DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

UFR7010-UFR7020, UFR7120-UFR7150, UFR7250-UFR7280

ULTRA FAST RECOVERY RECTIFIERS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	UFR									
		7010	7015	7020	7120	7130	7140	7150	7250	7260	7270	7280
Working peak reverse voltage	V_{RWM}	100V	150V	200V	200V	300V	400V	500V	500V	600V	700V	800V
Peak repetitive reverse voltage	V_{RRM}	100V	150V	200V	200V	300V	400V	500V	500V	600V	700V	800V
Operating and storage temperature range	T_J, T_{stg}	-65 to +175°C										
Maximum thermal resistance	$R_{\Theta JC}$	0.8°C/W junction to case										
Typical thermal resistance	$R_{\Theta CS}$	0.2°C/W case to sink										
Mounting torque		25-30 in. pounds										
Weight		0.54 ounces (15.3 grams) typical										

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	UFR7010 UFR7015 UFR7020	UFR7120 UFR7130 UFR7140 UFR7150	UFR7250 UFR7260 UFR7270 UFR7280	Condition
Average forward current	$I_{F(AV)}$	70A	70A	70A	Square wave, $R_{\Theta JC}$ = 0.8°C/W
Case temperature	T_C	125°C	110°C	105°C	
Maximum surge current	I_{FSM}	1000A	800A	700A	8.3ms, half sine, T_J = 175°C
Maximum peak forward voltage	V_{FM}	1.150V	1.250V	1.350V	I_{FM} = 70A, T_J = 25°C*
Maximum reverse recovery time	t_{RR}	50ns	60ns	75ns	1/2A, 1A, 1/4A, T_J = 25°C
Maximum peak reverse current	I_{RM}	3.0mA			V_{RRM}, T_J = 125°C
Maximum peak reverse current	I_{RM}	25µA			V_{RRM}, T_J = 25°C
Typical junction capacitance	C_J	300pF	150pF	150pF	V_R = 10V, f = 1MHz, T_J = 25°C

*: Pulse test: pulse width 300µsec, duty cycle 2%.

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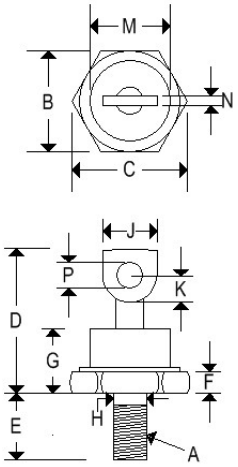
MECHANICAL CHARACTERISTICS

Case	DO-5(R)
Marking	Alpha-numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)



	DO-5(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	¼-28 UNF2A threads			
B	0.669	0.688	16.990	17.480
C	-	0.794	-	20.160
D	-	1.000	-	25.400
E	0.422	0.453	10.720	11.510
F	0115	0.200	2.920	5.080
G	-	0.450	-	11.430
H	0.220	0.249	5.580	6.320
J	0.250	0.375	6.350	9.530
K	0.156	-	3.960	-
M	-	0.667	-	16.940
N	0.030	0.080	0.760	2.030
P	0.140	0.175	3.560	4.450

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ULTRA FAST RECOVERY RECTIFIERS

