

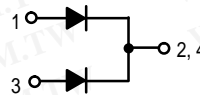
SWITCHMODE™ Power Rectifiers

... designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- Ultrafast 35 and 60 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-247 Package
- High Voltage Capability to 600 Volts
- Low Forward Drop
- Low Leakage Specified @ 150°C Case Temperature
- Current Derating Specified @ Both Case and Ambient Temperatures
- Epoxy Meets UL94, V₀ @ 1/8"
- High Temperature Glass Passivated Junction

Mechanical Characteristics

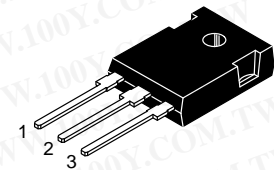
- Case: Epoxy, Molded
- Weight: 4.3 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 30 units per plastic tube
- Marking: U3020, U3040, U3060



MUR3020WT
MUR3040WT
MUR3060WT

Motorola Preferred Devices

ULTRAFAST RECTIFIERS
30 AMPERES
200-400-600 VOLTS



CASE 340K-01
TO-247AE

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	Volts
Average Rectified Forward Current @ 145°C Total Device	I _{F(AV)}	15 30			Amps
Peak Repetitive Surge Current (Rated V _R , Square Wave, 20 kHz, T _C = 145°C)	I _{FM}	30			Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I _{FSM}	200	150		Amps
Operating Junction and Storage Temperature	T _J , T _{stg}	- 65 to +175			°C

THERMAL CHARACTERISTICS, PER LEG

Maximum Thermal Resistance — Junction to Case — Junction to Ambient	R _{θJC} R _{θJA}	1.5 40	°C/W
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ELECTRICAL CHARACTERISTICS, PER LEG

Maximum Instantaneous Forward Voltage (1) (I _F = 15 Amp, T _C = 150°C) (I _F = 15 Amp, T _C = 25°C)	V _F	0.85 1.05	1.12 1.25	1.4 1.7	Volts
Maximum Instantaneous Reverse Current (1) (Rated DC Voltage, T _J = 150°C) (Rated DC Voltage, T _J = 25°C)	i _R	500 10			μA
Maximum Reverse Recovery Time (i _F = 1.0 A, di/dt = 50 Amps/μs)	t _{rr}	35	60		ns

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

SWITCHMODE is a trademark of Motorola, Inc.

Preferred devices are Motorola recommended choices for future use and best overall value.

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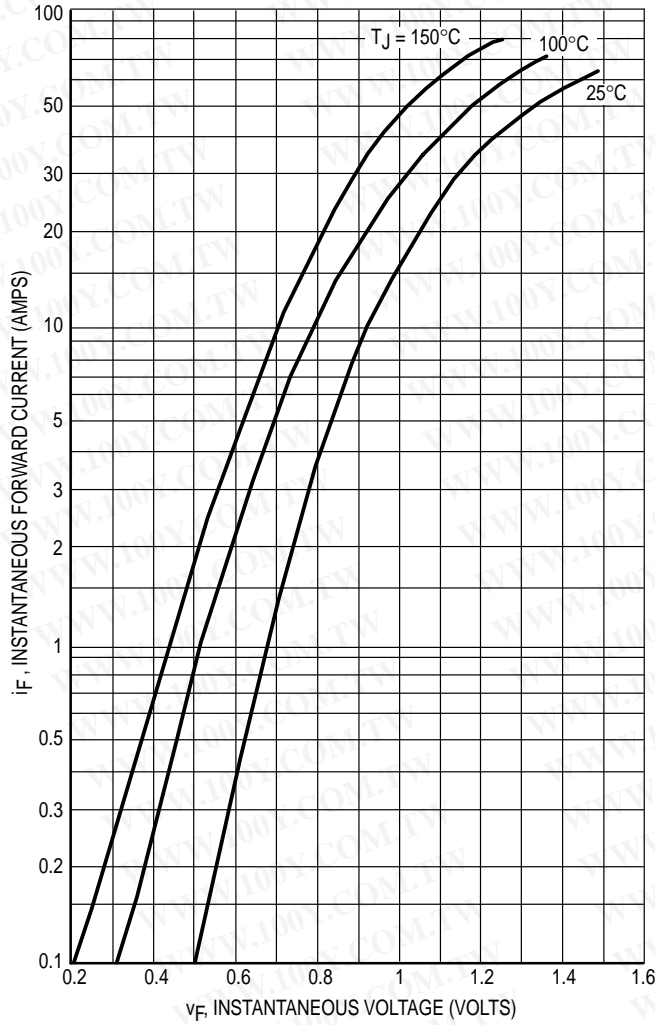
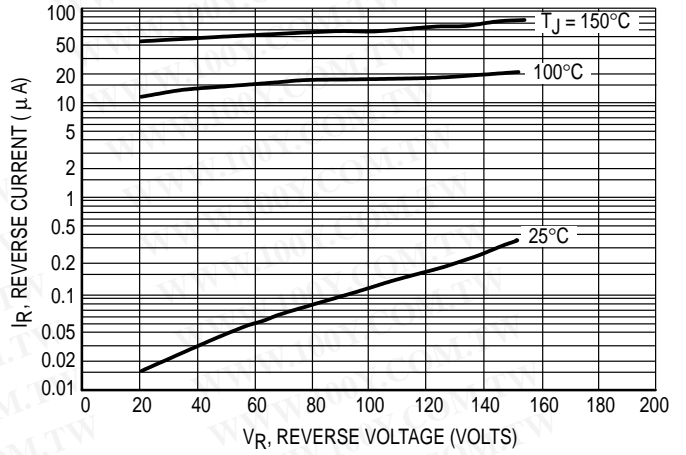


