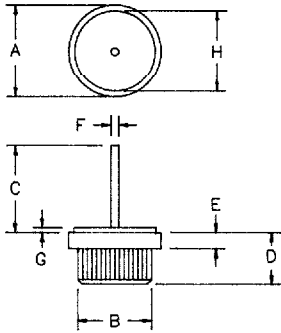


Ultra Fast Recovery Rectifier UFR30PF & UFR31PF



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	
UFR3005PF*	50V	50V	<ul style="list-style-type: none"> • Ultra Fast Recovery • 175°C Junction Temperature • t_{RR} 35 to 50 nsec Maximum • High Reliability • 30 Amps Current Rating • V_{RRM} 50 to 500V
UFR3010PF*	100V	100V	
UFR3015PF*	150V	150V	
UFR3020PF*	200V	200V	
UFR3120PF*	200V	200V	
UFR3130PF*	300V	300V	
UFR3140PF*	400V	400V	
UFR3150PF*	500V	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, $T_J = 25^\circ C$
Typical reverse recovery time	t_{RR}	26 ns	36 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}	-40°C to 175°C
Operating junction temp range	T_J	-40°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
Typical Weight		0.3 ounce (9.0 grams) typical

Microsemi Corp.
Colorado

UFR30PF

Figure 1
Typical Forward Characteristics

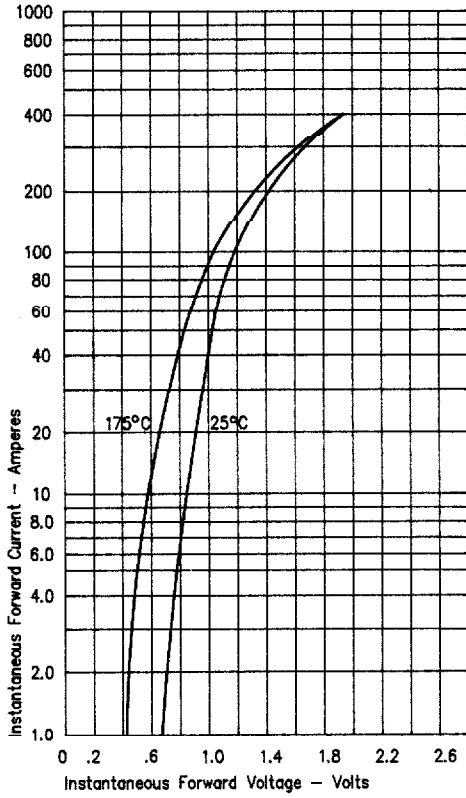


Figure 3
Typical Junction Capacitance

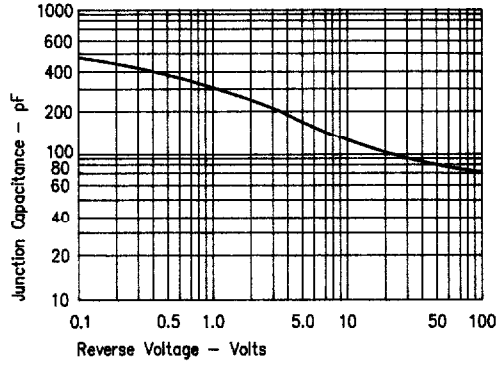


Figure 4
Forward Current Derating - Standard Polarity

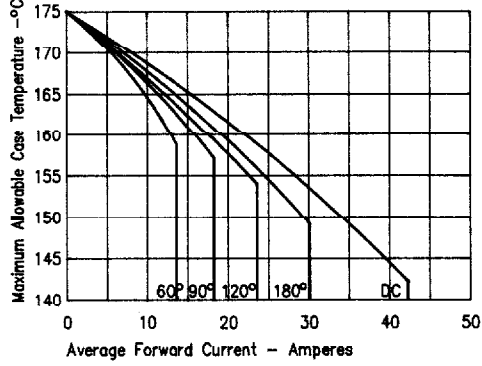


Figure 2
Typical Reverse Characteristics

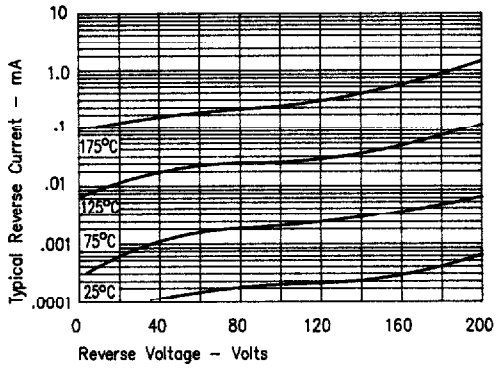
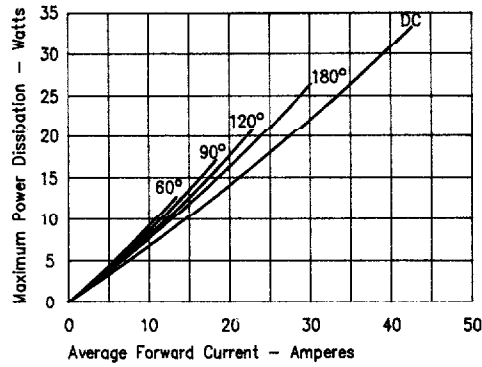


