

# MUR3020WT, MUR3040WTG, MUR3060WT

## MAXIMUM RATINGS (Per Leg)

Rating	Symbol	MUR3020WT	MUR3040WT	MUR3060WT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	400	600	V
Average Rectified Forward Current @ 145°C Total Device	$I_{F(AV)}$	15 30			A
Peak Repetitive Surge Current (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 145^\circ\text{C}$ )	$I_{FM}$	30			A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	200	150	150	A
Operating Junction and Storage Temperature	$T_J, T_{stg}$	– 65 to +175			°C

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 device reliability.

## THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	MUR3020WT	MUR3040WT	MUR3060WT	Unit
Maximum Thermal Resistance, – Junction-to-Case – Junction-to-Ambient	$R_{\theta JC}$ $R_{\theta JA}$	1.5 40			°C/W

## ELECTRICAL CHARACTERISTICS (Per Leg)

Rating	Symbol	MUR3020WT	MUR3040WT	MUR3060WT	Unit
Maximum Instantaneous Forward Voltage (Note 1) ( $I_F = 15$ Amp, $T_C = 150^\circ\text{C}$ ) ( $I_F = 15$ Amp, $T_C = 25^\circ\text{C}$ )	$V_F$	0.85 1.05	1.12 1.25	1.4 1.7	V
Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_J = 150^\circ\text{C}$ ) (Rated DC Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	500 10	500 10	1000 10	$\mu\text{A}$
Maximum Reverse Recovery Time ( $i_F = 1.0$ A, $di/dt = 50$ Amps/ $\mu\text{s}$ )	$t_{rr}$	35	60	60	ns
Typical Peak Reverse Recovery Current ( $I_F = 1.0$ A, $di/dt = 50$ A/ $\mu\text{s}$ )	$I_{RM}$	0.7			A

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

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## MUR3020WT

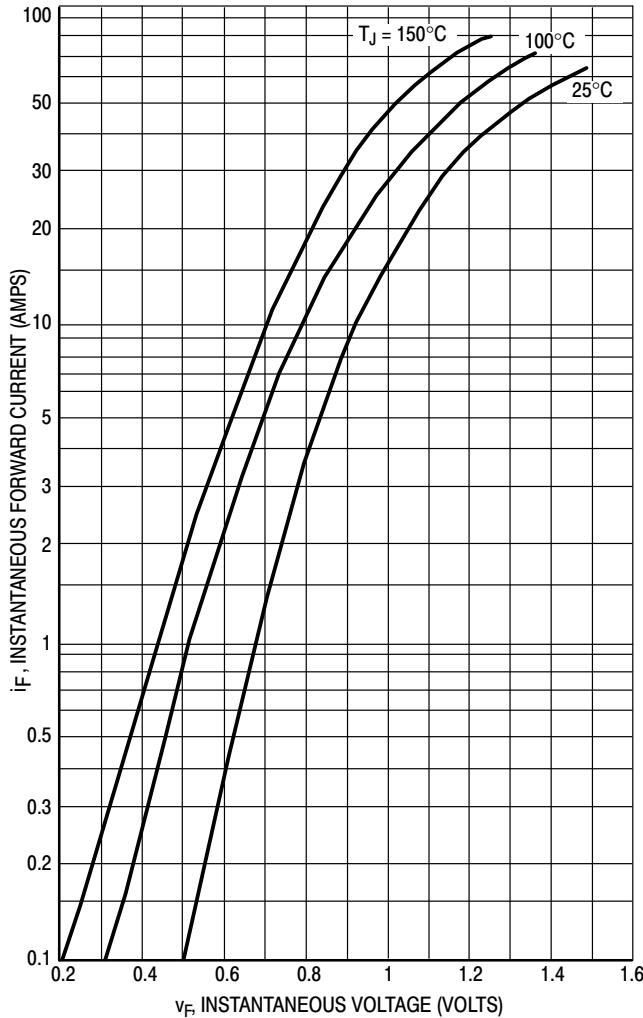
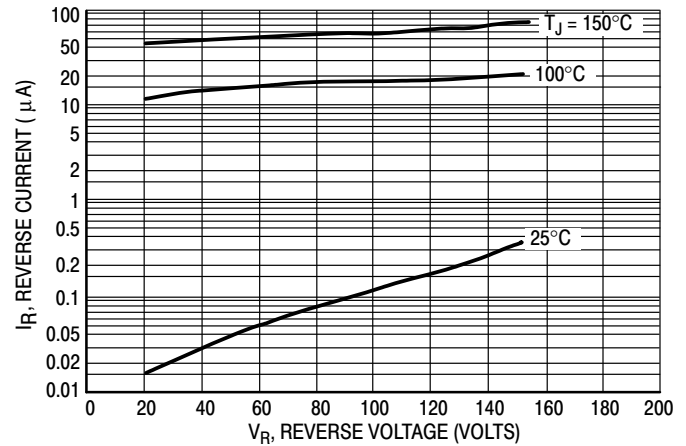