Figure 1. Typical Forward Voltage (Per Leg)



*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)*

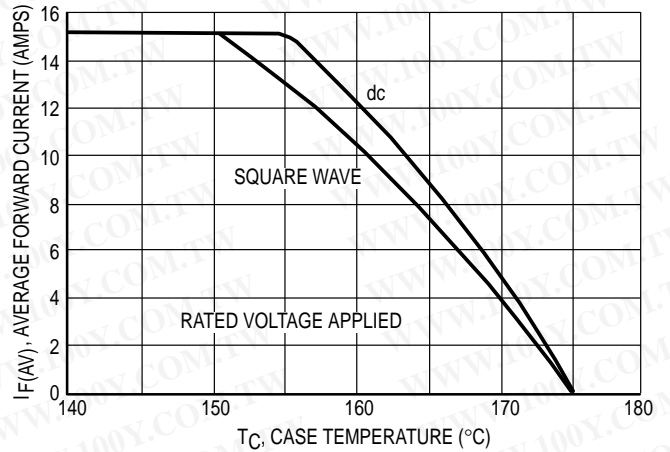


Figure 3. Current Derating, Case (Per Leg)

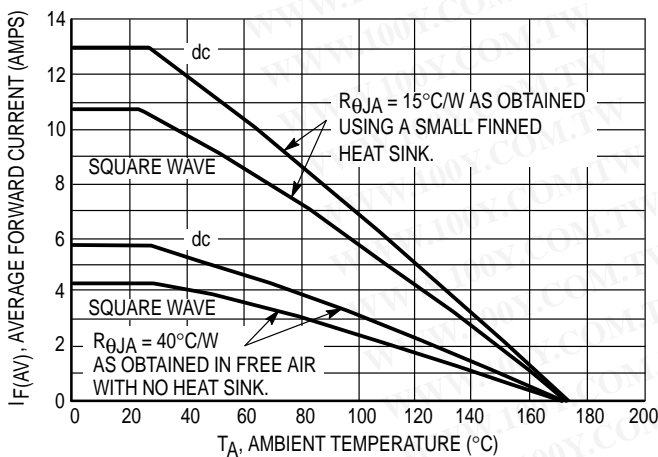


Figure 4. Current Derating, Ambient (Per Leg)

