

DIGITRON SEMICONDUCTORS

MUR3020WT-MUR3060WT

30A ULTRAFAST RECTIFIER

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 | | | | | $^\circ\text{C}/\text{W}$ |
| Junction to case | $R_{\theta JC}$ | 1.5 | | | |
| Junction to ambient | $R_{\theta JA}$ | 40 | | | |

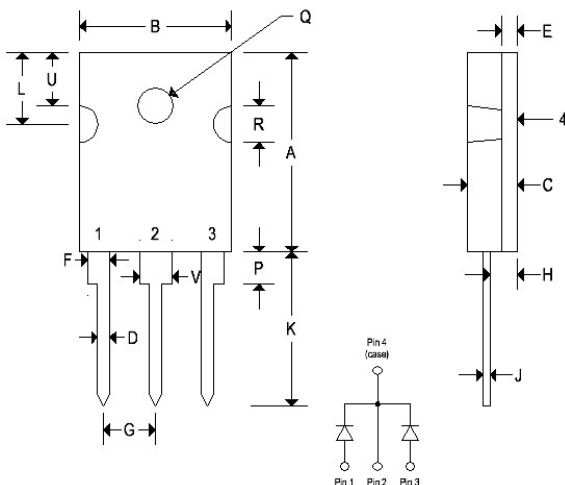
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | MUR | | | Unit |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|--------------|------------|---------------|
| | | 3020WT | 3040WT | 3060WT | |
| Maximum instantaneous forward voltage ⁽¹⁾ ($I_F = 15\text{A}, T_C = 150^\circ\text{C}$) ($I_F = 15\text{A}, T_C = 25^\circ\text{C}$) | V_F | 0.85 1.05 | 1.12 1.25 | 1.4 1.7 | V |
| Maximum instantaneous reverse current ⁽¹⁾ (Rated dc voltage, $T_C = 150^\circ\text{C}$) (Rated dc voltage, $T_C = 25^\circ\text{C}$) | 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 $\leq 2.0\%$.

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 |

DIGITRON SEMICONDUCTORS

MUR3020WT-MUR3060WT 30A ULTRAFAST RECTIFIER

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.

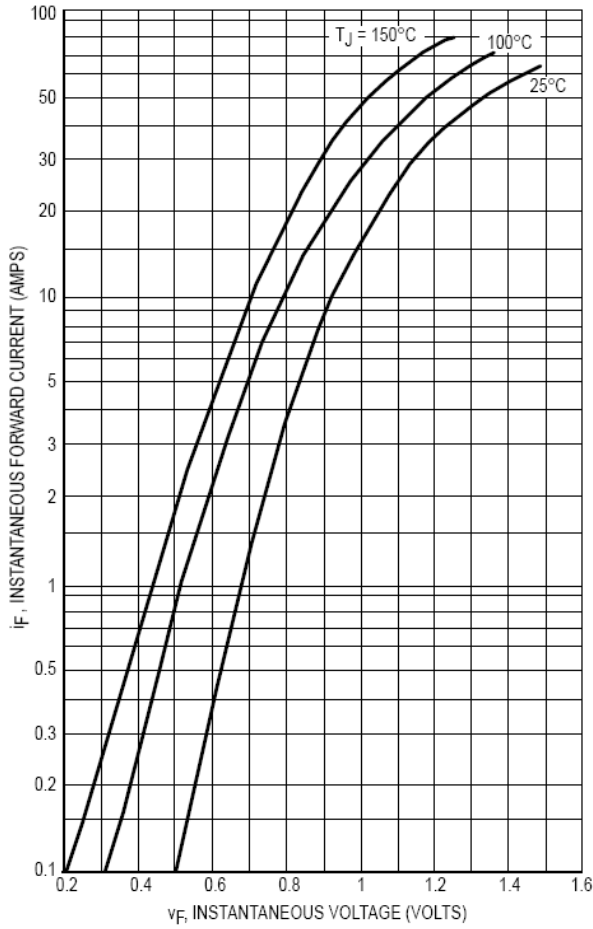
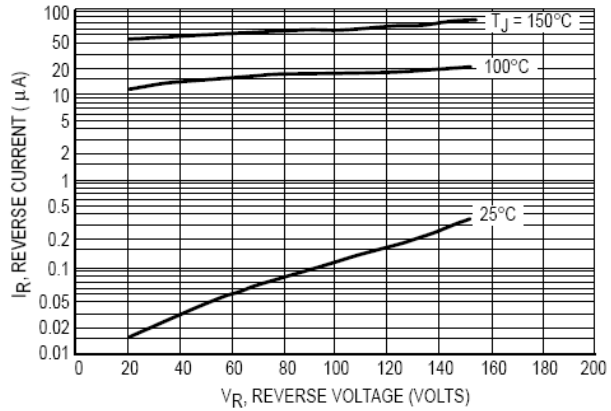


