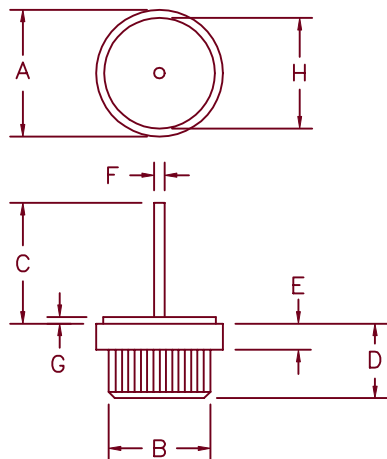


# Ultra Fast Recovery Rectifier UFR30PF & UFR31PF



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*	100V	100V
UFR3015PF*	150V	150V
UFR3020PF*	200V	200V
UFR3130PF*	300V	300V
UFR3140PF*	400V	400V
UFR3150PF*	500V	500V

\*Add Suffix R for Reverse Polarity

- 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

Electrical Characteristics			
	UFR30PF		UFR31PF
Average forward current	$I_F(AV)$	30A	30A
Case Temperature (standard polarity)	$T_C$	148°C	139°C
Case Temperature (reverse polarity)	$T_C$	127°C	110°C
Maximum surge current	$I_{FSM}$	500A	400A
Max peak forward voltage	$V_{FM}$	.975V	1.25V
Max reverse recovery time	$t_{RR}$	35 ns	50 ns
Max peak reverse current	$I_{RM}$	—1.0 mA—	—
Max peak reverse current	$I_{RM}$	—15 $\mu$ A—	—
Typical Junction Capacitance	$C_J$	140 pF	115 pF

Square wave  
 $R_{\theta JC} = 1.0^\circ C/W$   
 $R_{\theta JC} = 1.8^\circ C/W$   
8.3 ms, half sine,  $T_J = 175^\circ C$   
 $I_{FM} = 30A: T_J = 25^\circ C^*$   
1/2A, 1A, 1/4A,  $T_J = 25^\circ C$   
 $V_{RRM}, T_J = 125^\circ C$   
 $V_{RRM}, T_J = 25^\circ C$   
 $V_R = 10V, f = 1Mhz, T_J = 25^\circ C$

\*Pulse test: Pulse width 300  $\mu$ sec, 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