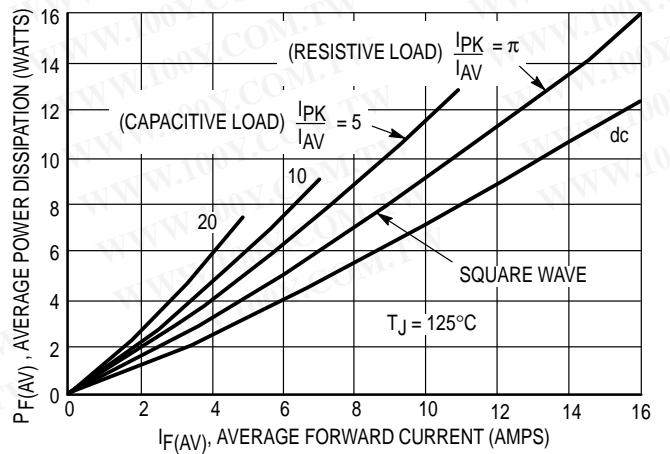


Figure 5. Power Dissipation (Per Leg)

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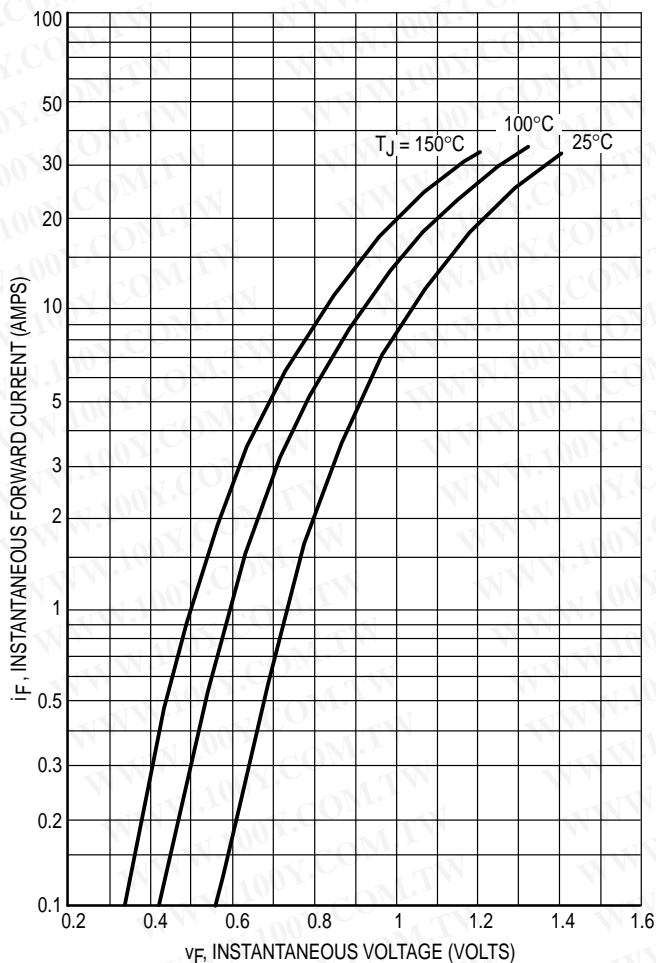
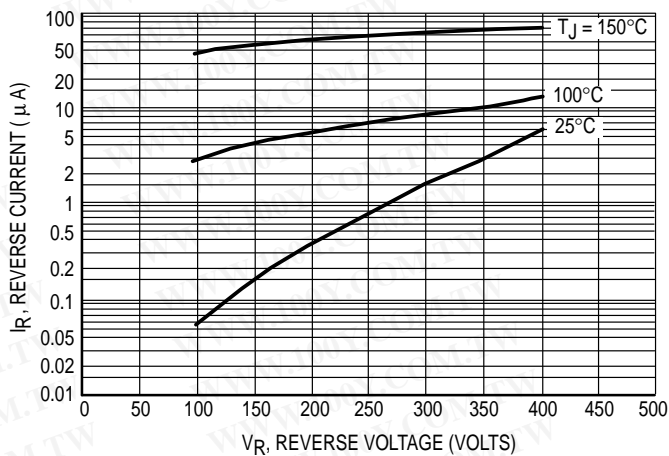


Figure 6. Typical Forward Voltage (Per Leg)