Figure 1. Typical Forward Voltage (Per Leg)



*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)*

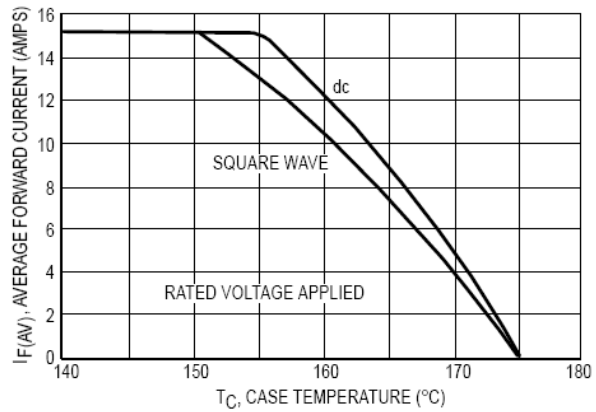


Figure 3. Current Derating, Case (Per Leg)

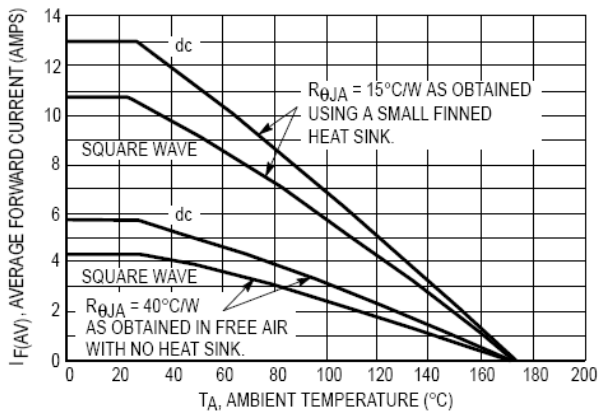


Figure 4. Current Derating, Ambient (Per Leg)

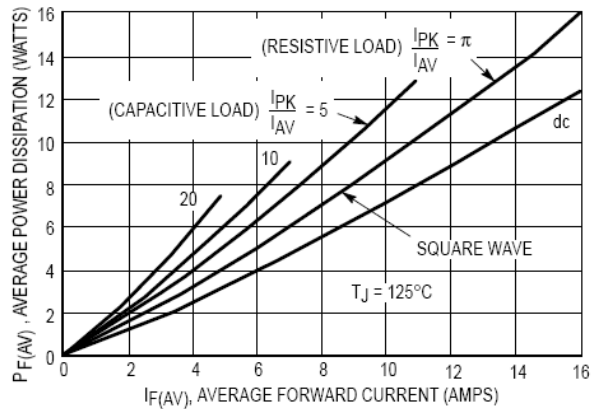


Figure 5. Power Dissipation (Per Leg)

DIGITRON SEMICONDUCTORS

MUR3020WT-MUR3060WT 30A ULTRAFAST RECTIFIER

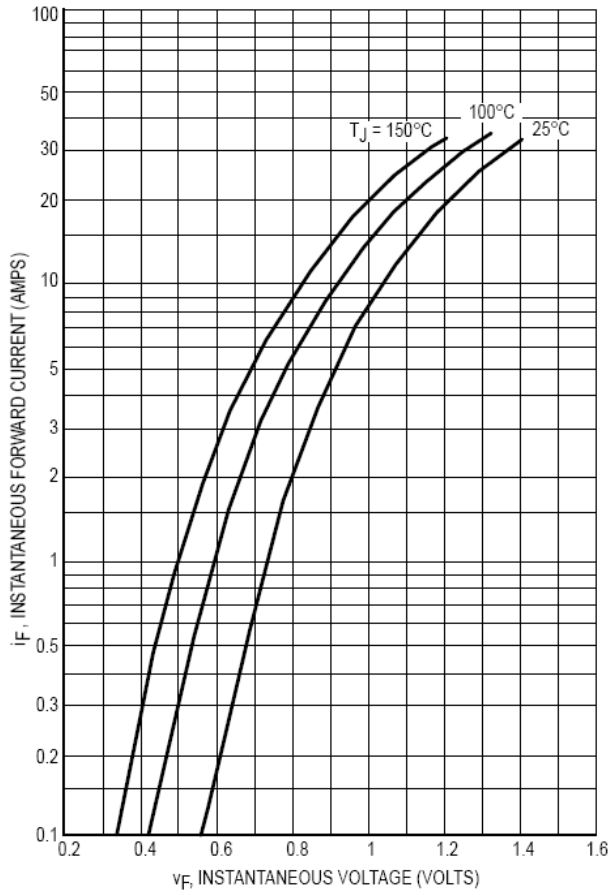
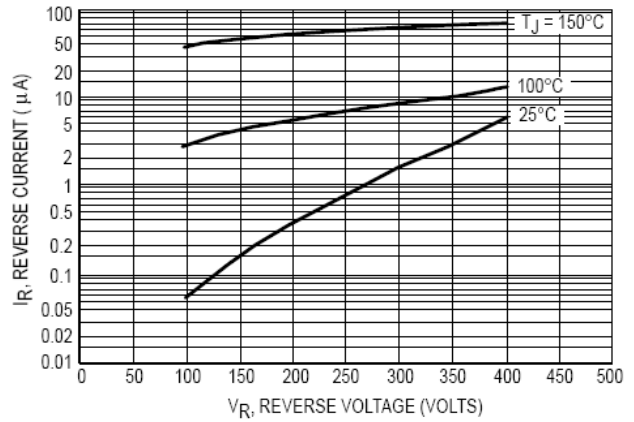


