

# MUR3020WT-MUR3060WT

## 30A ULTRA FAST 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	MUR			Unit
		3020WT	3040WT	3060WT	
Peak repetitive reverse voltage	$V_{RRM}$	200	400	600	V
Working peak reverse voltage	$V_{RWM}$				
DC blocking voltage	$V_R$				
Average rectified forward current (Rated $V_R$ )	$I_{F(AV)}$	30.0 @ $T_C = 145^{\circ}\text{C}$			A
Peak repetitive surge current (Rated $V_R$ , square wave, 20 kHz)	$I_{FM}$	30.0 @ $T_C = 145^{\circ}\text{C}$			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			$^{\circ}\text{C}$
Maximum thermal resistance					$^{\circ}\text{C/W}$
Junction to case	$R_{\theta JC}$	1.5			
Junction to ambient	$R_{\theta JA}$	40			

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

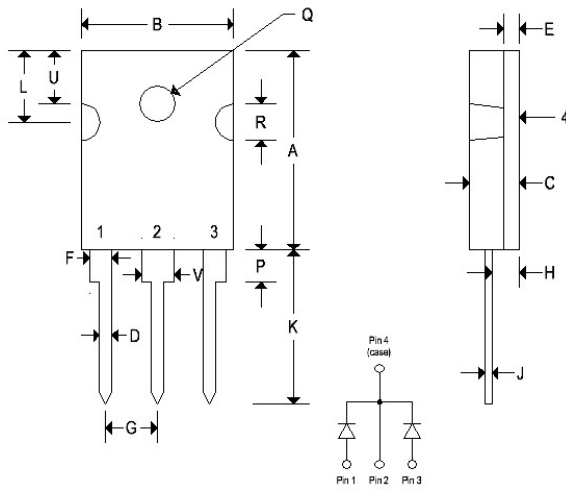
Parameter	Symbol	MUR			Unit
		3020WT	3040WT	3060WT	
Maximum instantaneous forward voltage <sup>(1)</sup> ( $I_F = 15\text{A}$ , $T_C = 150^\circ\text{C}$ ) ( $I_F = 15\text{A}$ , $T_C = 25^\circ\text{C}$ )	$V_F$	0.85 1.05	1.12 1.25	1.4 1.7	V
Maximum instantaneous reverse current <sup>(1)</sup> (Rated dc voltage, $T_C = 150^\circ\text{C}$ ) (Rated dc voltage, $T_C = 25^\circ\text{C}$ )	$I_R$	500 10		1000 10	$\mu\text{A}$
Maximum reverse recovery time ( $I_F = 1.0\text{A}$ , $di/dt = 50\text{A}/\mu\text{s}$ )	$t_{rr}$	35	60		ns

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#### MECHANICAL CHARACTERISTICS

Case	TO-247
Marking	Alpha-numeric
Pin out:	See below



	TO-247			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.803	0.823	20.400	20.900
B	0.608	0.628	15.440	15.950
C	0.185	0.205	4.700	5.210
D	0.043	0.051	1.090	1.300
E	0.059	0.064	1.500	1.630
F	0.071	0.086	1.800	2.180
G	0.215 BSC		5.450 BSC	
J	0.019	0.027	0.480	0.680
K	0.613	0.633	15.570	16.080
L	0.286	0.295	7.260	7.500
P	0.122	0.133	3.100	3.380
Q	0.138	0.145	3.500	3.700
R	0.130	0.150	3.300	3.800
U	0.209 BSC		5.300 BSC	
V	0.120	0.134	3.050	3.400