*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)*

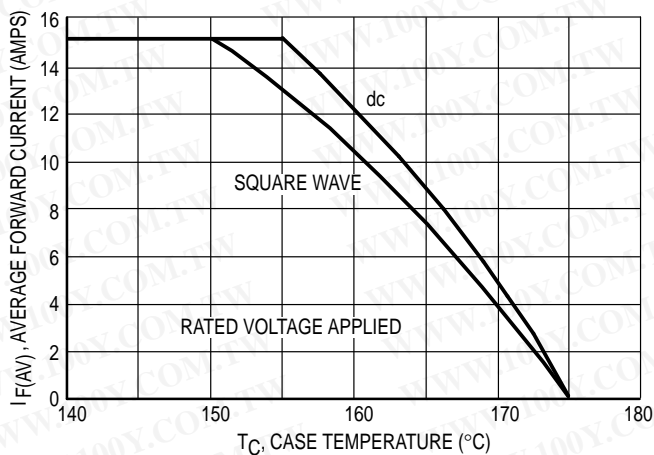


Figure 8. Current Derating, Case (Per Leg)

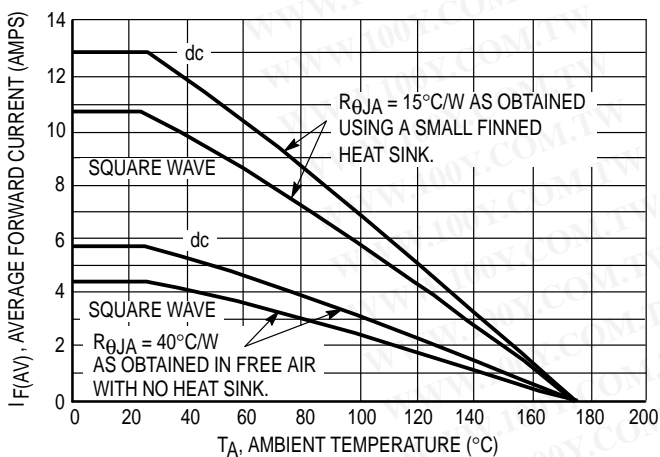


Figure 9. Current Derating, Ambient (Per Leg)

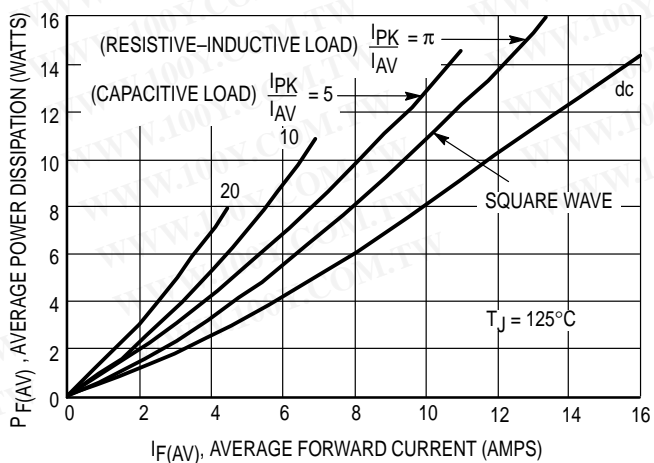


Figure 10. Power Dissipation (Per Leg)