Figure 1. Typical Forward Voltage (Per Leg)



\*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)\*

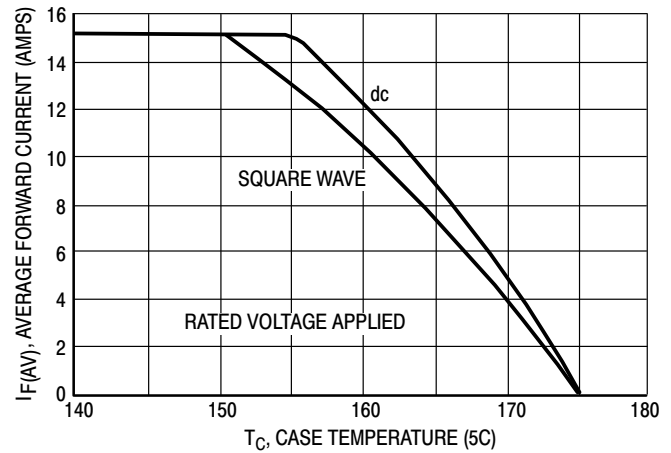


Figure 3. Current Derating, Case (Per Leg)

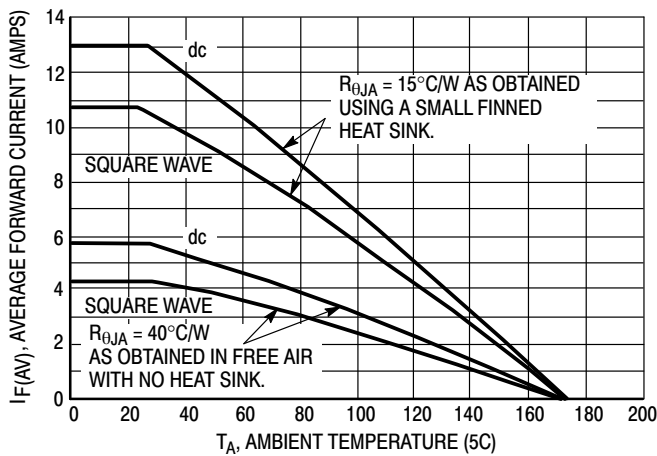


Figure 4. Current Derating, Ambient (Per Leg)