Figure 6. Typical Forward Voltage (Per Leg)



*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)*

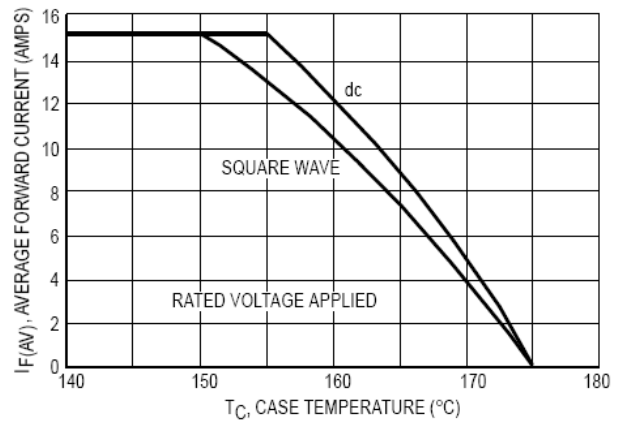


Figure 8. Current Derating, Case (Per Leg)

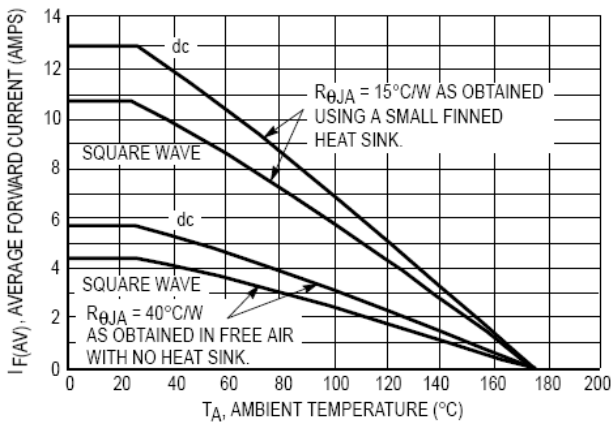


Figure 9. Current Derating, Ambient (Per Leg)

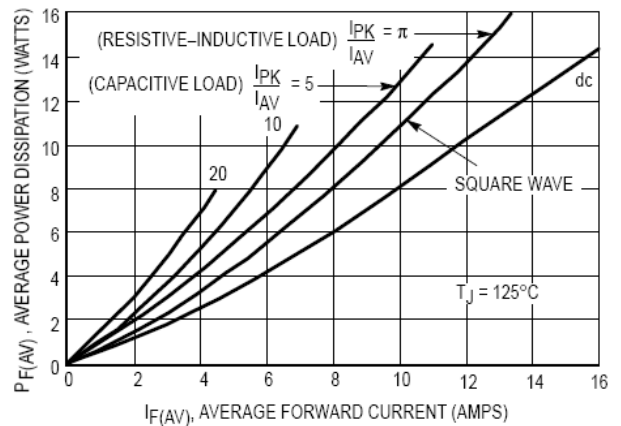


Figure 10. Power Dissipation (Per Leg)