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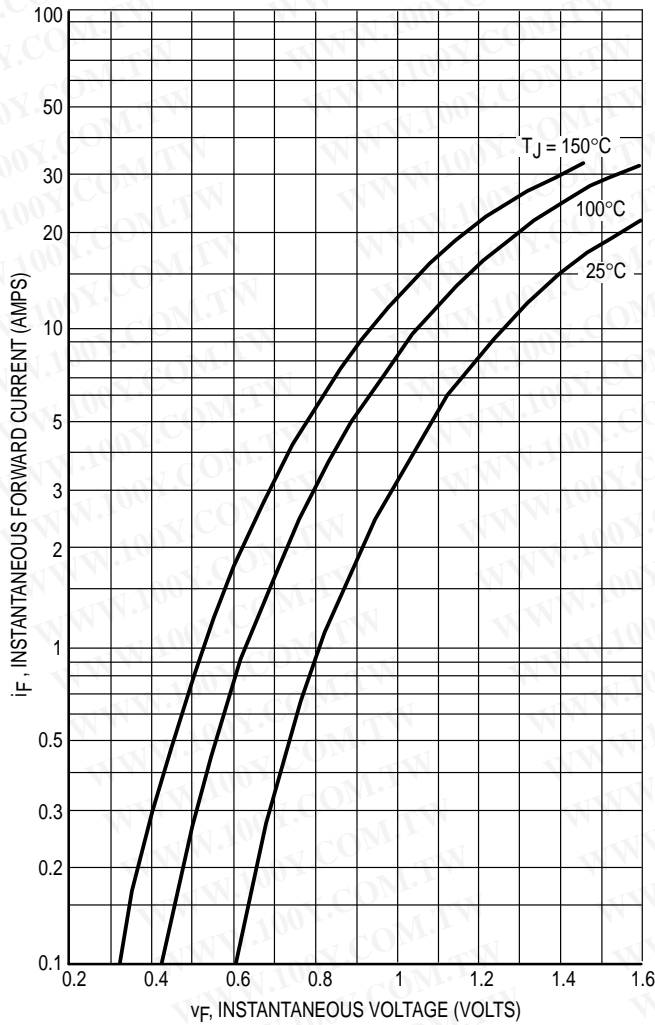
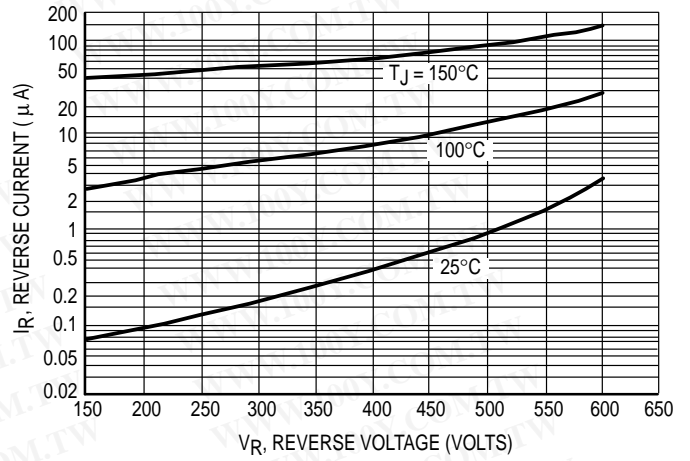


Figure 11. Typical Forward Voltage (Per Leg)



*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)*

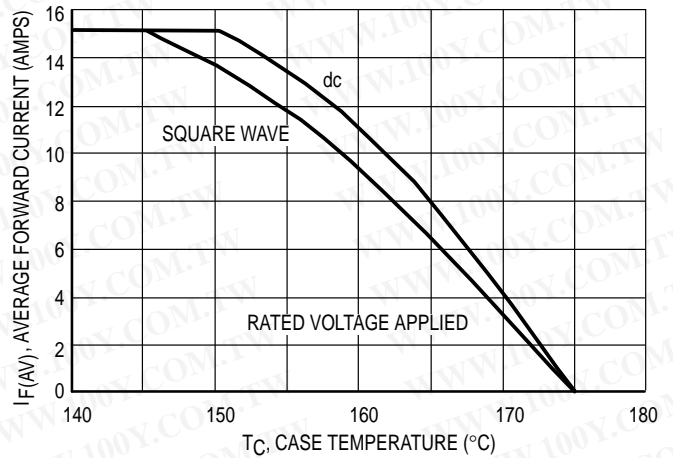


Figure 13. Current Derating, Case (Per Leg)