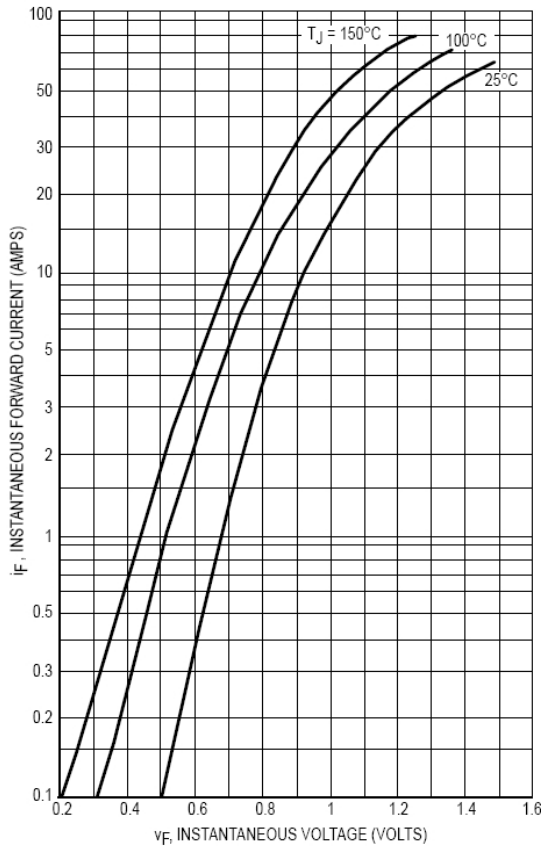
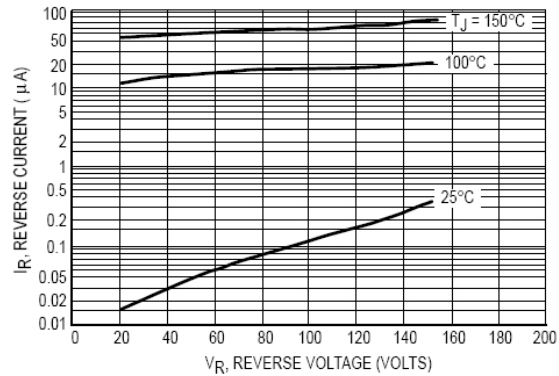


Figure 1. Typical Forward Voltage (Per Leg)



\*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  $V_R$  is sufficiently below rated  $V_R$ .

Figure 2. Typical Reverse Current (Per Leg)\*

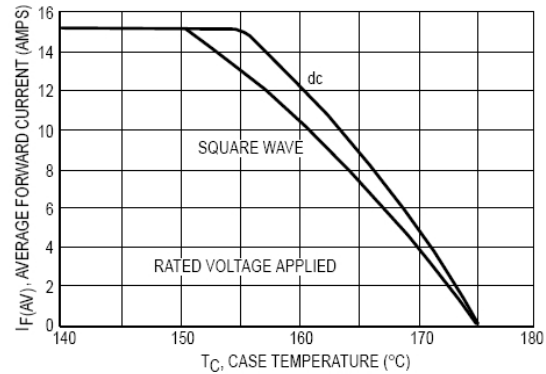


Figure 3. Current Derating, Case (Per Leg)

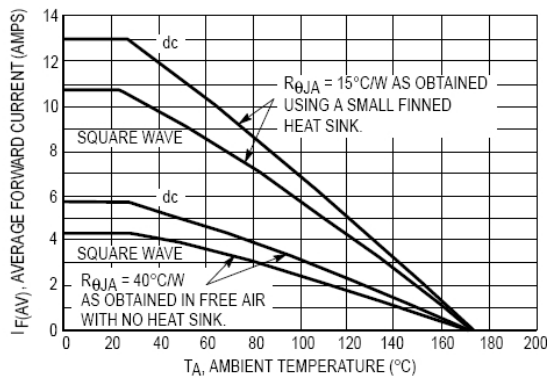


Figure 4. Current Derating, Ambient (Per Leg)

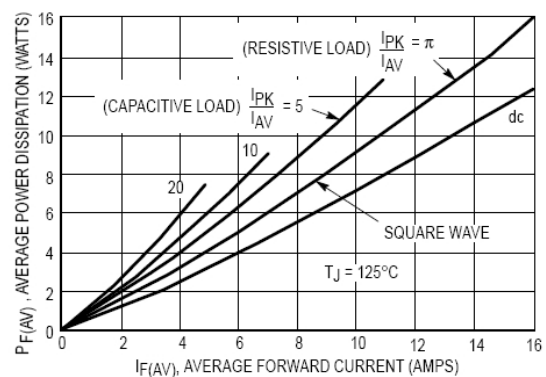


Figure 5. Power Dissipation (Per Leg)

