

DIGITRON SEMICONDUCTORS

UFR10130-UFR10150

ULTRA FAST RECOVERY RECTIFIERS

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	UFR10030	UFR10040	UFR10050	Test Conditions
Working peak reverse voltage	V_{RWM}	300V	400V	500V	
Repetitive peak reverse voltage	V_{RRM}	300V	400V	500V	
Average forward current	$I_{F(AV)}$	100A			$T_C = 140^\circ\text{C}$, square wave, $R_{\theta JC} = 0.45^\circ\text{C/W}$
Maximum surge current	I_{FSM}	1600A			8.3ms, half-sine, $T_J = 175^\circ\text{C}$
Maximum peak forward voltage	V_{FM}	1.25V			$I_{FM} = 100\text{A}$, $T_J = 25^\circ\text{C}^*$
Maximum reverse recovery time	t_{rr}	100ns			$I_F = 1\text{A}$, $V_R = 30\text{V}$, $di/dt = -50\text{A}/\mu\text{s}$
Maximum peak reverse current	I_{RM}	5mA			V_{RRM} , $T_J = 125^\circ\text{C}$
Maximum peak reverse current	I_{RM}	25 μA			V_{RRM} , $T_J = 25^\circ\text{C}$
Typical junction capacitance	C_J	240pF			$V_R = 10\text{V}$, $f = 1\text{MHz}$, $T_J = 25^\circ\text{C}$

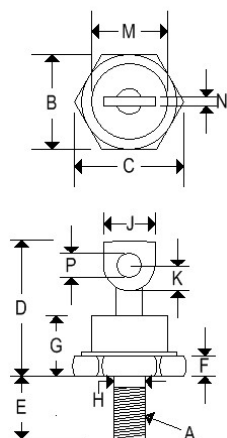
Pulse test: pulse width 300 μsec , duty cycle 2%

THERMAL CHARACTERISTICS

Characteristics	Symbol	Test Conditions
Storage temperature range	T_{stg}	-65° to 175°C
Operating junction temperature range	T_J	-65° to 175°C
Maximum thermal resistance	$R_{\theta JC}$	0.45°C/W junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.5°C/W case to sink
Mounting torque		25-30 inch pounds
Weight		0.52 ounce (14.7 grams) typical

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	1/4-28 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	0.115	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

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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Figure 1
Typical Forward Characteristics