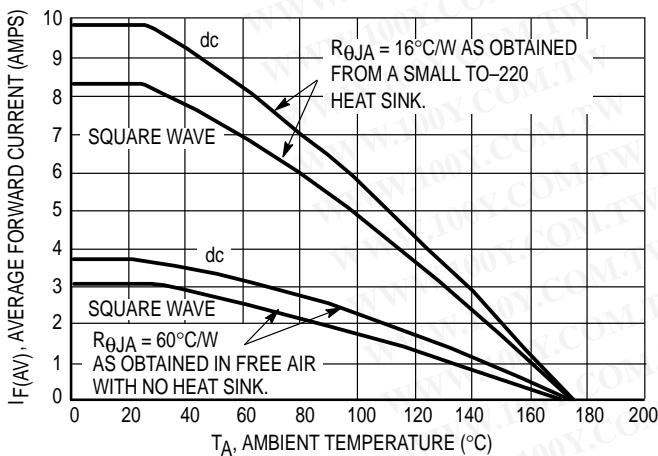


Figure 14. Current Derating, Ambient (Per Leg)

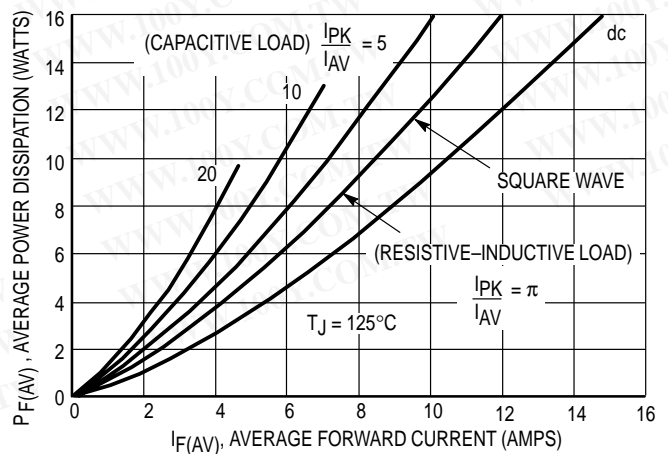


Figure 15. Power Dissipation (Per Leg)

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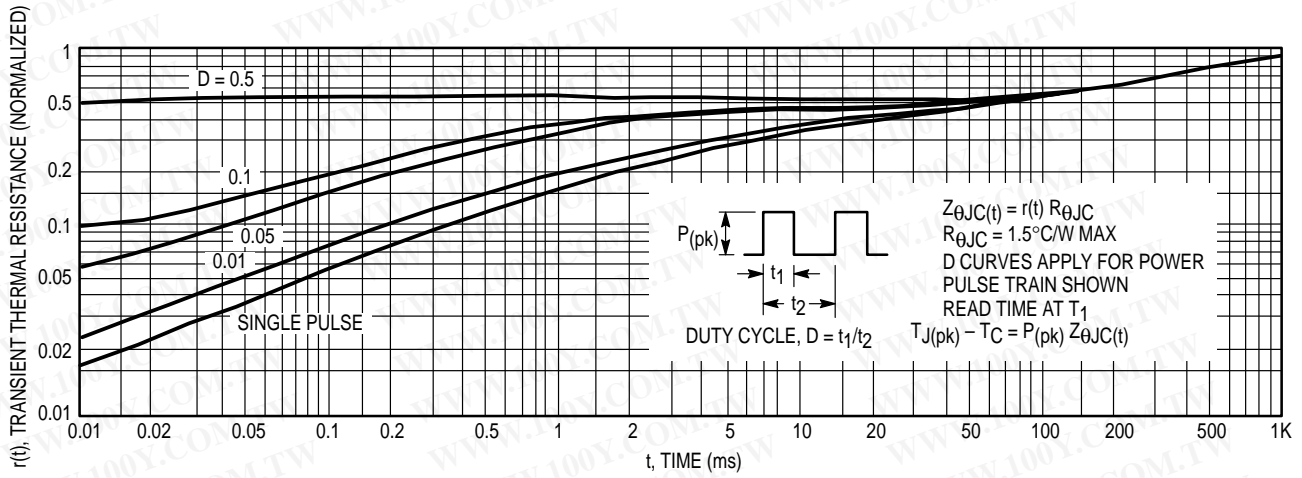


