

DIGITRON SEMICONDUCTORS

MUR3005PT-MUR3060PT

30A ULTRAFAST RECTIFIER

MAXIMUM RATINGS

Rating	Symbol	MUR								Unit
		3005 PT	3010 PT	3015 PT	3020 PT	3030 PT	3040 PT	3050 PT	3060 PT	
Peak repetitive reverse voltage	V_{RRM}									
Working peak reverse voltage	V_{RWM}	50	100	150	200	300	400	500	600	V
DC blocking voltage	V_R									
Average rectified forward current (Rated V_R)	$I_{F(AV)}$	30 @ $T_C = 150^\circ\text{C}$						30 @ $T_C = 145^\circ\text{C}$		A
Peak repetitive forward current, per leg (Rated V_R , square wave, 20 kHz), $T_C = 150^\circ\text{C}$)	I_{FRM}	30 @ $T_C = 150^\circ\text{C}$						30 @ $T_C = 145^\circ\text{C}$		A
Non-repetitive peak surge current (surge applied at rated load conditions halfwave, single phase, 60Hz)	I_{FSM}	200				150				A
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +175								$^\circ\text{C}$
Thermal resistance										
Junction to case	$R_{\theta JC}$	1.5								$^\circ\text{C/W}$
Junction to ambient	$R_{\theta JA}$	40								

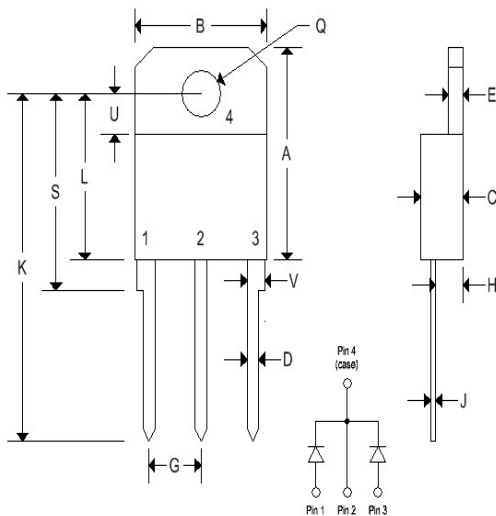
ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

Parameter	Symbol	MUR								Unit
		3005 PT	3010 PT	3015 PT	3020 PT	3030 PT	3040 PT	3050 PT	3060 PT	
Maximum instantaneous forward voltage ⁽¹⁾ ($I_F = 15\text{A}$, $T_J = 150^\circ\text{C}$) ($I_F = 15\text{A}$, $T_J = 25^\circ\text{C}$)	V_F	0.85 1.05				1.12 1.25		1.2 1.5		V
Maximum instantaneous reverse current ⁽¹⁾ (Rated dc voltage, $T_J = 150^\circ\text{C}$) (Rated dc voltage, $T_J = 25^\circ\text{C}$)	I_R	500 10						1000 10		μA
Maximum reverse recovery time ($I_F = 1.0\text{A}$, $di/dt = 50\text{A}/\mu\text{s}$)	t_{rr}	35				60				ns

Note 1: Pulse test: Pulse width = 300 μs , duty cycle $\leq 2\%$.

MECHANICAL CHARACTERISTICS

Case	TO-218AC
Marking	Alpha-numeric
Pin out	See below



	TO-218AC			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.749	0.771	19.000	19.600
B	0.551	0.570	14.000	14.500
C	0.165	0.185	4.200	4.700
D	0.040	0.051	1.000	1.300
E	0.058	0.064	1.450	1.650
G	0.206	0.225	5.210	5.720
H	0.103	0.118	2.600	3.000
J	0.016	0.023	0.400	0.600
K	1.123	1.259	28.500	32.000
L	0.579	0.602	14.700	15.300
Q	0.158	0.167	4.000	4.250
S	0.689	0.712	17.500	18.100
U	0.134	0.149	3.400	3.800
V	0.060	0.078	1.500	2.000

Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

sales@digitroncorp.com
www.digitroncorp.com

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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.

