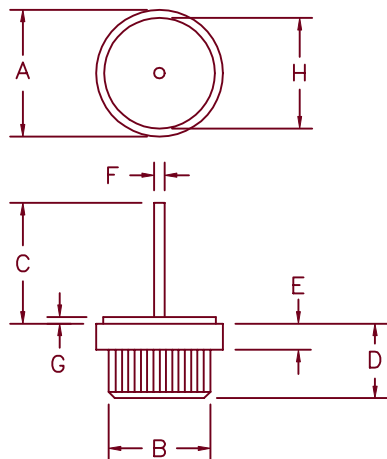


# Ultra Fast Recovery Rectifier UFR30PF & UFR31PF



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

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

Repetitive Peak  
Reverse Voltage

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

Transient Peak  
Reverse Voltage

100V  
150V  
200V  
300V  
400V  
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	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 $\mu A$ —		$V_{RRM}, T_J = 25^\circ C$
Typical Junction Capacitance	$C_J$ 140 pF	115 pF	$V_R = 10V, f = 1Mhz, T_J = 25^\circ C$

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

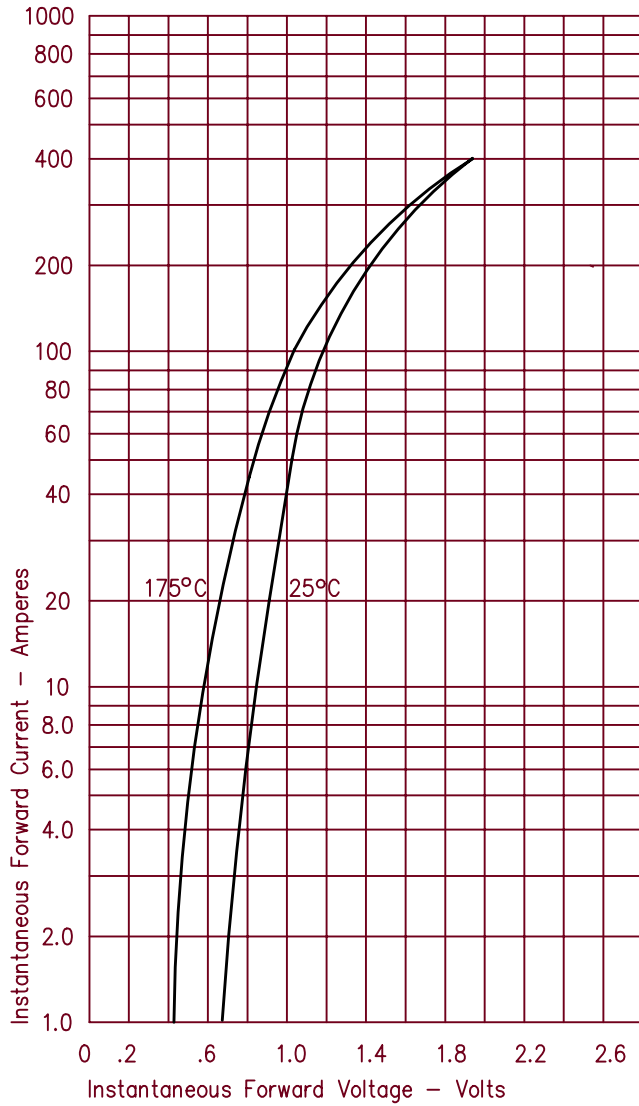


Figure 3  
Typical Junction Capacitance

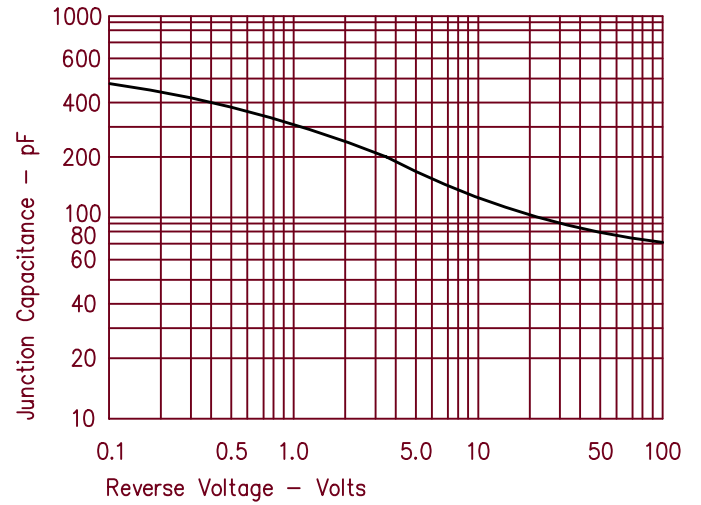


Figure 4  
Forward Current Derating - Standard Polarity

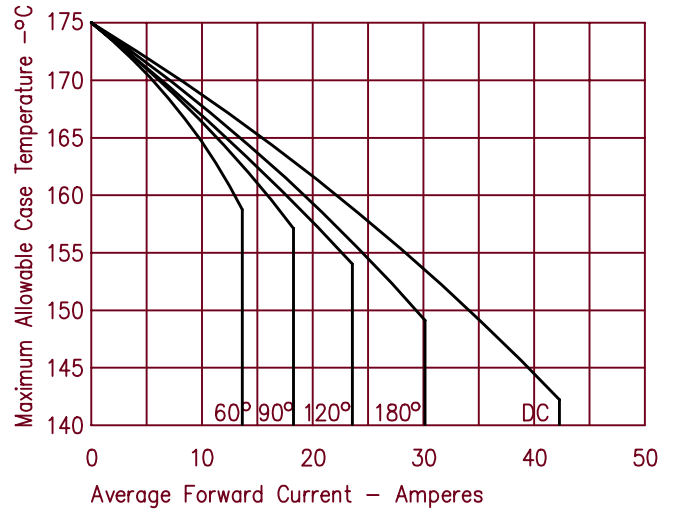


Figure 2  
Typical Reverse Characteristics

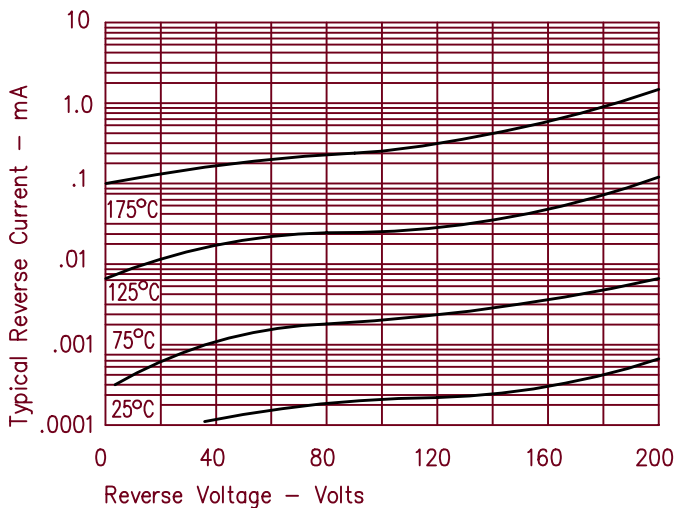
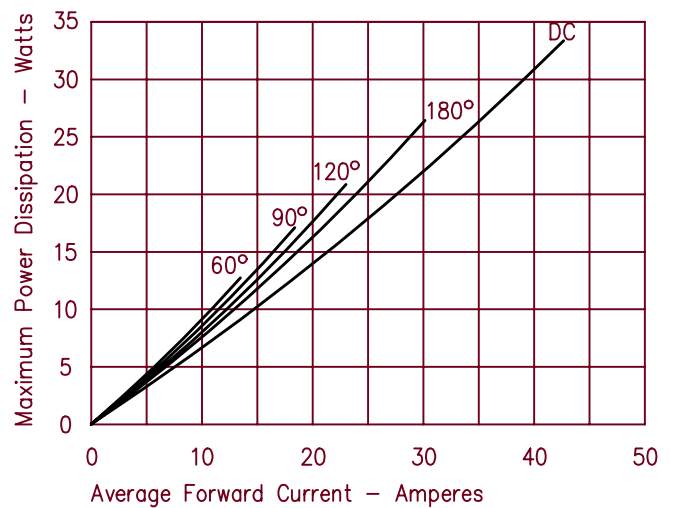