8-16-00 Rev. 1

# UFR30PF

Figure 1  
Typical Forward Characteristics

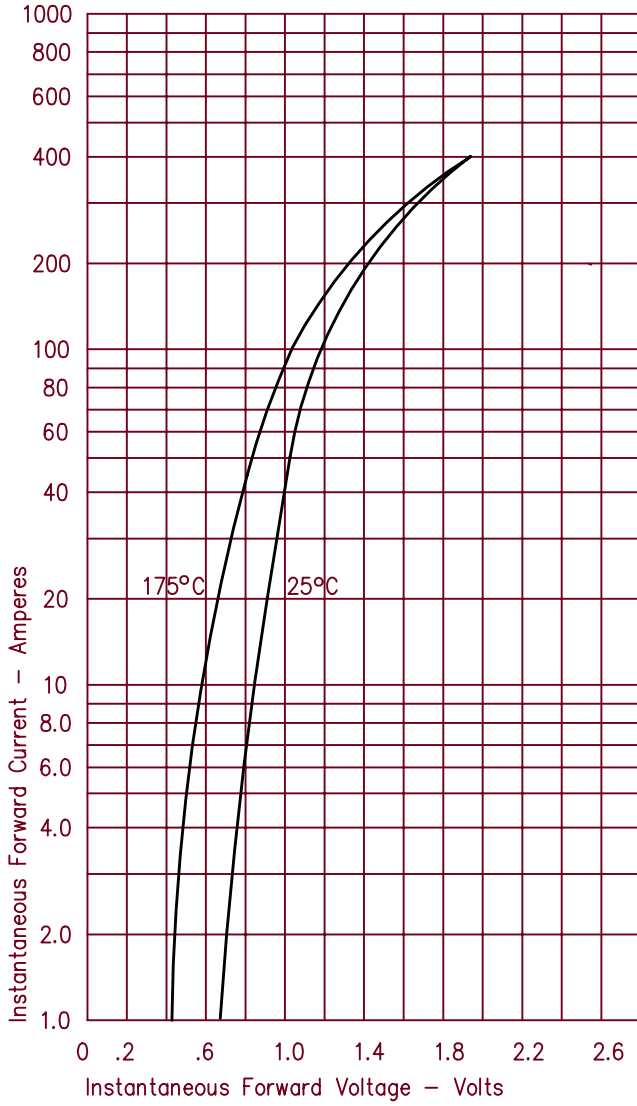


Figure 3  
Typical Junction Capacitance

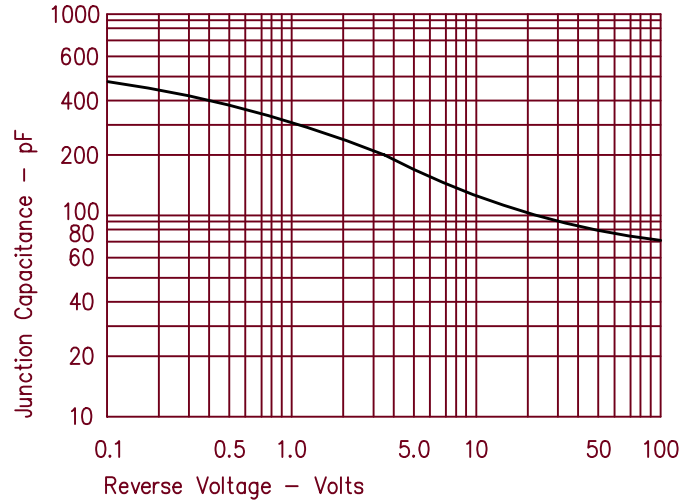


Figure 4  
Forward Current Derating - Standard Polarity

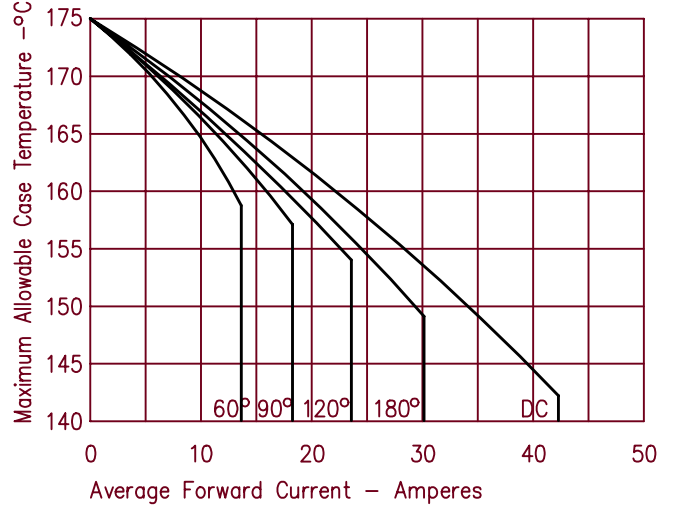


Figure 2  
