DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

MUR105-MUR160

1 AMP ULTRA FAST RECTIFIER

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	MUR							Unit
		105	110	115	120	130	140	160	
Peak repetitive reverse voltage **Working peak reverse voltage** **DC blocking voltage**	V_{RRM} V_{RWM} V_R	50	100	150	200	300	400	600	V
Average rectified forward current (square wave) Mounting method per note 2	$I_{F(AV)}$	1.0 @ T_A = 130°C				1.0 @ T_A = 120°C			A
Non-repetitive peak surge current (surge applied at rated load conditions halfwave, single phase, 60Hz)	I_{FSM}	35							A
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +175							°C
Maximum thermal resistance Junction to ambient	$R_{\Theta JA}$	Note 2							°C/W

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect the device reliability.

ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	MUR							Unit
		105	110	115	120	130	140	160	
Maximum instantaneous forward voltage [1] (I_F = 1.0A, T_J = 150°C) (I_F = 1.0A, T_J = 25°C)	V_F	0.710 0.875				1.050 1.250			V
Maximum instantaneous reverse current [1] (Rated dc voltage, T_J = 150°C) (Rated dc voltage, T_J = 25°C)	I_R	50 2.0				150 5.0			µA
Maximum reverse recovery time (I_F = 1.0A, di/dt = 50A/µs) (I_F = 0.5A, I_R = 1.0A, I_{REC} = 0.25A)	t_{rr}	35 25				75 50			ns
Maximum forward recovery time (I_F = 1.0A, di/dt = 100A/µs, recovery to 1.0V)	t_{fr}	25				50			ns

Note 1: Pulse test: Pulse width = 300µs, duty cycle ≤ 2.0%.
Note 2: PC board with 1 ½" x 1 ½" copper surface.

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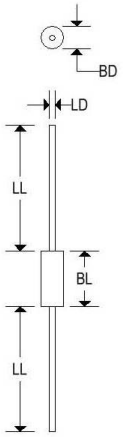
MECHANICAL CHARACTERISTICS

Case	DO-41
Marking	Body painted, alpha-numeric
Polarity	Cathode band



	DO-41			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.107	-	2.720
BL	-	0.205	-	5.207
LD	0.028	0.034	0.711	0.864
LL	1.000	-	25.400	-

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MUR105, MUR110, MUR115, MUR120