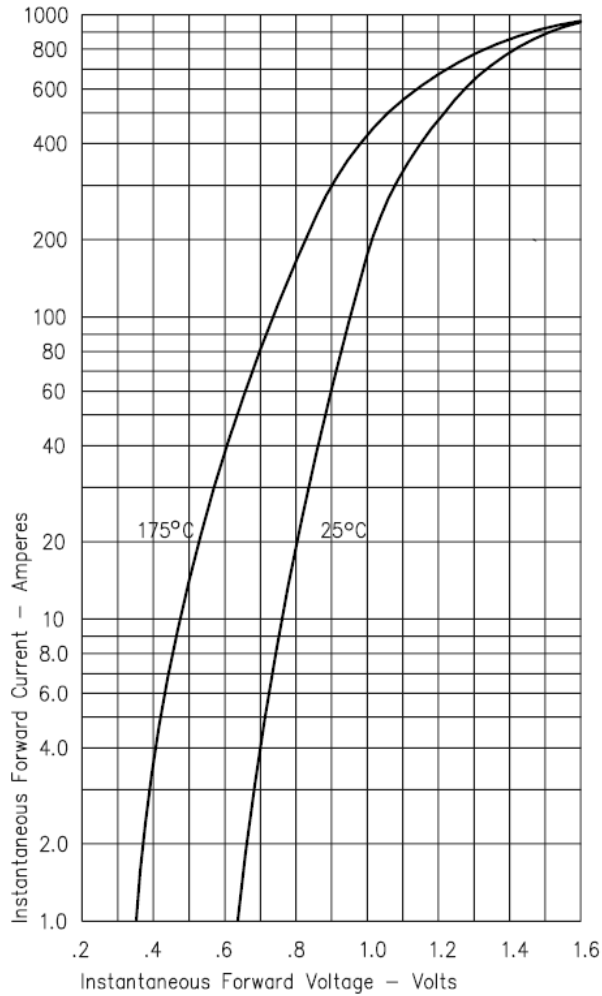


Figure 3
Typical Junction Capacitance

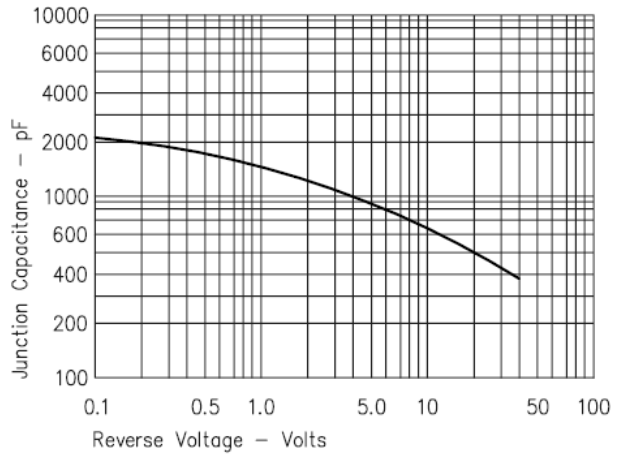


Figure 4
Forward Current Derating

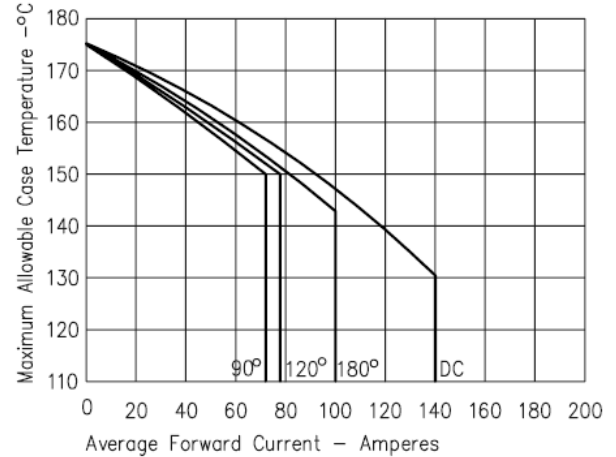


Figure 2
Typical Reverse Characteristics

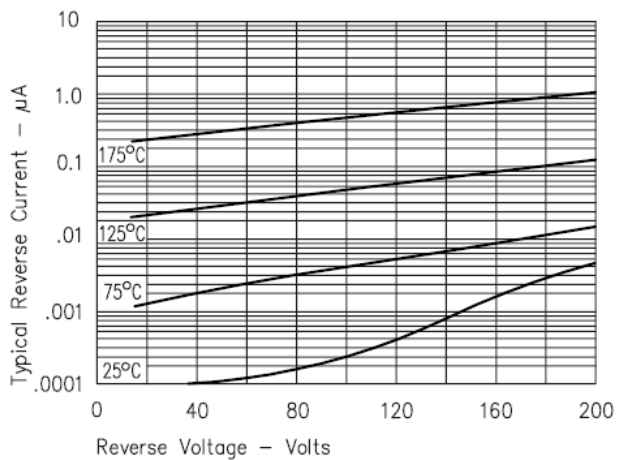
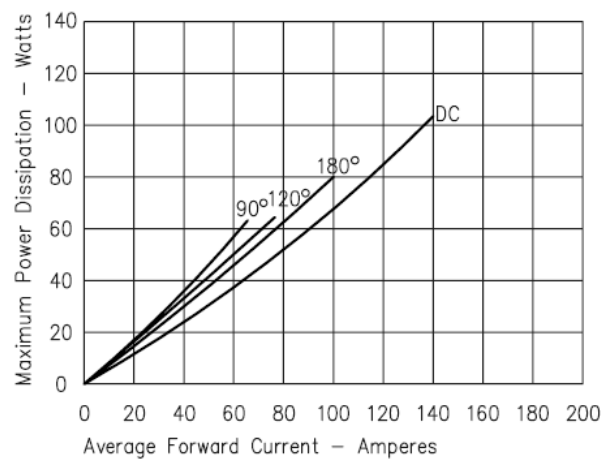


Figure 5
Maximum Forward Power Dissipation



4-2-02 Rev. IR