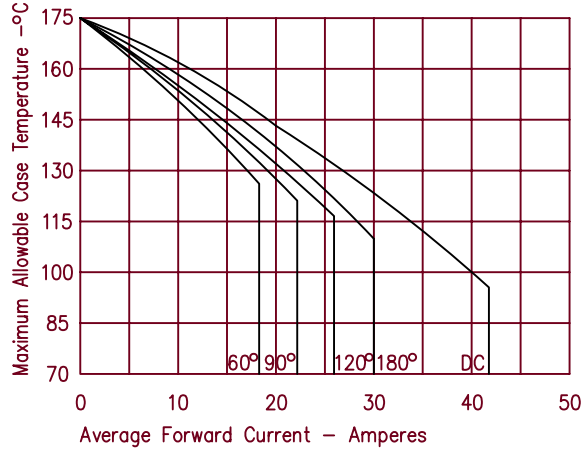


Figure 7
Maximum Forward Power Dissipation – Standard Polarity