Typical Reverse Characteristics

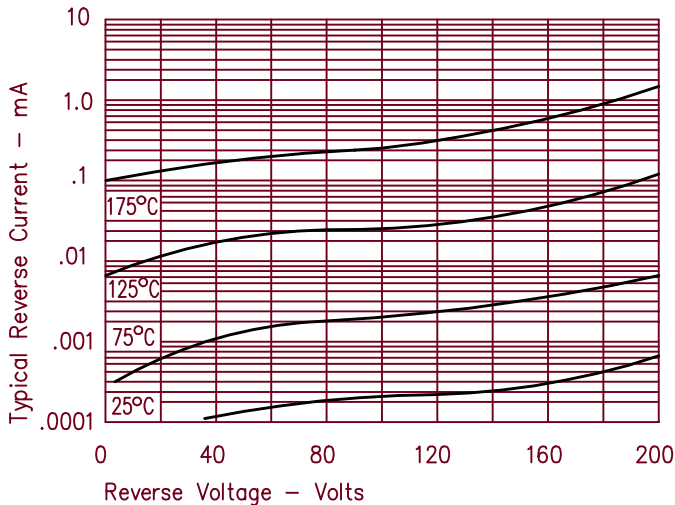
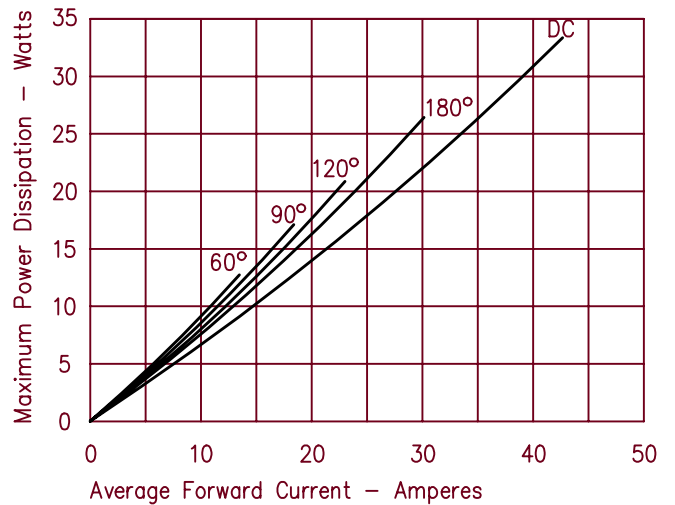


Figure 5  
Maximum Forward Power Dissipation - Standard Polarity



# UFR30PF

Figure 6  
Forward Current Derating – Reverse Polarity

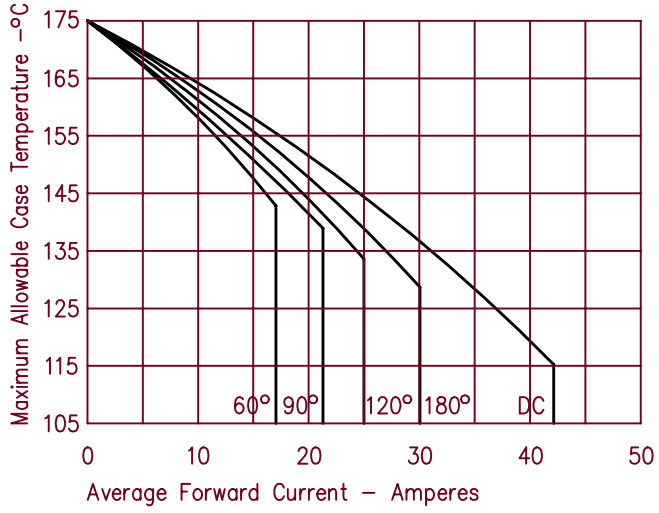
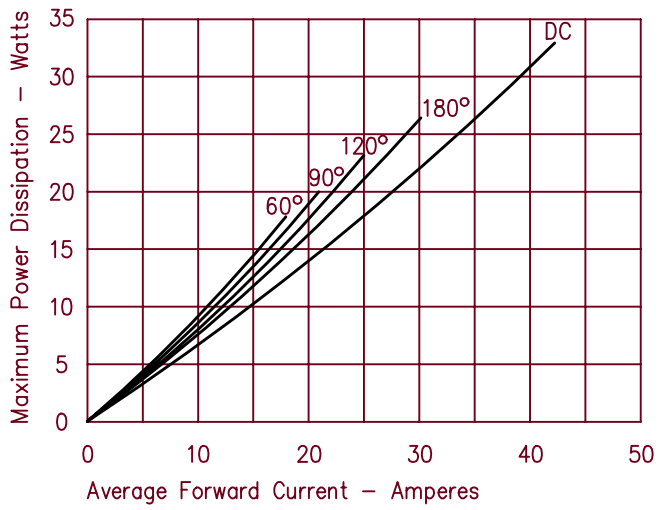