UFR70

Figure 1
Typical Forward Characteristics

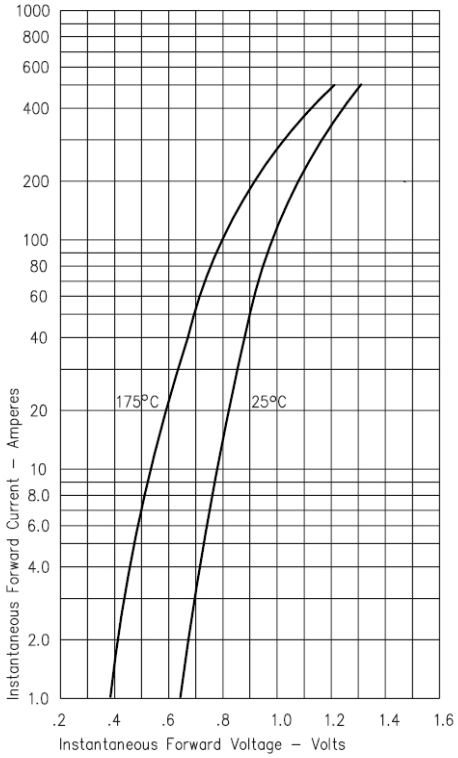


Figure 3
Typical Junction Capacitance

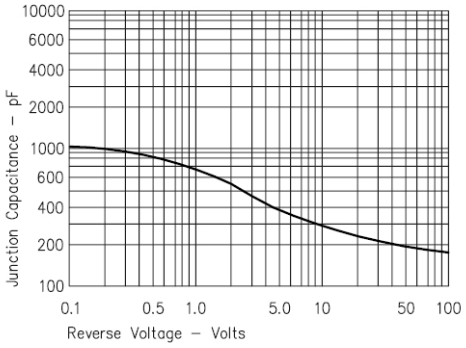


Figure 4
Forward Current Derating

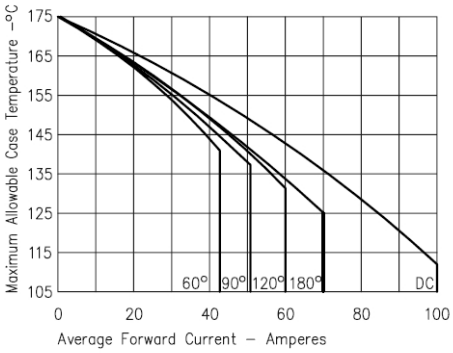


Figure 2
Typical Reverse Characteristics

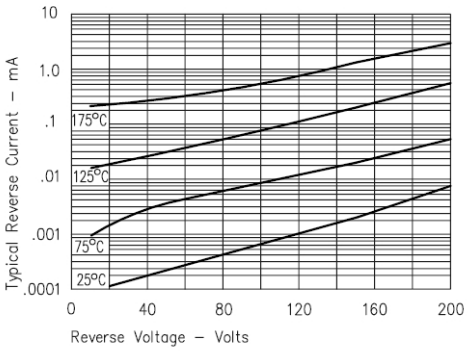
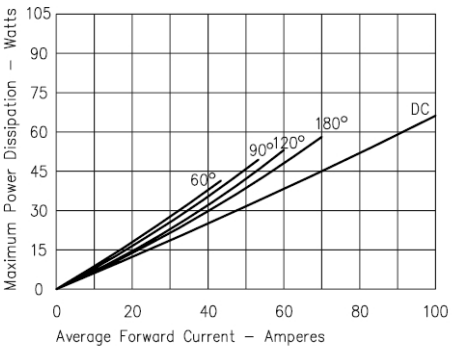


Figure 5
Maximum Forward Power Dissipation



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ULTRA FAST RECOVERY RECTIFIERS