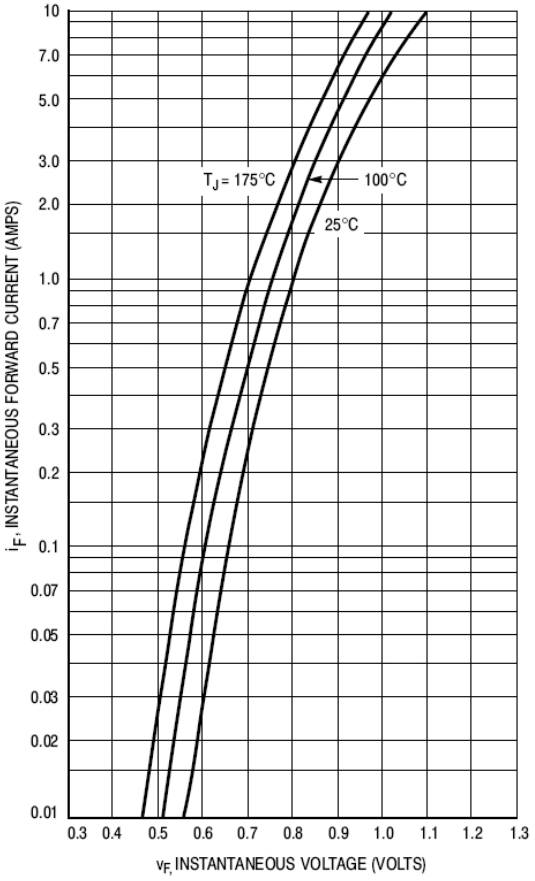

Figure 1. Typical Forward Voltage

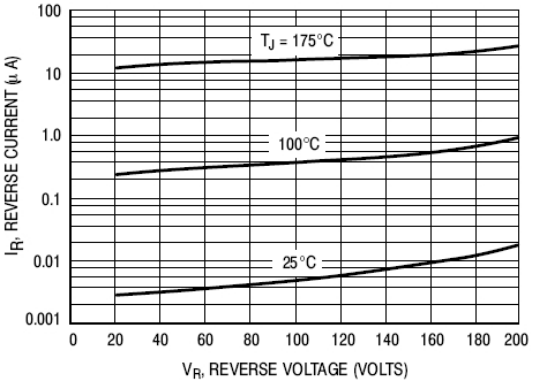

Figure 2. Typical Reverse Current*

* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if V_R is sufficiently below rated V_R.

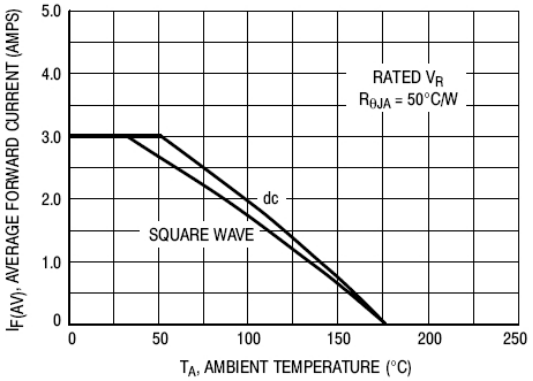

Figure 3. Current Derating
(Mounting Method #3 Per Note 1)