Figure 5
Maximum Forward Power Dissipation - Standard Polarity



UFR30PF

Figure 6
Forward Current Derating - Reverse Polarity

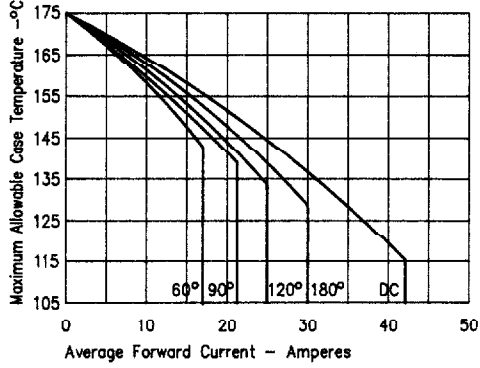
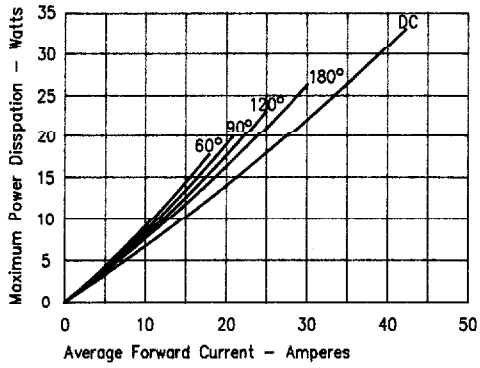


Figure 7
Maximum Forward Power Dissipation - Reverse Polarity



UFR31PF

Figure 1
Typical Forward Characteristics

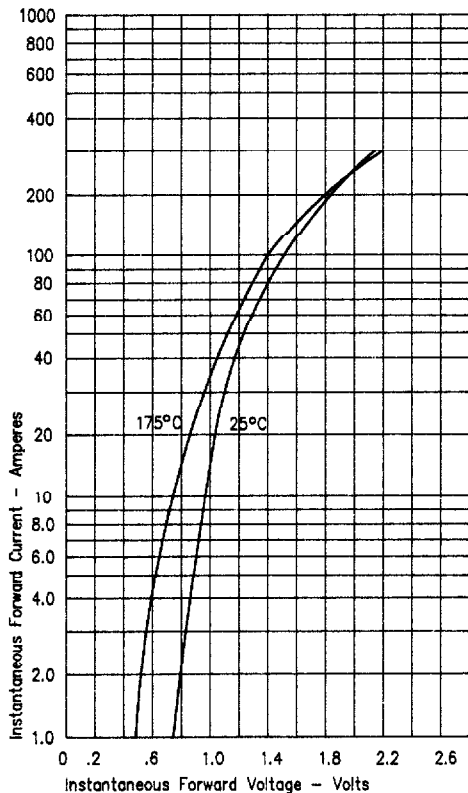


Figure 3
Typical Junction Capacitance

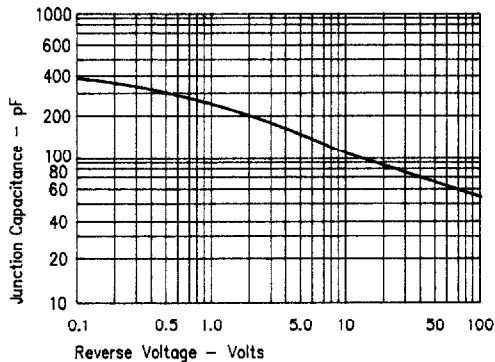


Figure 4
Forward Current Derating - Standard Polarity

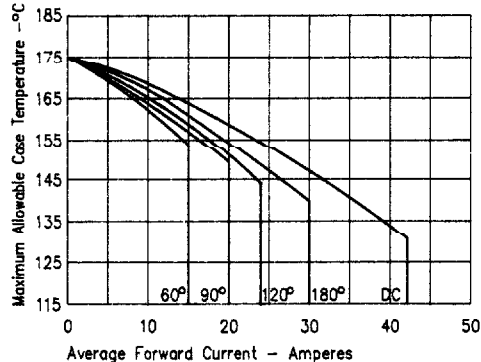


Figure 2
Typical Reverse Characteristics

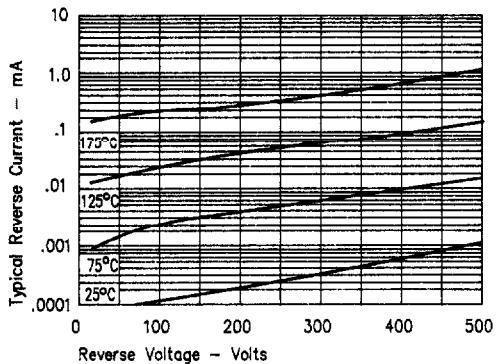
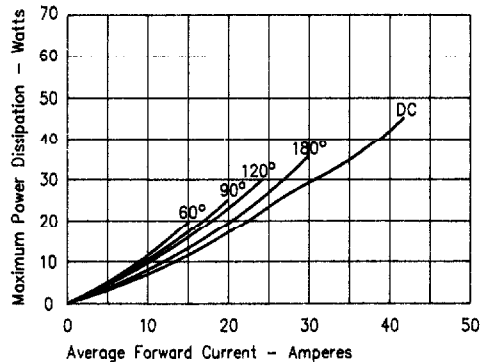


Figure 5
Maximum Forward Power Dissipation - Reverse Polarity



UFR31PF

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Figure 6
Forward Current Derating - Reverse Polarity

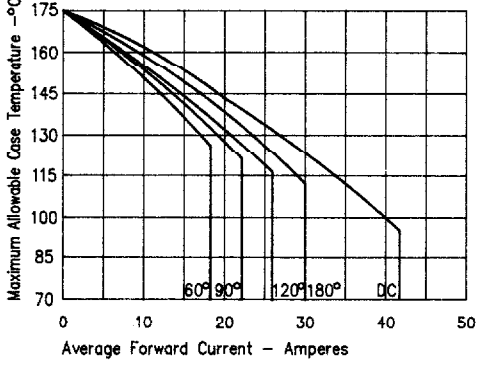


Figure 7
Maximum Forward Power Dissipation - Standard Polarity