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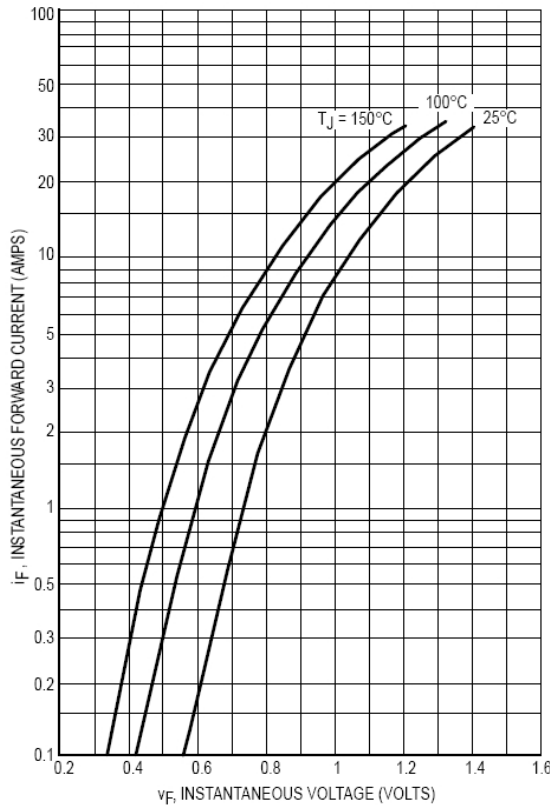
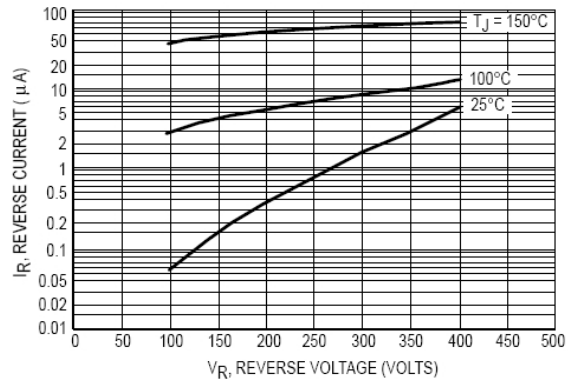


Figure 6. Typical Forward Voltage (Per Leg)



\*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)\*

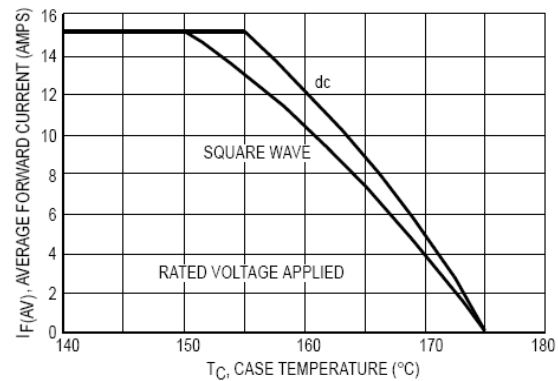


Figure 8. Current Derating, Case (Per Leg)

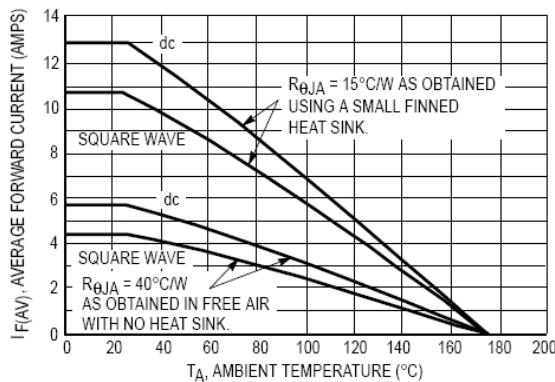


Figure 9. Current Derating, Ambient (Per Leg)