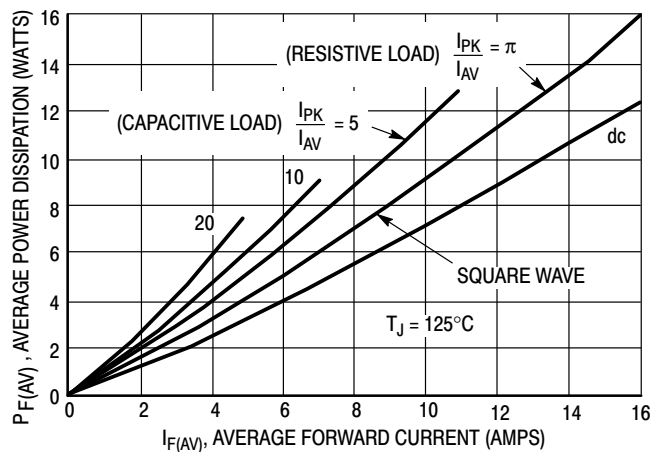


Figure 5. Power Dissipation (Per Leg)

# MUR3020WT, MUR3040WTG, MUR3060WT

## MUR3040WTG

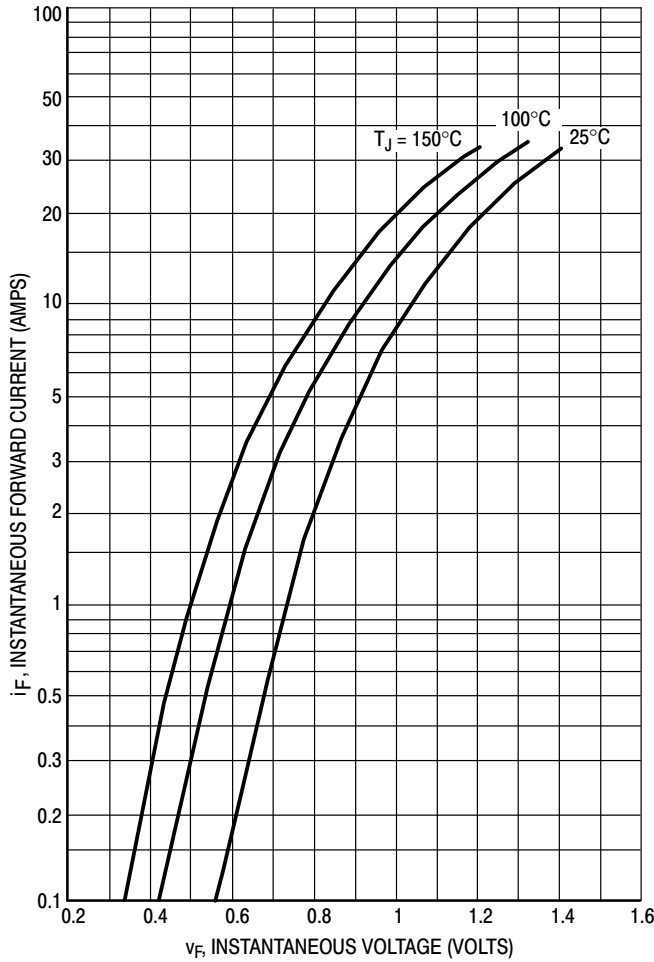
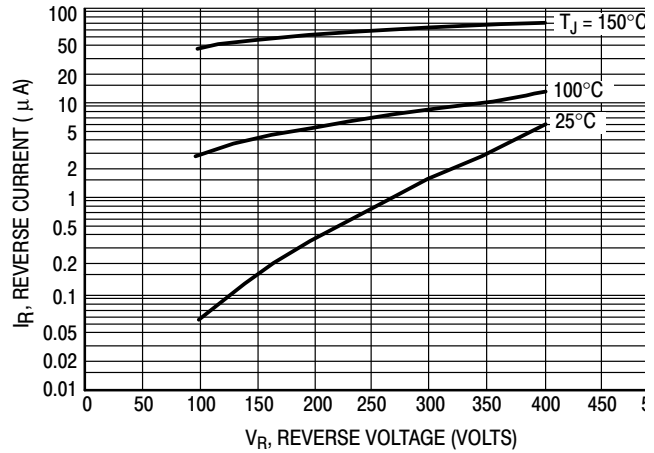


Figure 6. Typical Forward Voltage (Per Leg)