Figure 5  
Maximum Forward Power Dissipation - Standard Polarity



# UFR30PF

Figure 6  
Forward Current Derating – Reverse Polarity

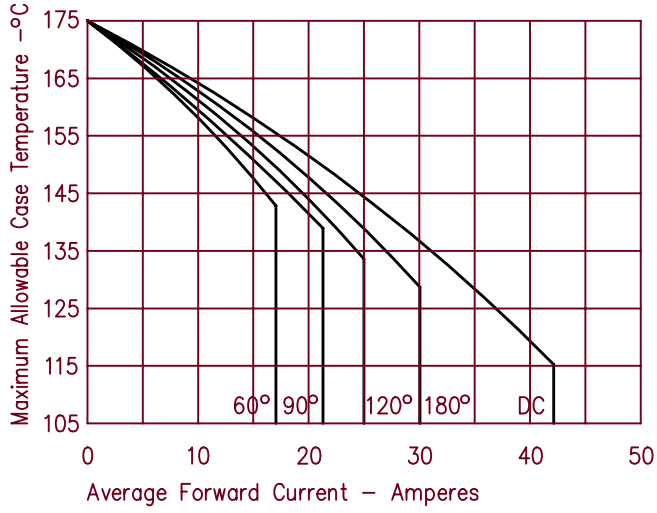
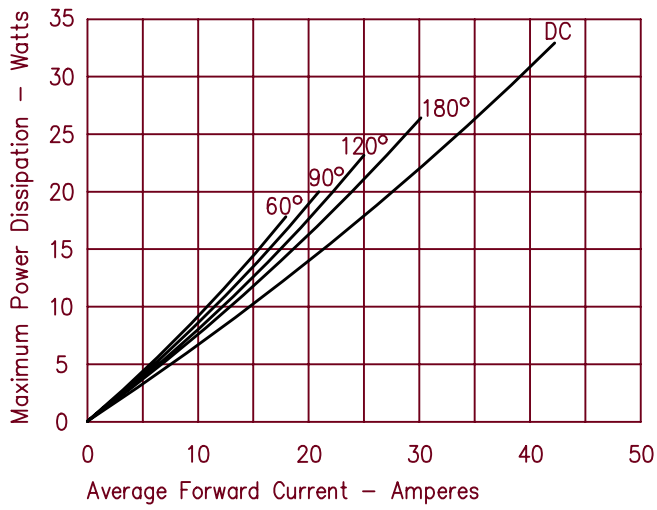