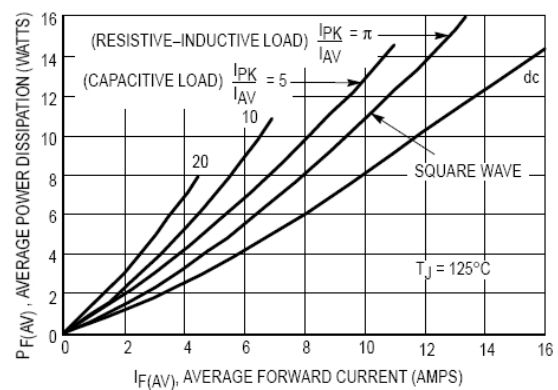


Figure 10. Power Dissipation (Per Leg)

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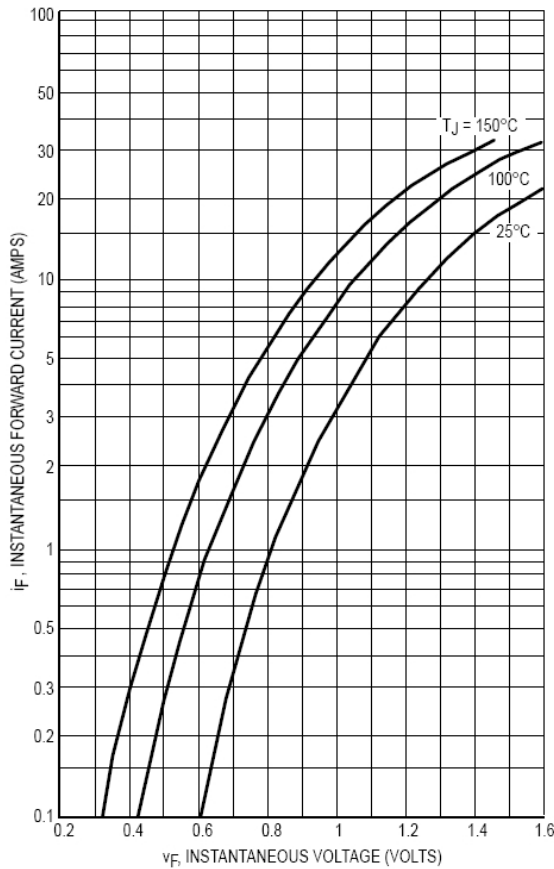
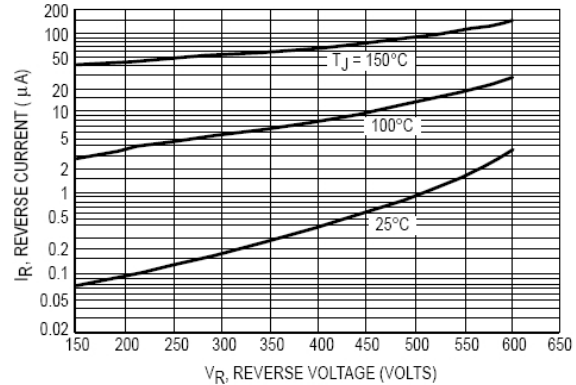


Figure 11. Typical Forward Voltage (Per Leg)



\*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 12. Typical Reverse Current (Per Leg)\*

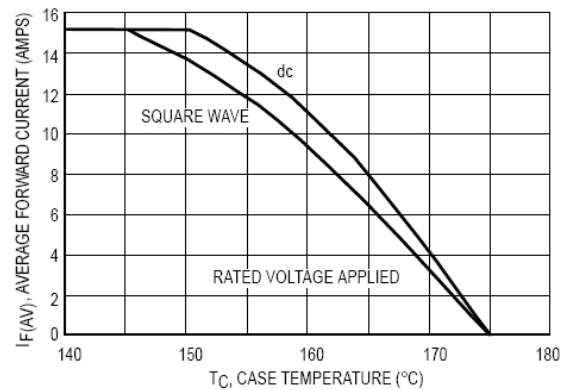


Figure 13. Current Derating, Case (Per Leg)