\*The curves shown are typical for the highest voltage device in the voltage group. 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)\*

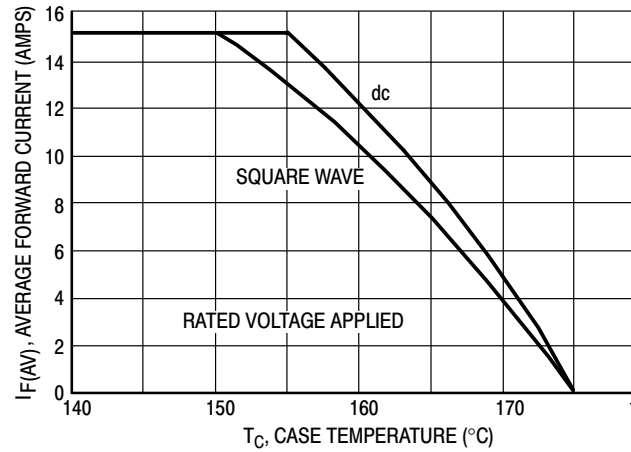


Figure 8. Current Derating, Case (Per Leg)

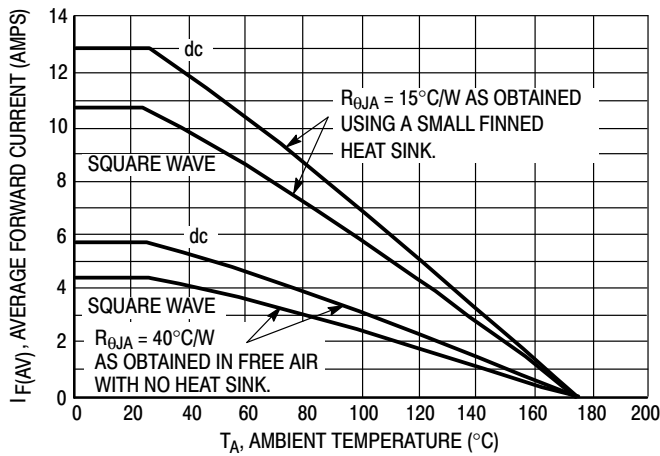


Figure 9. Current Derating, Ambient (Per Leg)

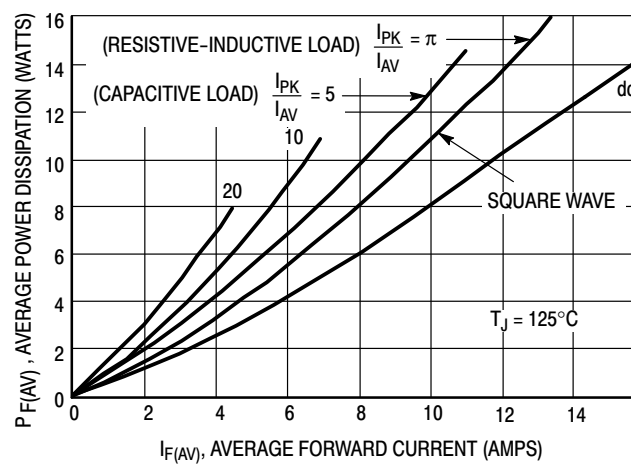


Figure 10. Power Dissipation (Per Leg)