MUR3005PT, 3010PT, and 3015PT

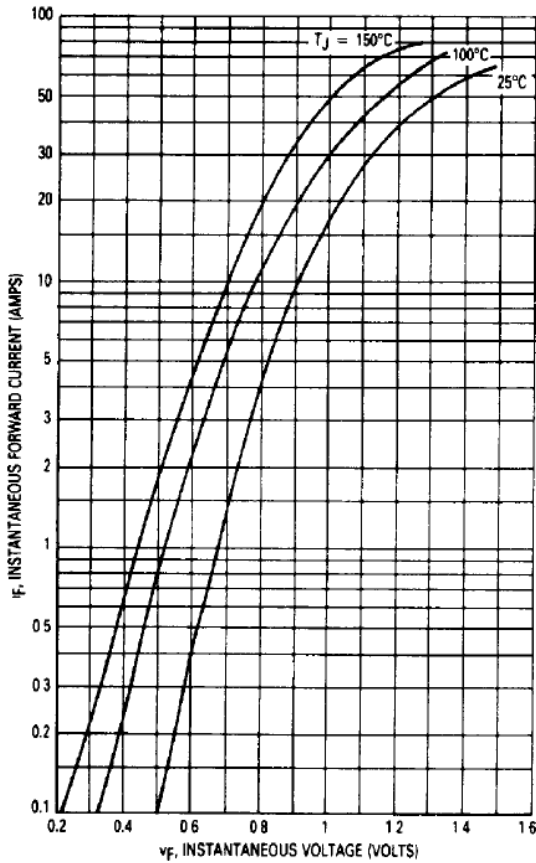
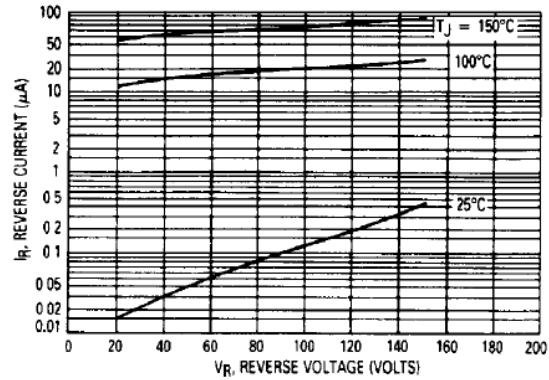


Figure 1. Typical Forward Voltage (Per Leg)



*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 Vr is sufficiently below rated Vr.

Figure 2. Typical Reverse Current (Per Leg)*

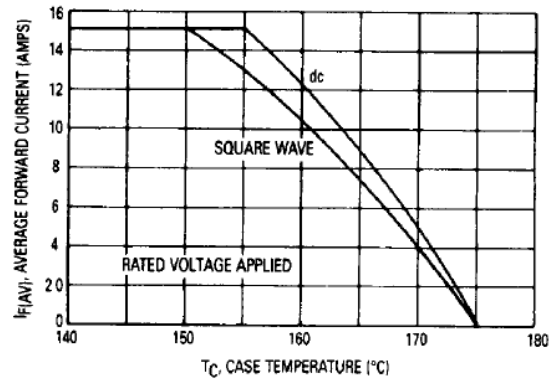


Figure 3. Current Derating, Case (Per Leg)

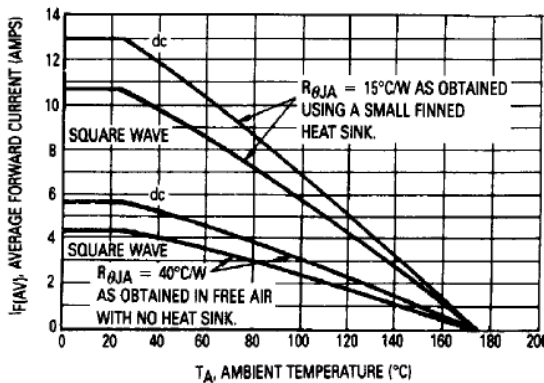


Figure 4. Current Derating, Ambient (Per Leg)

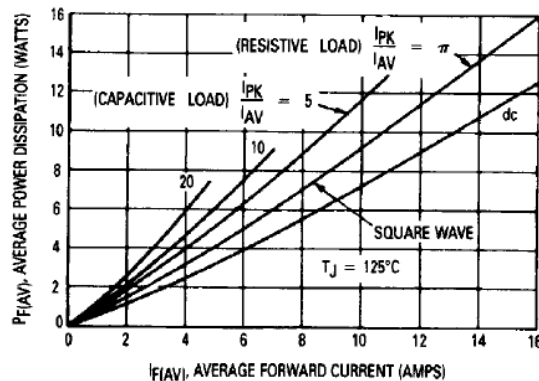


Figure 5. Power Dissipation (Per Leg)

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MUR3020PT, MUR3030PT, MUR3040PT