Figure 7  
Maximum Forward Power Dissipation – Reverse Polarity



# UFR31PF

Figure 1  
Typical Forward Characteristics

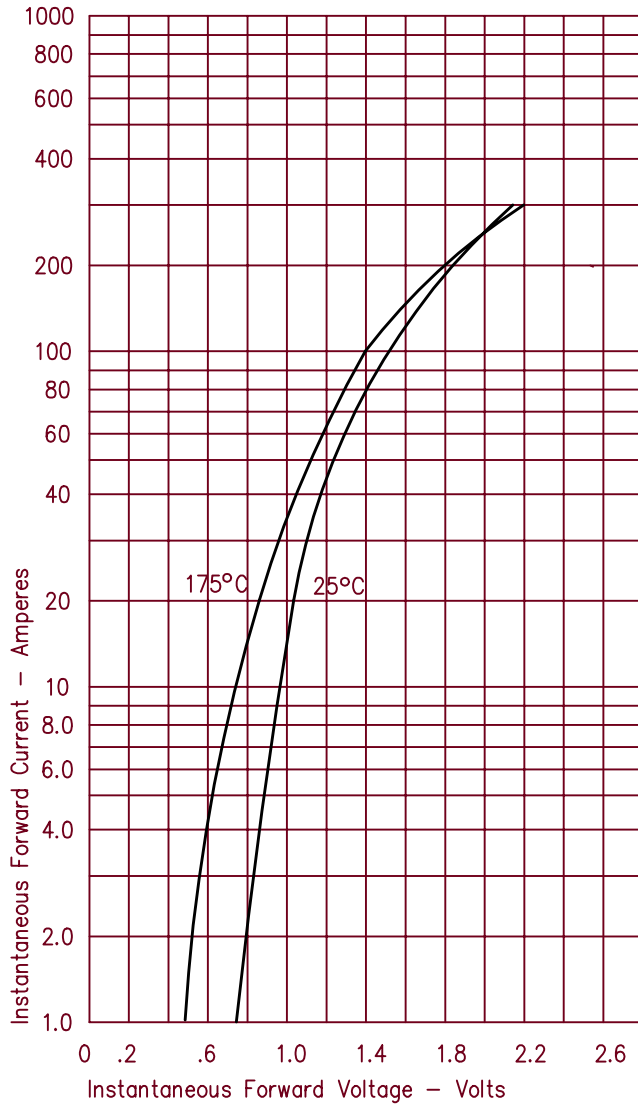


Figure 3  
Typical Junction Capacitance

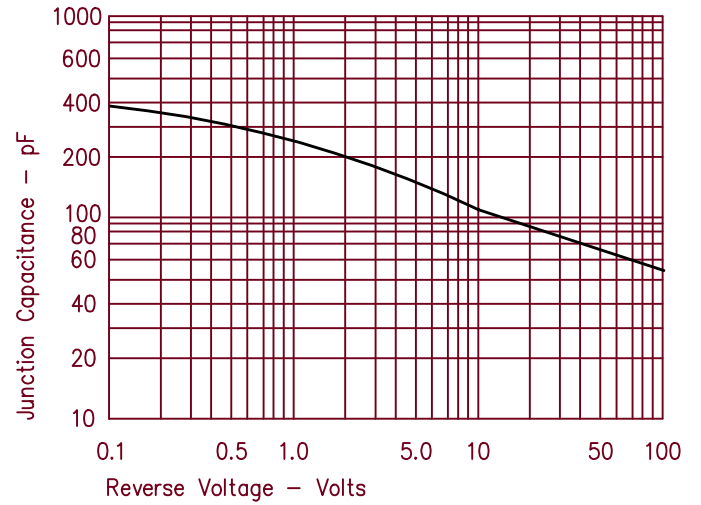


Figure 4  
Forward Current Derating - Standard Polarity

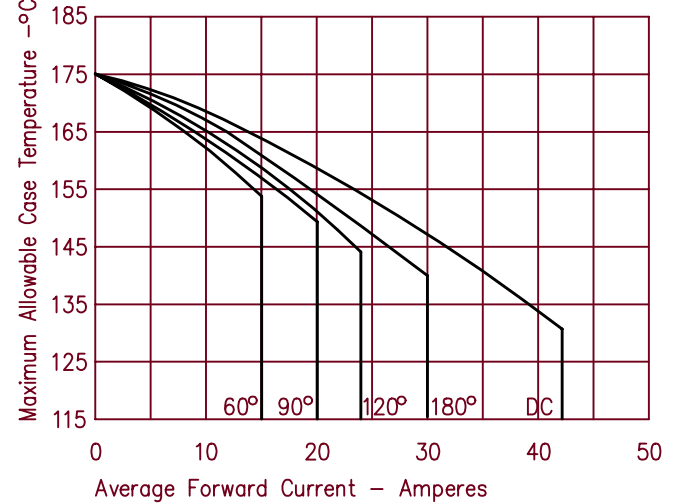


Figure 2  