MUR3060WT

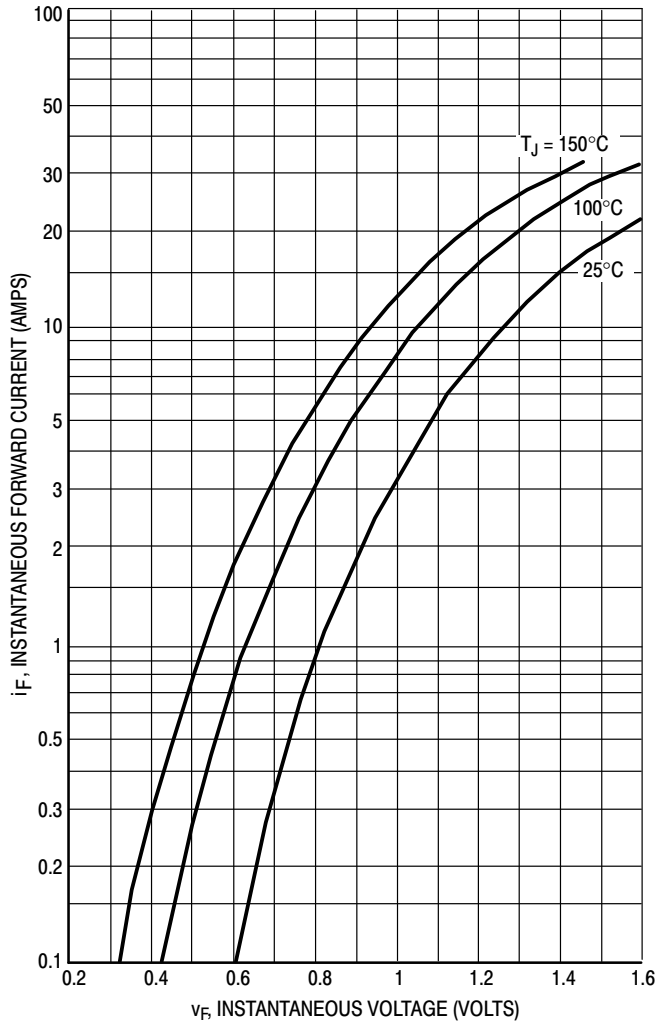
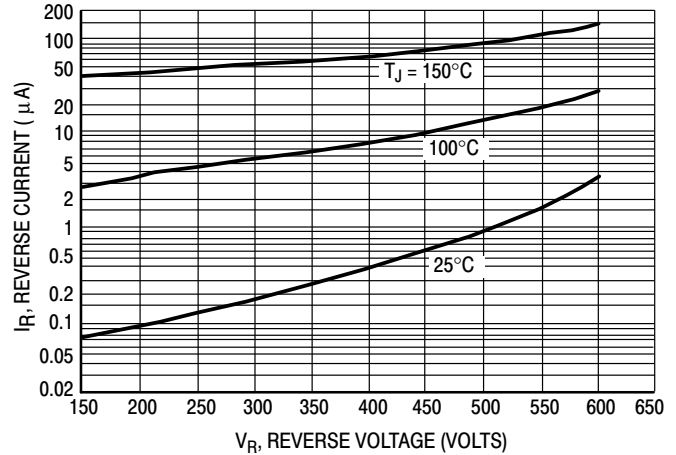


Figure 11. Typical Forward Voltage (Per Leg)



\*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)\*

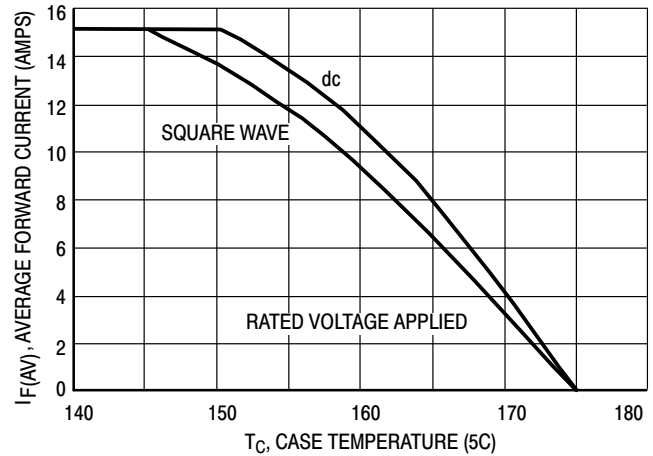


Figure 13. Current Derating, Case (Per Leg)