Figure 7  
Maximum Forward Power Dissipation – Reverse Polarity



# UFR31PF

Figure 1  
Typical Forward Characteristics

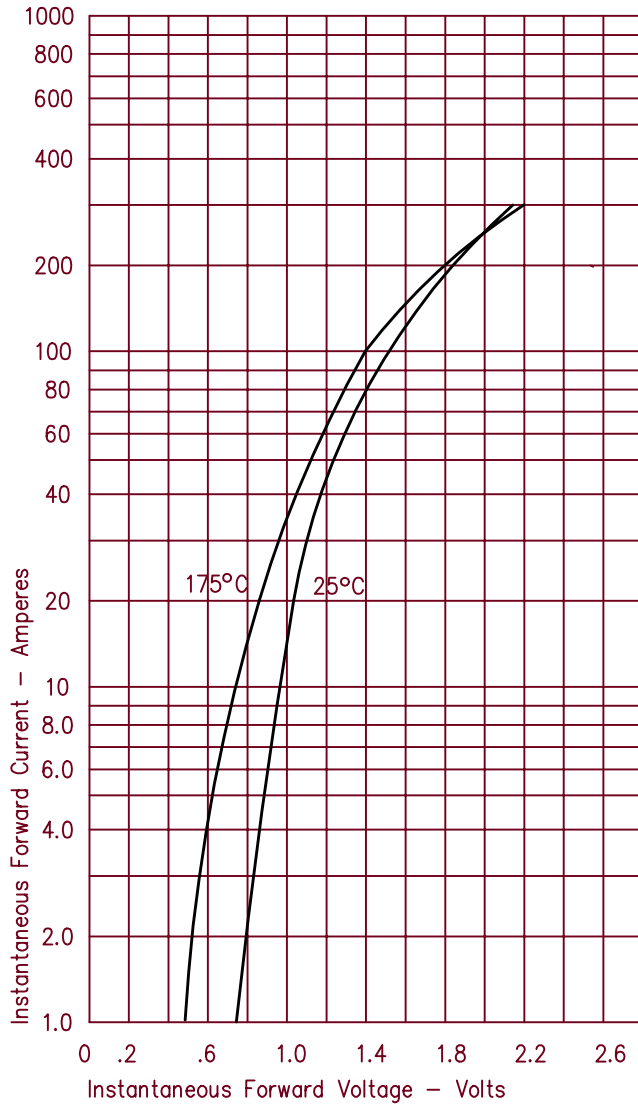


Figure 3  
Typical Junction Capacitance

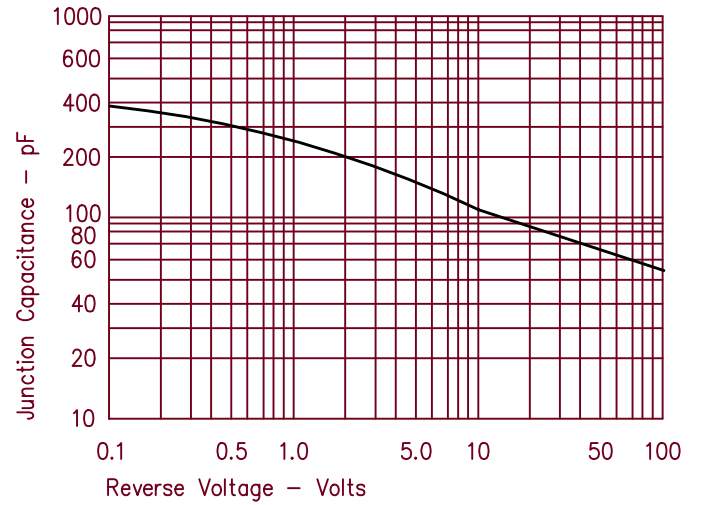


Figure 4  
Forward Current Derating - Standard Polarity

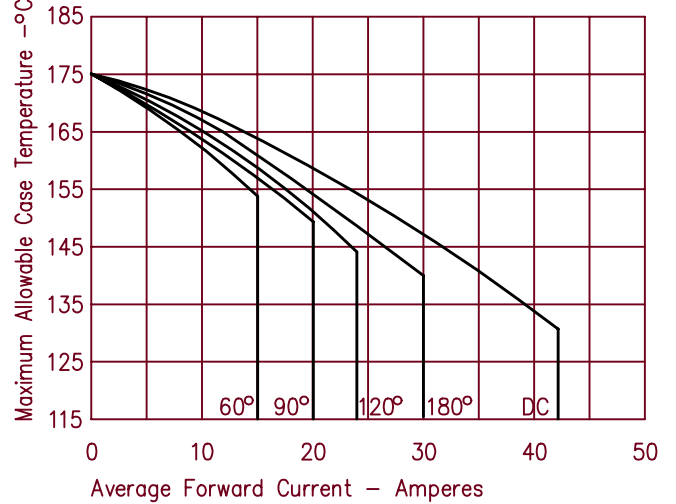


Figure 2  