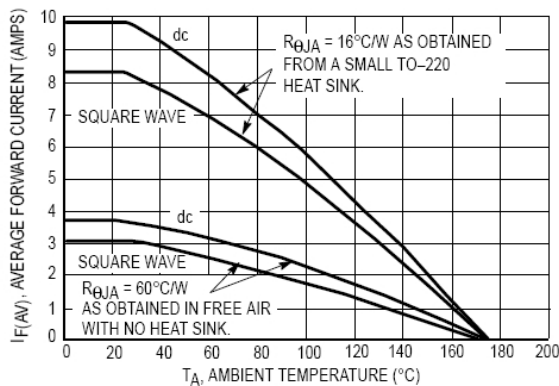


Figure 14. Current Derating, Ambient (Per Leg)

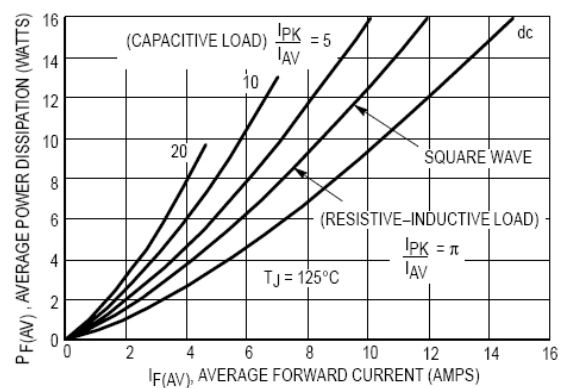


Figure 15. Power Dissipation (Per Leg)

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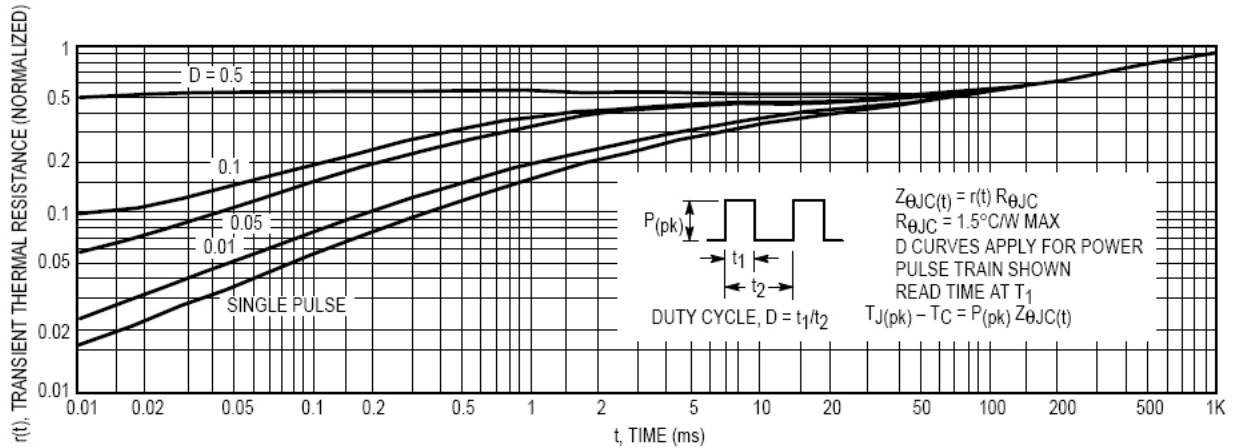


Figure 16. Thermal Response

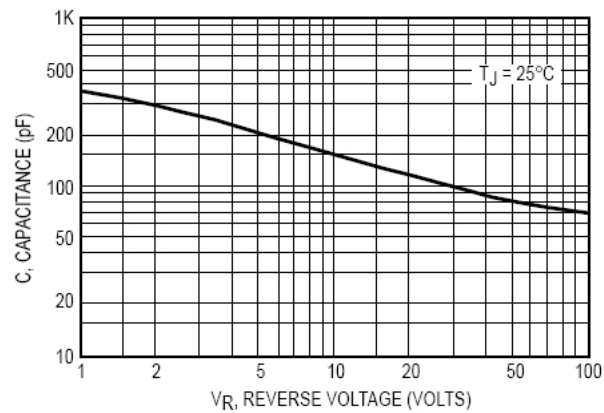


Figure 17. Typical Capacitance (Per Leg)