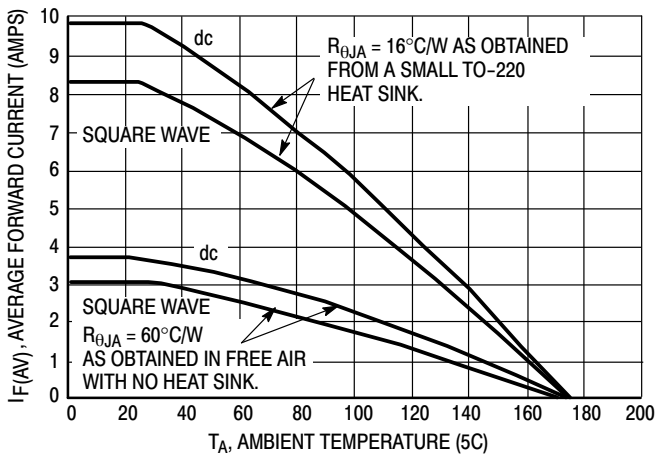


Figure 14. Current Derating, Ambient (Per Leg)

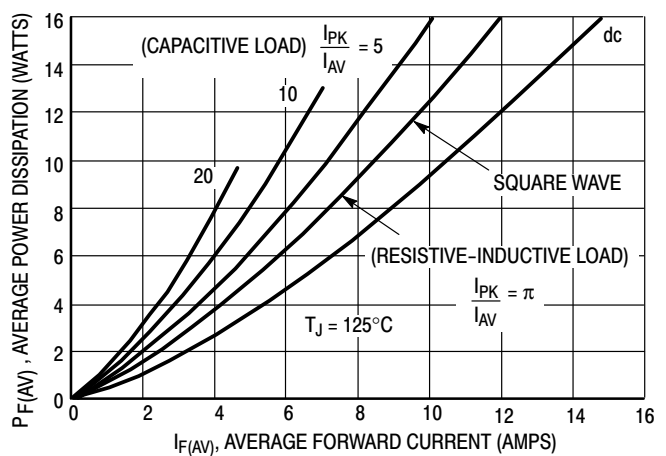


Figure 15. Power Dissipation (Per Leg)

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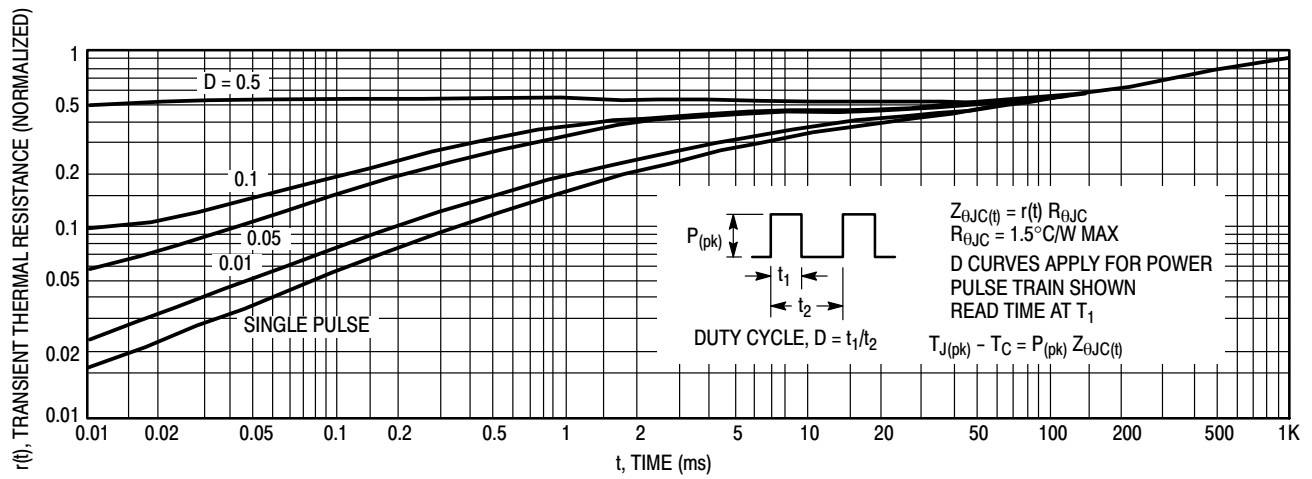