Typical Reverse Characteristics

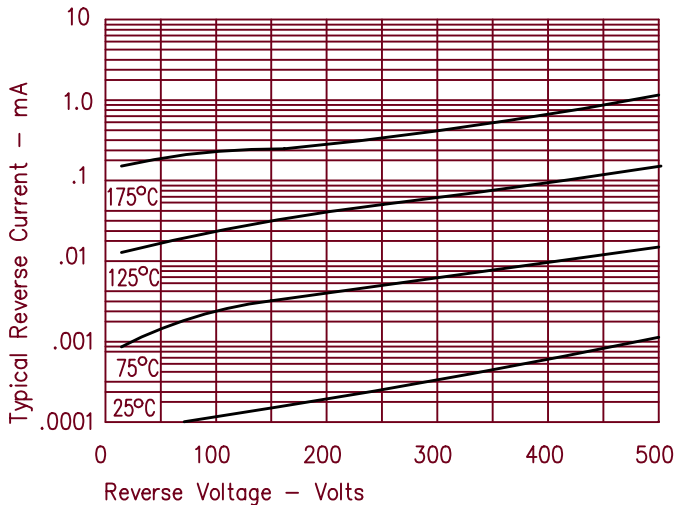
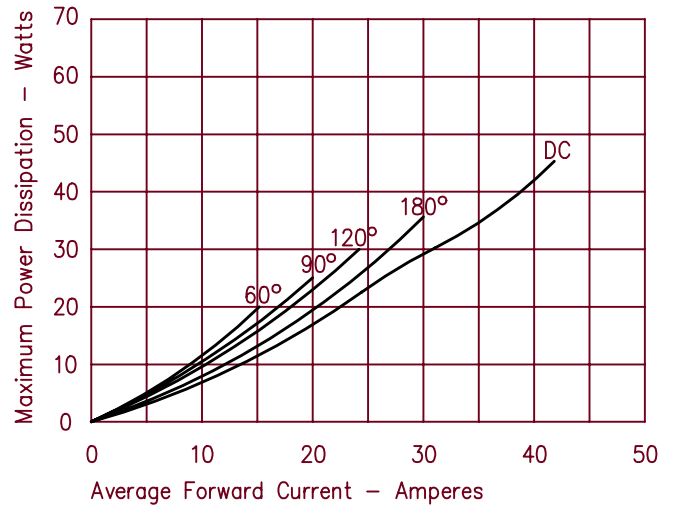


Figure 5  
Maximum Forward Power Dissipation - Reverse Polarity



# UFR31PF

Figure 6  
Forward Current Derating – Reverse Polarity

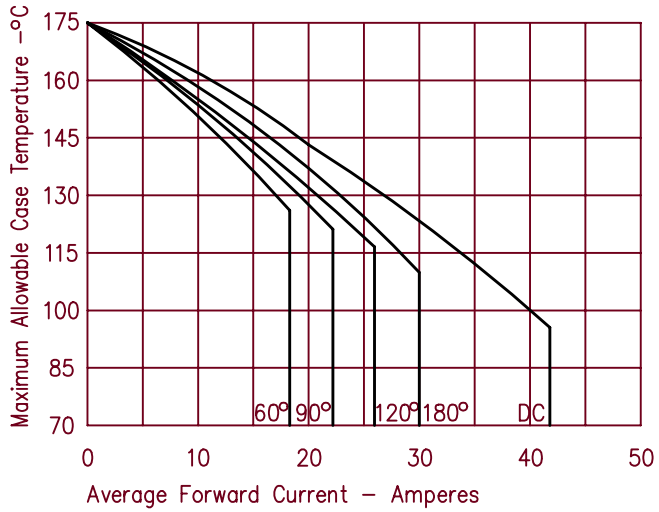


Figure 7  
Maximum Forward Power Dissipation – Standard Polarity

