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# MR2535L-Q

# AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR

## $V_R$ : 20 Volts
## Io : 6 Amperes

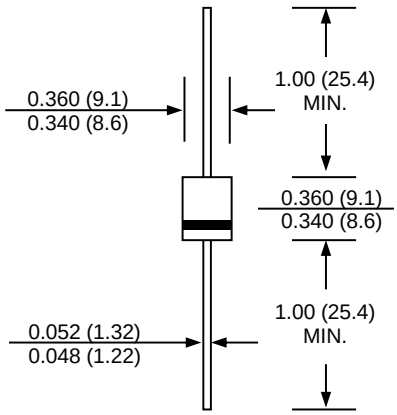
### FEATURES :

* Avalanche Voltage 24 to 32 Volts
* High Power capability
* Increased Capacity by Parallel Operation
* Pb / RoHS Free

### MECHANICAL DATA :

* Case : molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 2.049 grams

**D6**




**Dimensions in inches and ( millimeters )**

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.

| RATING | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Maximum DC Peak Repetitive Reverse Voltage | $V_{RRM}$ | 20 | V |
| Maximum Working Peak Reverse Voltage | $V_{RWM}$ | 20 | V |
| Maximum DC Blocking Voltage | $V_R$ | 20 | V |
| Maximum Breakdown Voltage ( $I_R$ = 100 mA, Tc = 25 °C ) (1) | $V_{BR(max)}$ | 32 | V |
| Minimum Breakdown Voltage ( $I_R$ = 100 mA, Tc = 25 °C ) (1) | $V_{BR(min)}$ | 24 | V |
| Maximum Breakdown Voltage ( $I_R$ = 90 mA, Tc = 150 °C, PW = 80 µs) (1) | $V_{BR}$ | 40 | V |
| Maximum Average Rectified Forward Current ( Single Phase, Resistive Load, 60 Hz, Tc = 125 °C ) | $I_{F(AV)}$ | 6.0 | A |
| Maximum Repetitive Peak Reverse Surge Current ( Time Constant = 10 ms, Duty Cycle ≤ 1%, Tc = 25 °C ) | $I_{RSM}$ | 62 | A |
| Maximum Non-Repetitive Peak Surge Current Surge Supplied at Rated Load Conditions, Halfwave, Single Phase | $I_{FSM}$ | 600 | A |
| Maximum Instantaneous Forward Voltage ($I_F$ = 100 A Tc = 25 °C) (1) | $V_F$ | 1.1 | V |
| Maximum Reverse Current ( $V_R$ = 20 V, Tc = 25 °C ) | $I_R$ | 200 | nA |
| Typical Breakdown Voltage Temperature Coefficient | $V_{(BR)TC}$ | 0.096 | %/°C |
| Typical Forward Voltage Temperature Coefficient @ $I_F$ = 10 mA | $V_{FTC}$ | 2.0 | mV/°C |
| Typical Thermal Resistance Junction to Case | $R_{\Theta JC}$ | 0.8 | °C/W |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{STG}$ | - 65 to + 175 | °C |

**Note** : (1) Pulse Test : Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.



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## RATING AND CHARACTERISTIC CURVES ( MR2535L-Q )