Figure 16. Thermal Response

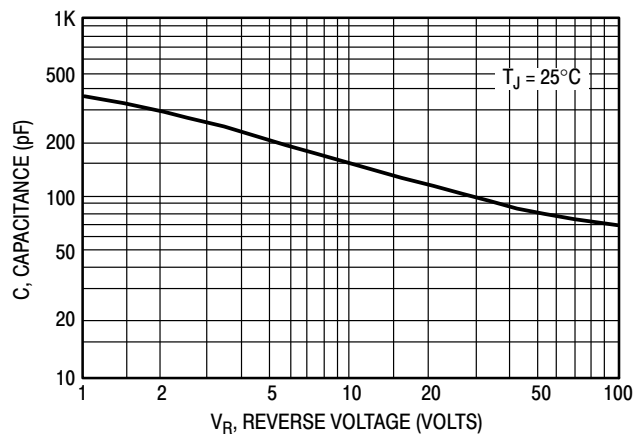
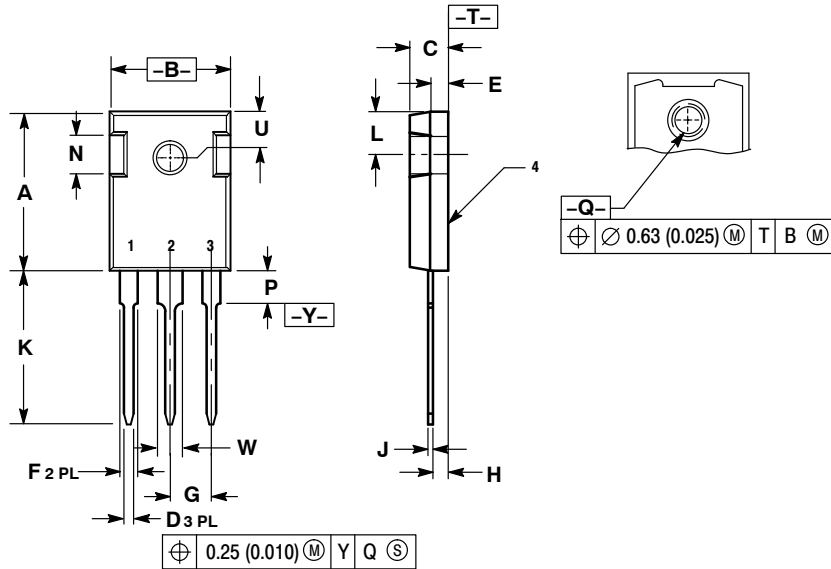


Figure 17. Typical Capacitance (Per Leg)

# MUR3020WT, MUR3040WTG, MUR3060WT

## PACKAGE DIMENSIONS

TO-247  
CASE 340L-02  
ISSUE F



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	8.30
B	15.75	16.26	0.620	0.640
C	4.70	5.30	0.185	0.209
D	1.00	1.40	0.040	0.055
E	1.90	2.60	0.075	0.102
F	1.65	2.13	0.065	0.084
G	5.45 BSC	0.215 BSC		
H	1.50	2.49	0.059	0.098
J	0.40	0.80	0.016	0.031
K	19.81	20.83	0.780	0.820
L	5.40	6.20	0.212	0.244
N	4.32	5.49	0.170	0.216
P	---	4.50	---	0.177
Q	3.55	3.65	0.140	0.144
U	6.15 BSC	0.242 BSC		
W	2.87	3.12	0.113	0.123

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