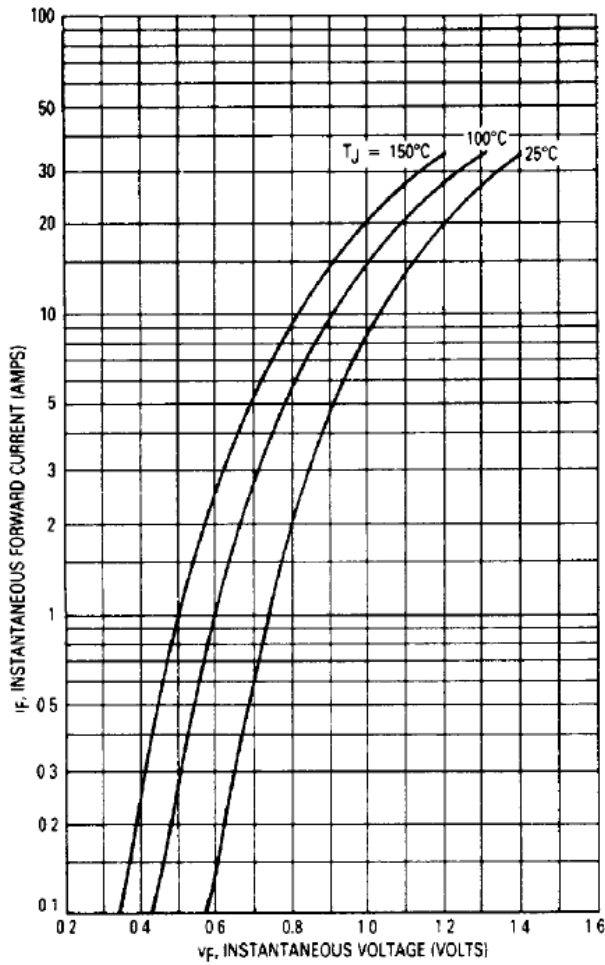
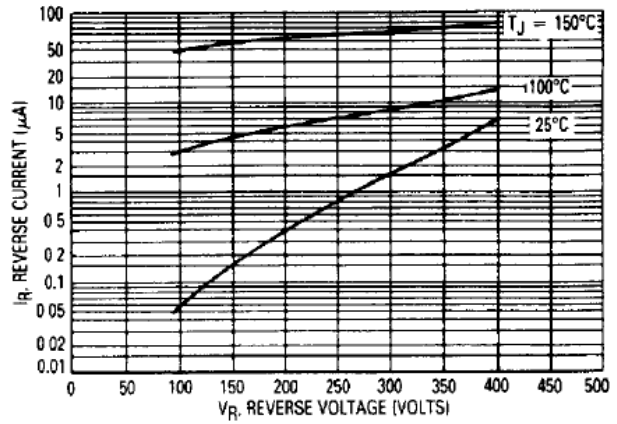


Figure 6. Typical Forward Voltage (Per Leg)



*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 7. Typical Reverse Current (Per Leg)*

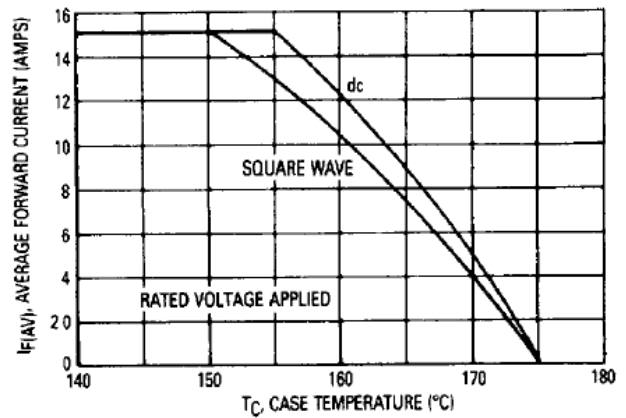


Figure 8. Current Derating, Case (Per Leg)

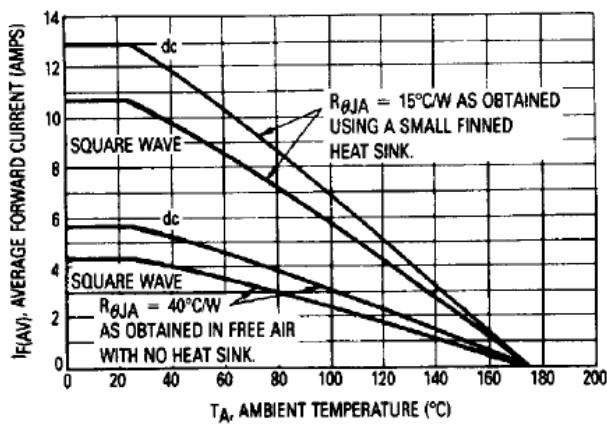


Figure 9. Current Derating, Ambient (Per Leg)