Typical Reverse Characteristics

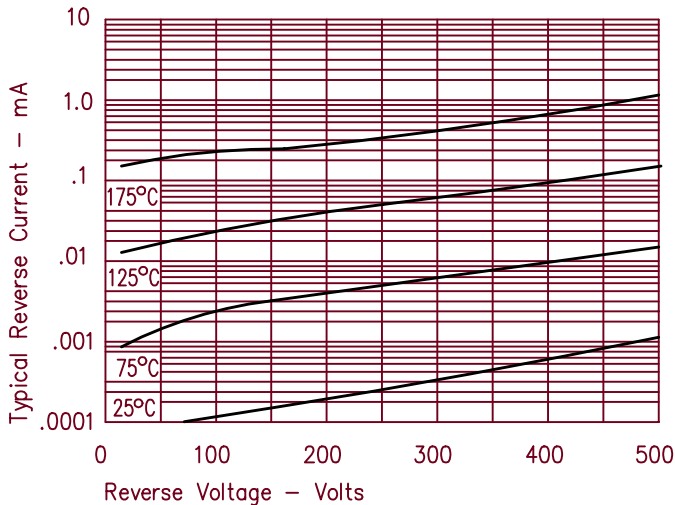
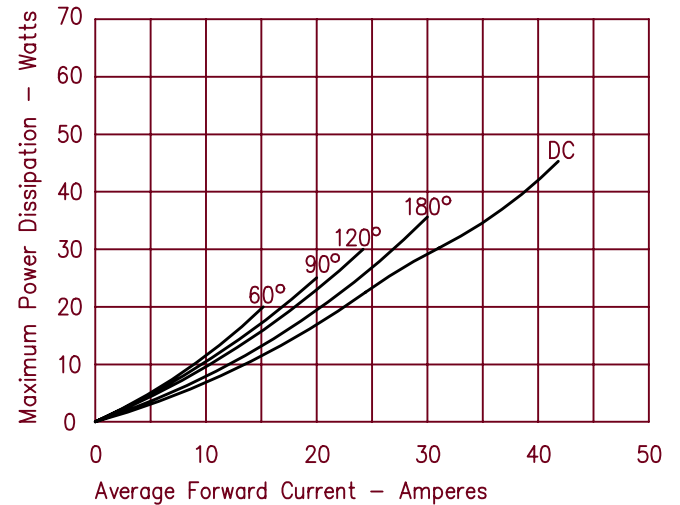


Figure 5  
Maximum Forward Power Dissipation - Reverse Polarity



# UFR31PF

Figure 6  
Forward Current Derating – Reverse Polarity

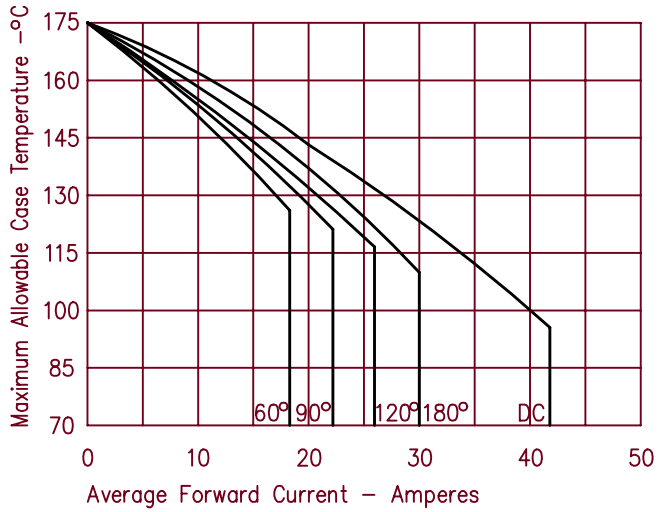


Figure 7  
Maximum Forward Power Dissipation – Standard Polarity