DIGITRON SEMICONDUCTORS

MUR3020WT-MUR3060WT 30A ULTRAFAST RECTIFIER

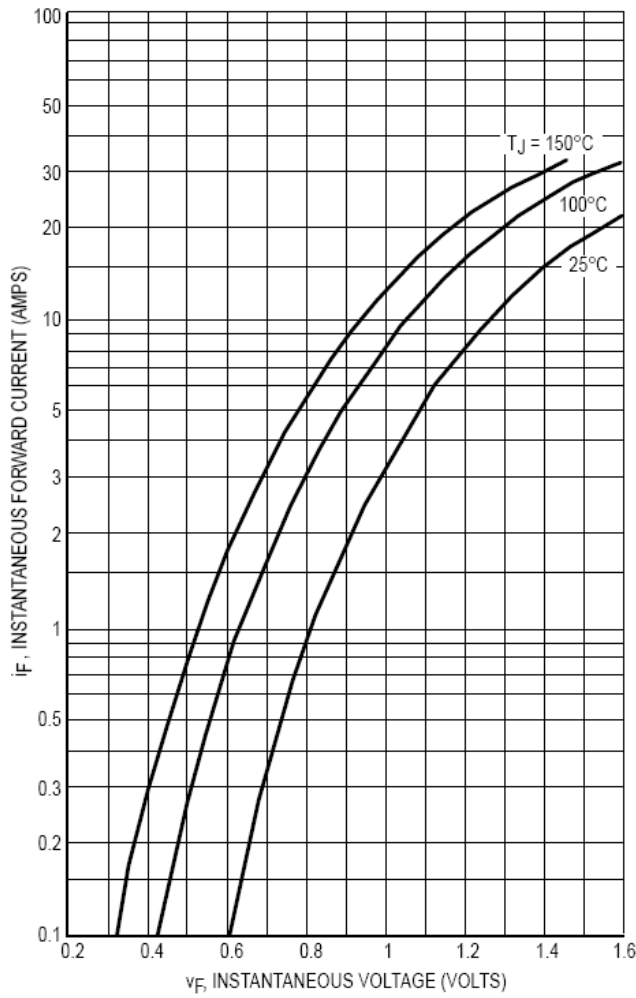
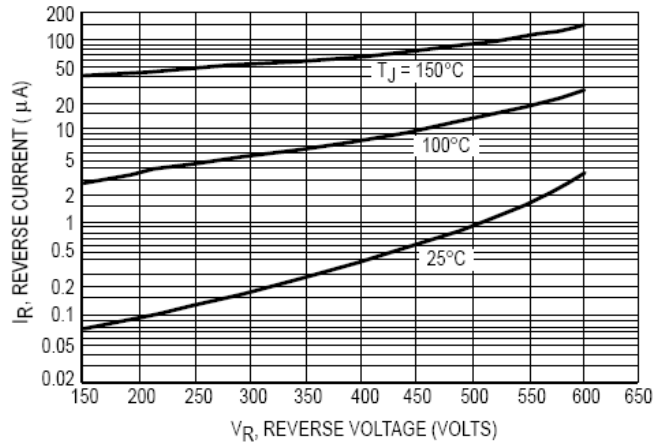


Figure 11. Typical Forward Voltage (Per Leg)



*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)*

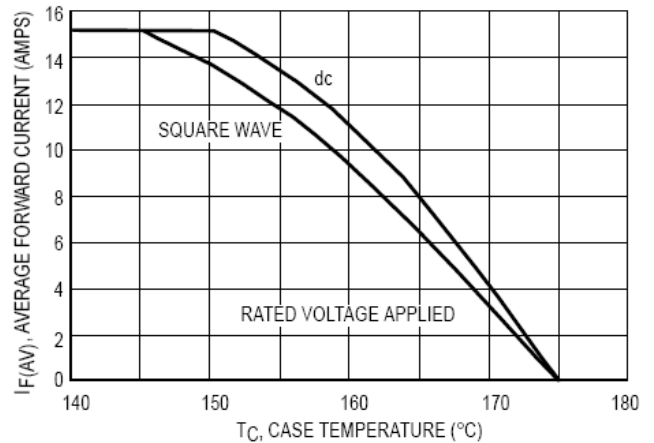


Figure 13. Current Derating, Case (Per Leg)

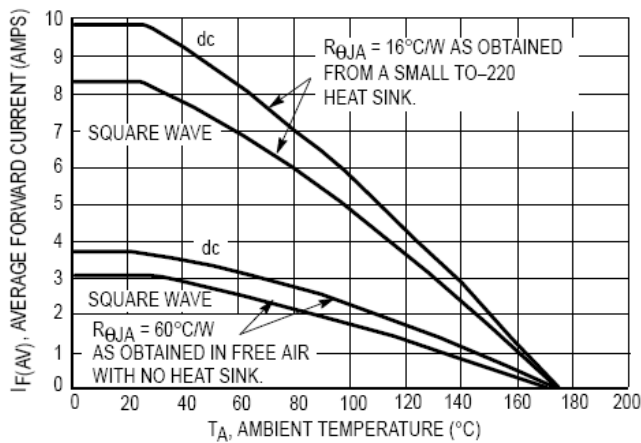


Figure 14. Current Derating, Ambient (Per Leg)