Figure 16. Thermal Response

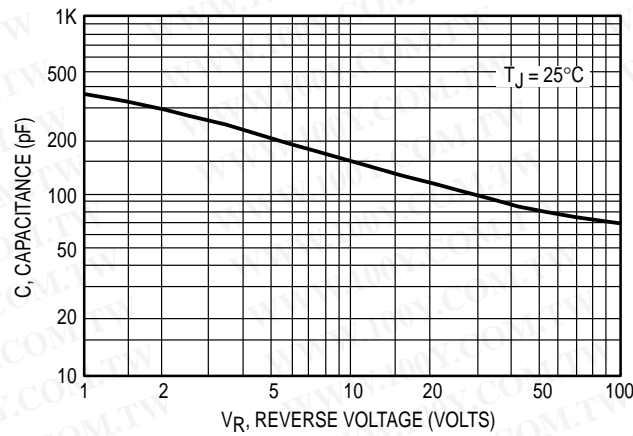
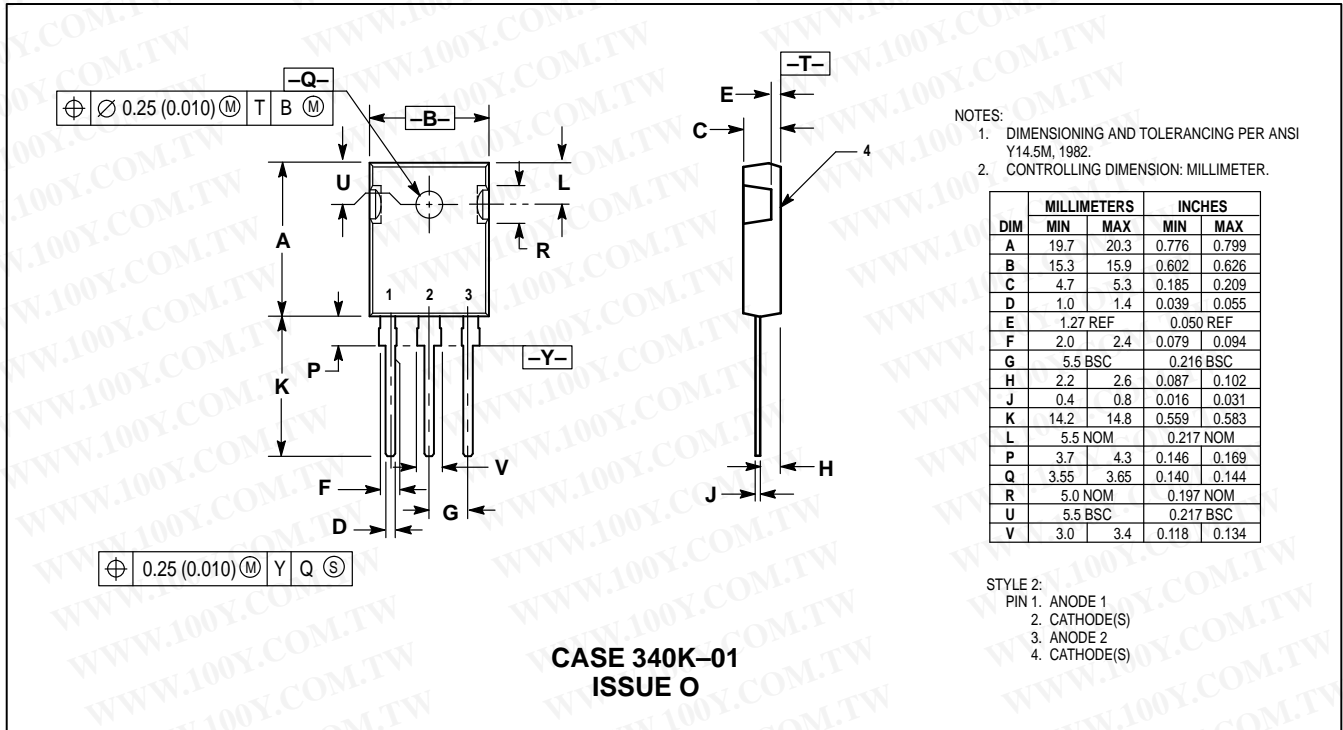


Figure 17. Typical Capacitance (Per Leg)

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PACKAGE DIMENSIONS



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