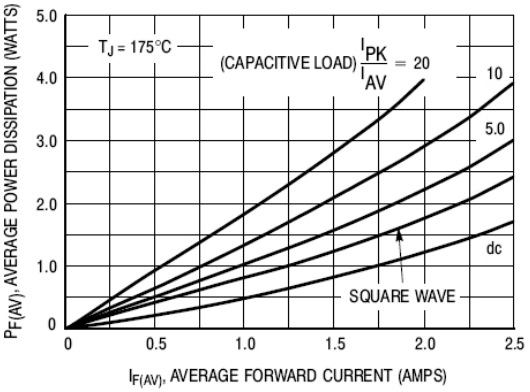

Figure 4. Power Dissipation

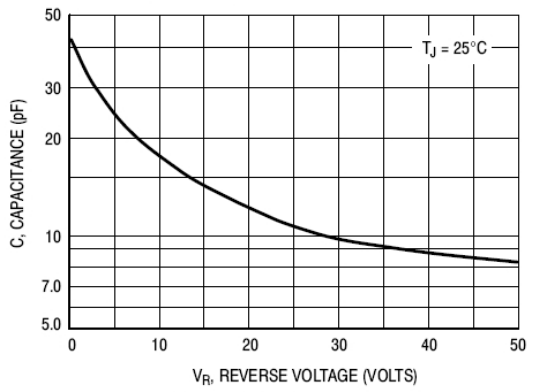

Figure 5. Typical Capacitance

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MUR130, MUR140, MUR160

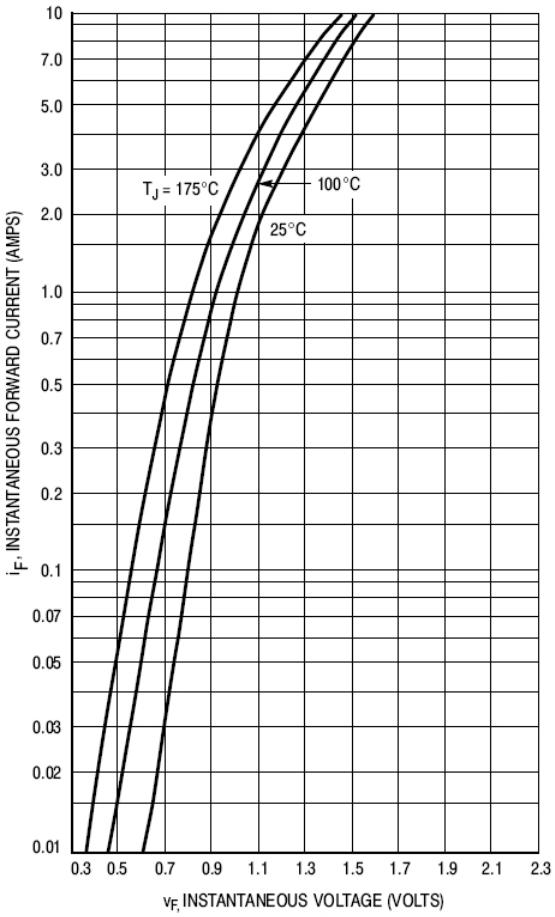

Figure 6. Typical Forward Voltage

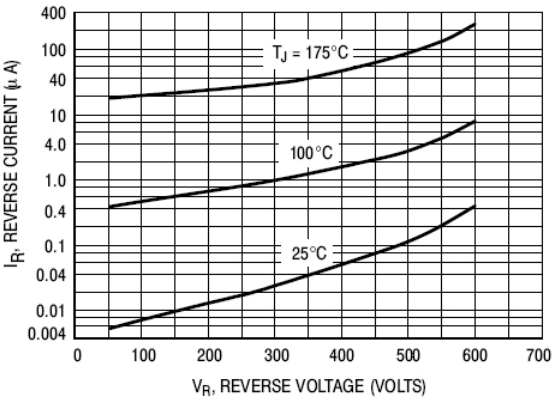

Figure 7. Typical Reverse Current*

* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if V_R is sufficiently below rated V_R.

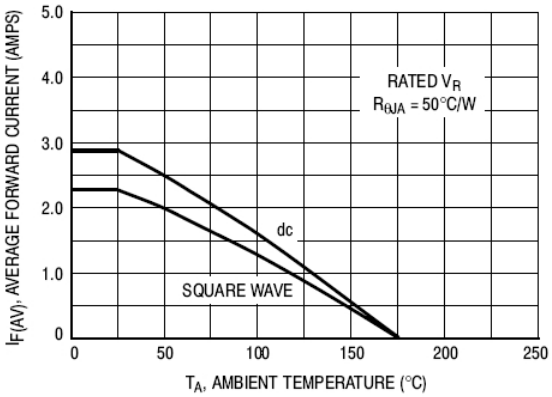

Figure 8. Current Derating (Mounting Method #3 Per Note 2)

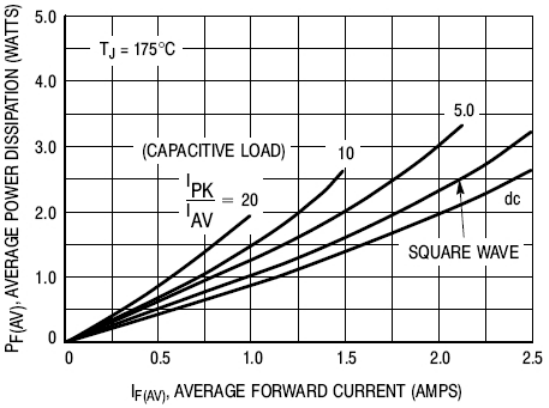

Figure 9. Power Dissipation

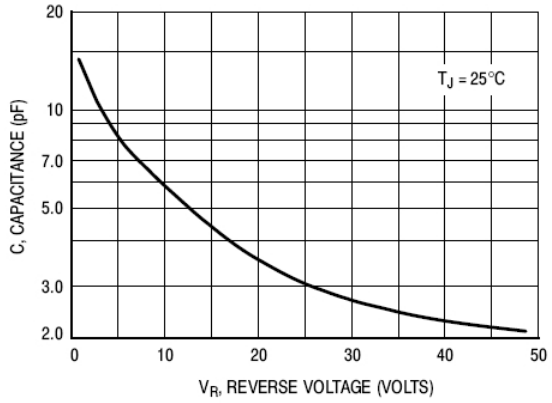

Figure 10. Typical Capacitance