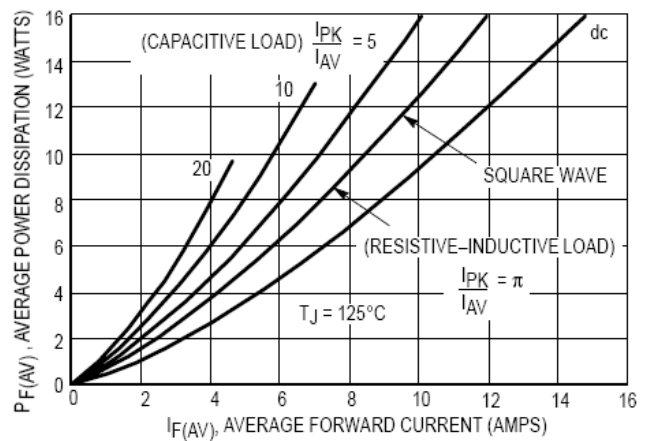


Figure 15. Power Dissipation (Per Leg)

DIGITRON SEMICONDUCTORS

MUR3020WT-MUR3060WT 30A ULTRAFAST RECTIFIER

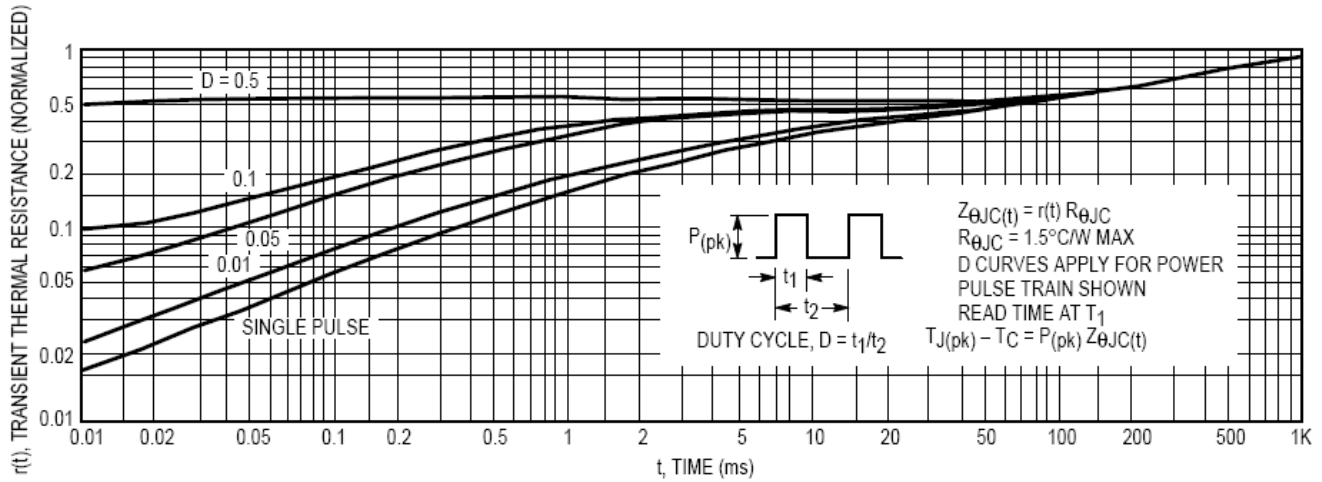


Figure 16. Thermal Response

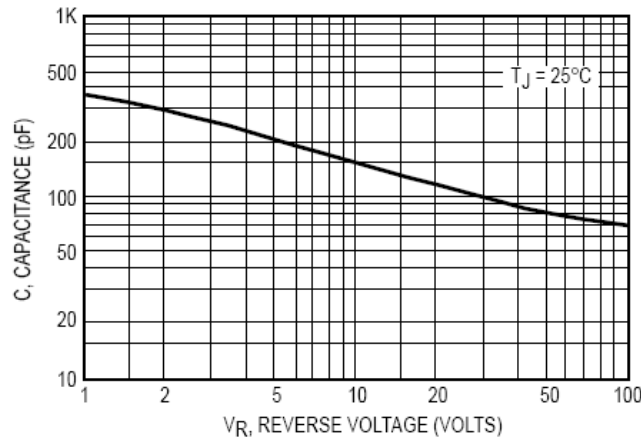


Figure 17. Typical Capacitance (Per Leg)