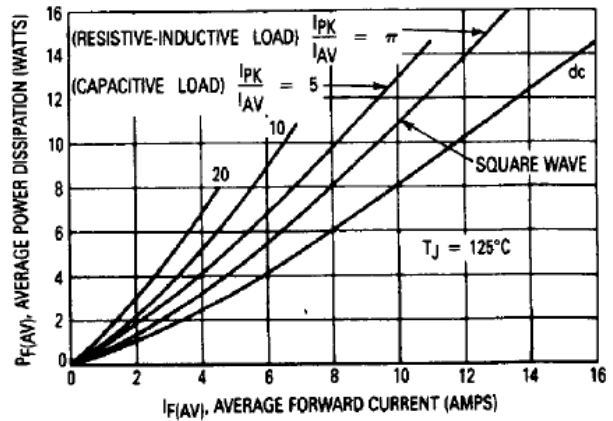


Figure 10. Power Dissipation (Per Leg)

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MUR3050PT and MUR3060PT

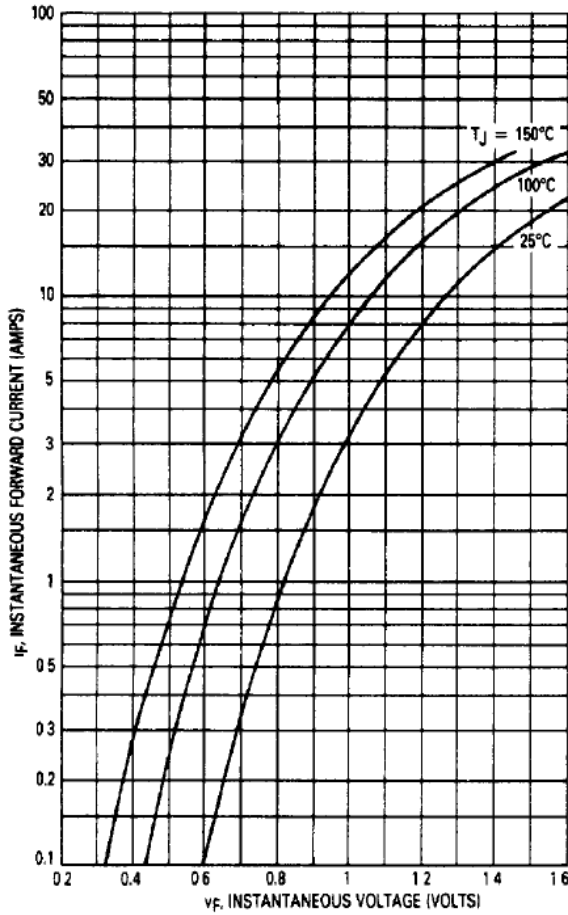
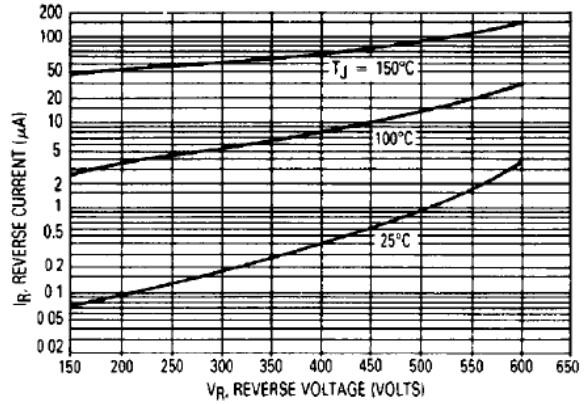


Figure 11. Typical Forward Voltage



*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 12. Typical Reverse Current*