**FIG.1 - TYPICAL FORWARD VOLTAGE**

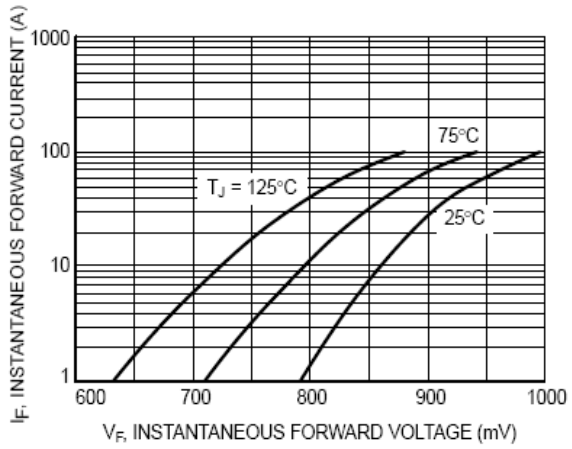



**FIG.2 - TYPICAL REVERSE CURRENT VS. JUNCTION TEMPERATURE**

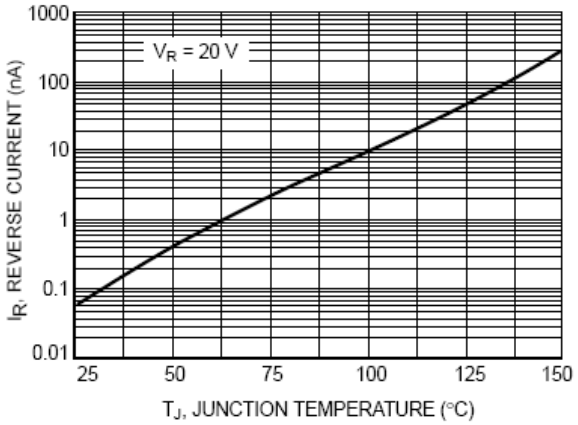



**FIG.3 - TYPICAL CAPACITANCE**

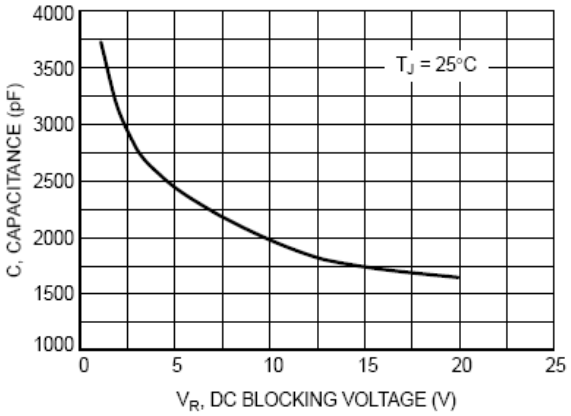



**FIG.4 - MAXIMUM CURRENT RATINGS**

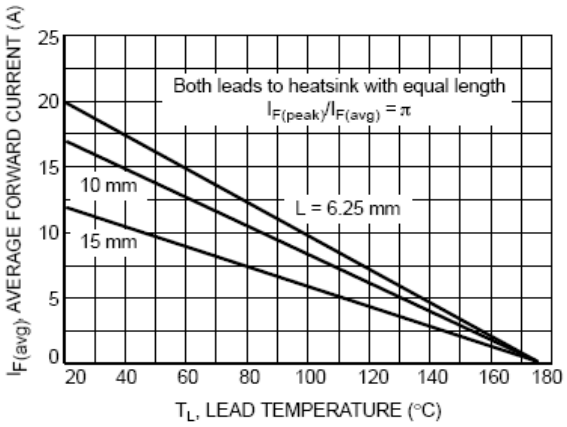



**FIG.5 - THERMAL RESPONSE**

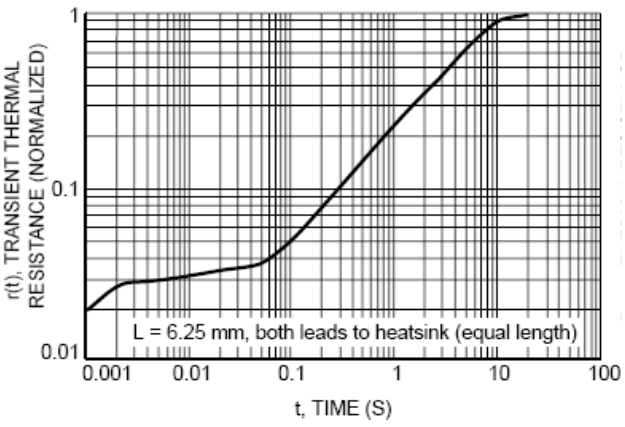
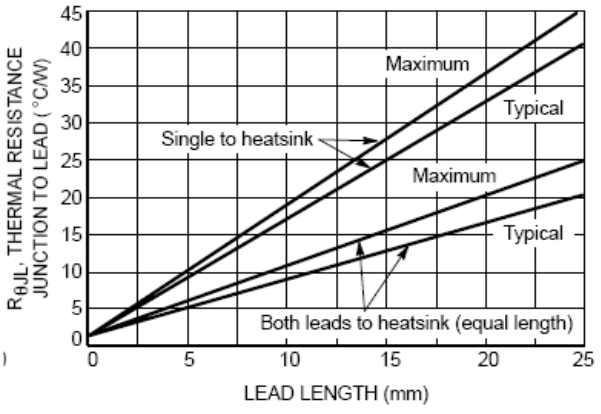



**FIG.6 - STEADY STATE THERMAL RESISTANCE**



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## RATING AND CHARACTERISTIC CURVES ( MR2535L-Q )