UFR71

Figure 1
Typical Forward Characteristics

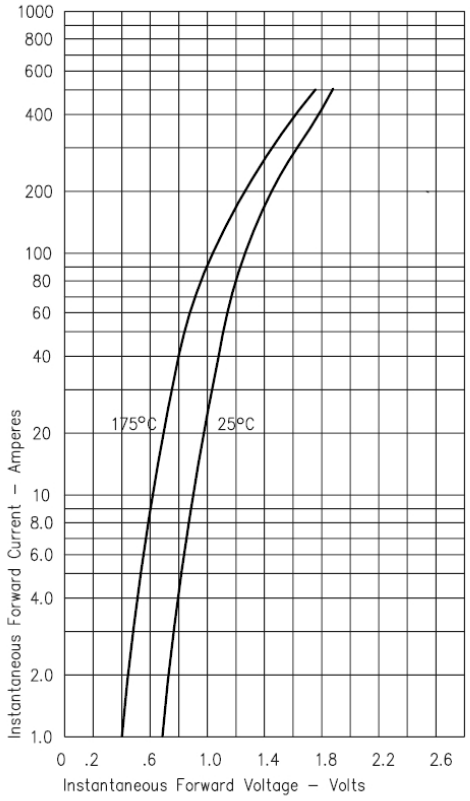


Figure 2
Typical Reverse Characteristics

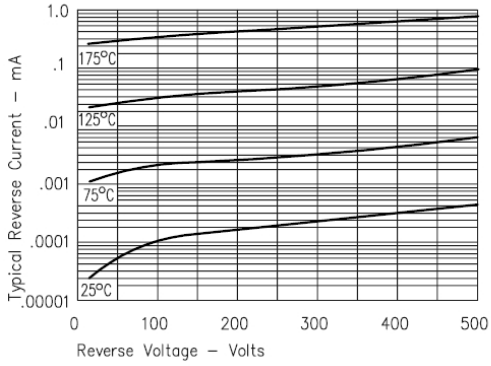


Figure 3
Typical Junction Capacitance

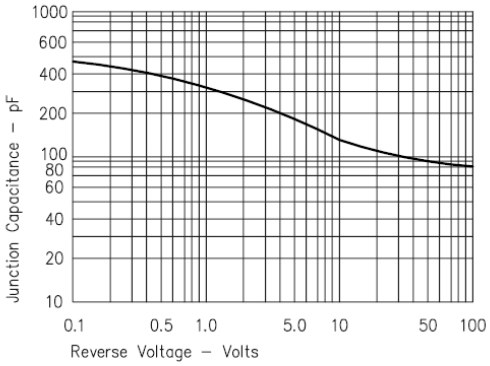


Figure 4
Forward Current Derating

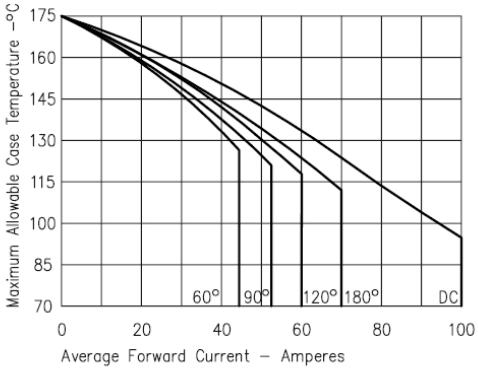
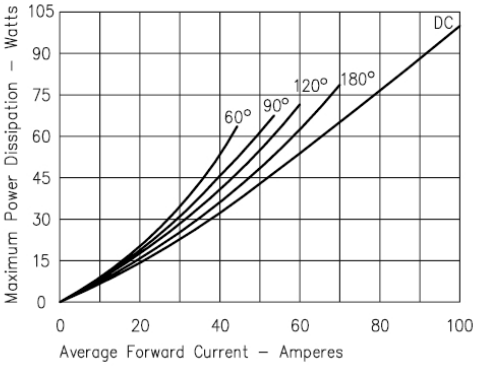


Figure 5
Maximum Forward Power Dissipation



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ULTRA FAST RECOVERY RECTIFIERS

UFR72

Figure 1
Typical Forward Characteristics

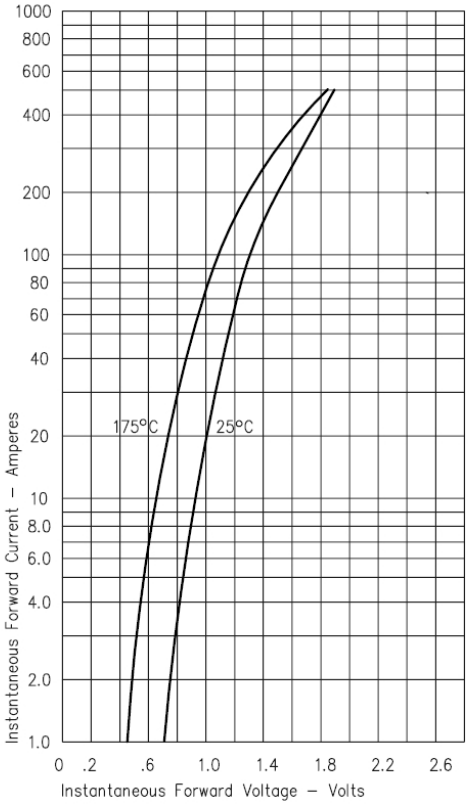

Figure 2
Typical Reverse Characteristics

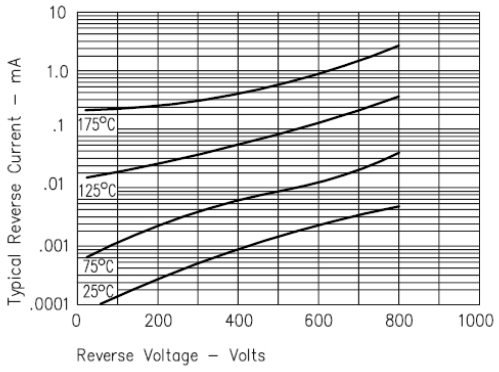

Figure 3
Typical Junction Capacitance

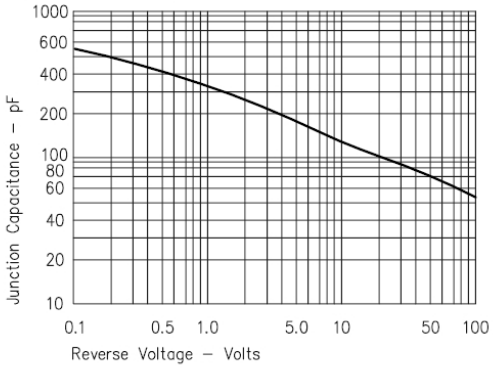

Figure 4
Forward Current Derating

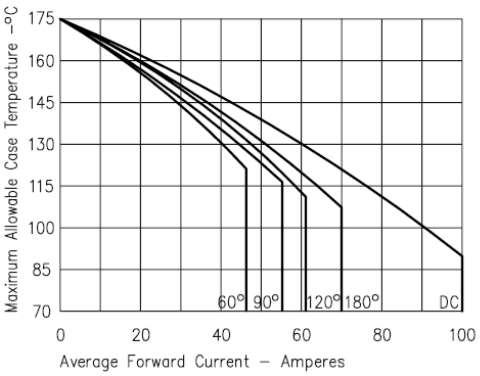

Figure 5
Maximum Forward Power Dissipation