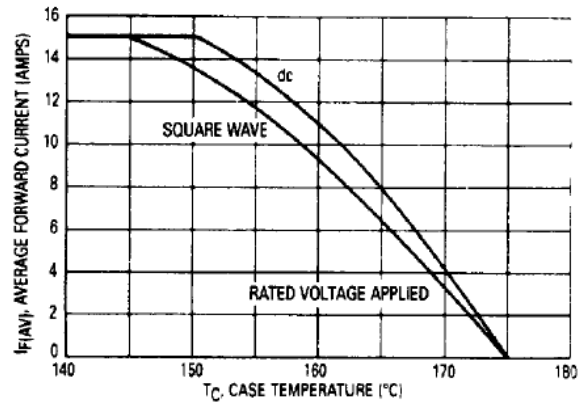


Figure 13. Current Derating, Case

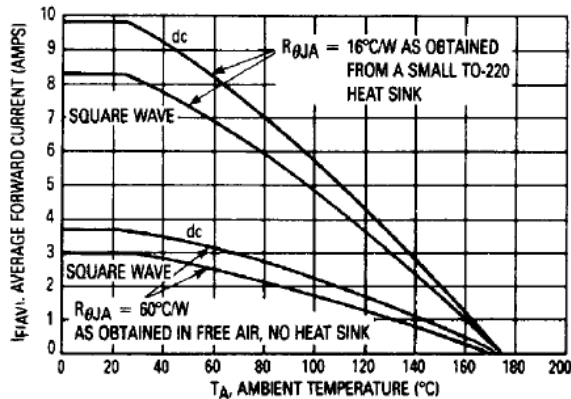


Figure 14. Current Derating, Ambient

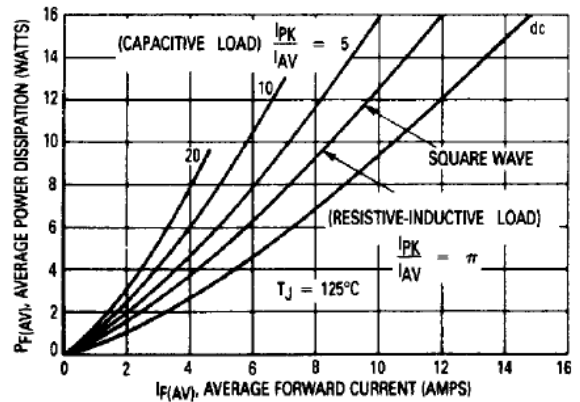


Figure 15. Power Dissipation

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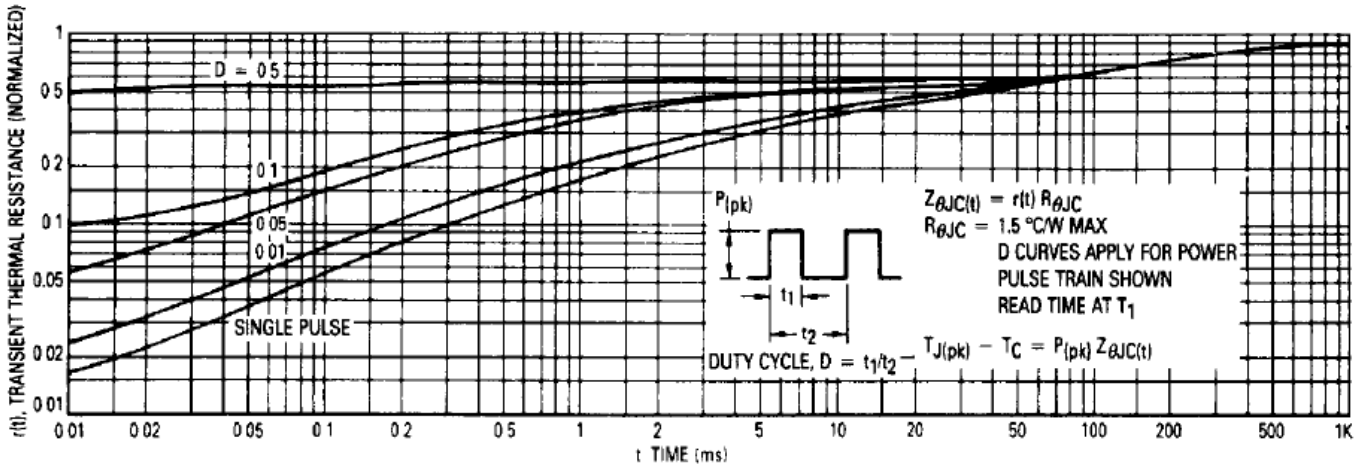


Figure 16. Thermal Response

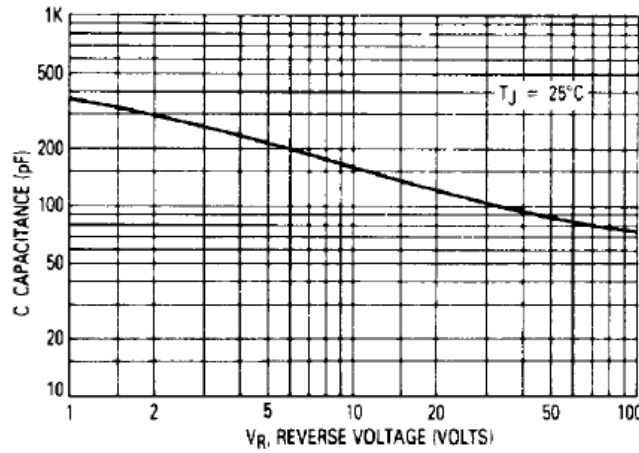


Figure 17. Typical Capacitance (Per Leg)