**FIG.7 - MAXIMUM PEAK REVERSE CURRENT**

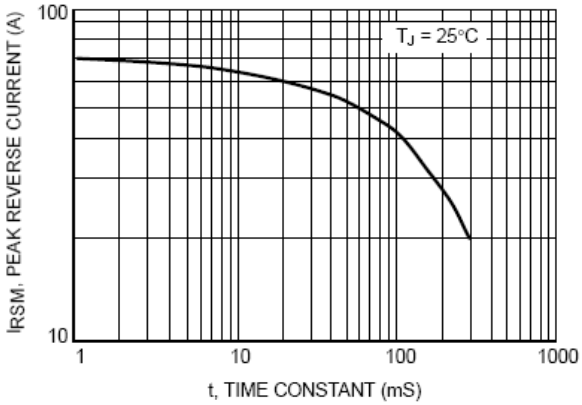



**FIG.8 - MAXIMUM PEAK REVERSE POWER**

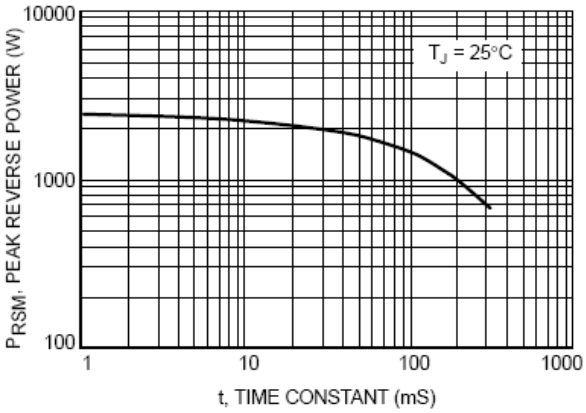



**FIG.9 - MAXIMUM REVERSE ENERGY**

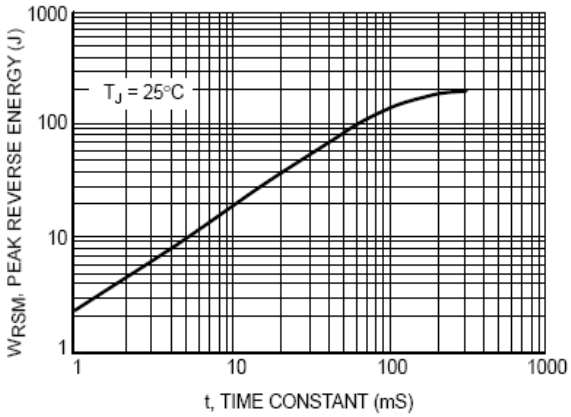



**FIG.10 - REVERSE POWER DERATING**

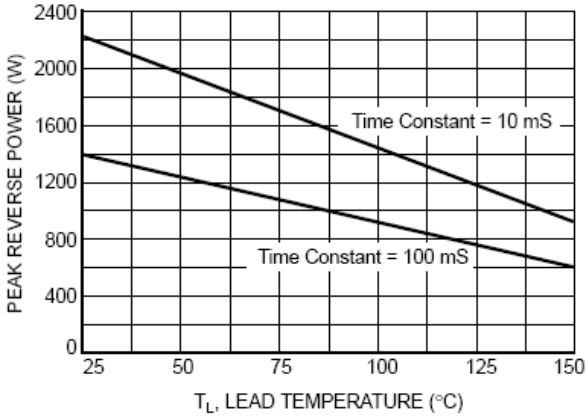



**FIG.11 - TYPICAL CLAMPING FACTOR**

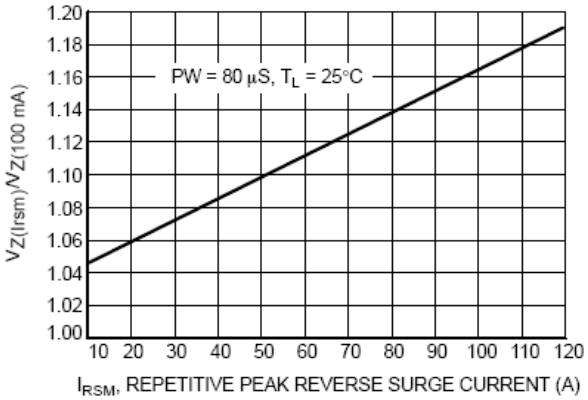
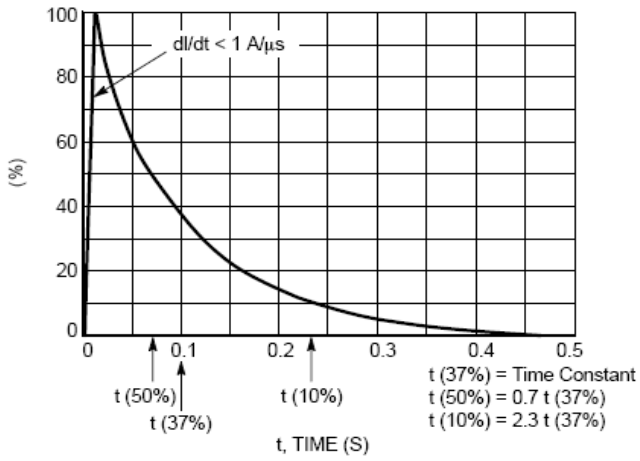



**FIG.12 - LOAD DUMP PULSE CURRENT**



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