



Features

1. Small surface mounting type
2. High reliability

Applications

Voltage stabilization

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

$T_j=25^\circ\text{C}$

| Parameter | Test Conditions | Type | Symbol | Value | Unit |
|---------------------------|-------------------------------|------|-----------|-----------|------------------|
| Power dissipation | $R_{thJA} \leq 300\text{K/W}$ | | P_V | 500 | mW |
| Z-current | | | I_Z | P_V/V_Z | mA |
| Junction temperature | | | T_j | 175 | $^\circ\text{C}$ |
| Storage temperature range | | | T_{stg} | -65~+175 | $^\circ\text{C}$ |

Maximum Thermal Resistance

$T_j=25^\circ\text{C}$

| Parameter | Test Conditions | Symbol | Value | Unit |
|------------------|-----------------------------|------------|-------|------|
| Junction ambient | on PC board 50mm×50mm×1.6mm | R_{thJA} | 500 | K/W |

Electrical Characteristics

$T_j=25^\circ\text{C}$

| Parameter | Test Conditions | Type | Symbol | Min | Typ | Max | Unit |
|-----------------|--------------------|------|--------|-----|-----|-----|------|
| Forward voltage | $I_F=200\text{mA}$ | | V_F | | | 1.5 | V |

Zener diode

| Type | V _{Znom} | I _{ZT} | for V _{ZT} and | r _{zT} | r _{zK} at | I _{ZK} | I _R and | I _R at | V _R | TK _{VZ} |
|---------|-------------------|-----------------|-------------------------|-----------------|--------------------|-----------------|--------------------|-------------------|----------------|------------------|
| ZMM55C. | V | mA | V ¹⁾ | Ω | Ω | mA | μA | mA ²⁾ | V | %/K |
| 2V4 | 2.4 | 5 | 2.28~2.56 | <85 | <600 | 1 | <50 | <100 | 1 | -0.09~-0.06 |
| 2V7 | 2.7 | 5 | 2.5~2.9 | <85 | <600 | 1 | <10 | <50 | 1 | -0.09~-0.06 |
| 3V0 | 3.0 | 5 | 2.8~3.2 | <90 | <600 | 1 | <4 | <40 | 1 | -0.08~-0.05 |
| 3V3 | 3.3 | 5 | 3.1~3.5 | <90 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 3V6 | 3.6 | 5 | 3.4~3.8 | <90 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 3V9 | 3.9 | 5 | 3.7~4.1 | <90 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 4V3 | 4.3 | 5 | 4.0~4.6 | <90 | <600 | 1 | <1 | <20 | 1 | -0.06~-0.03 |
| 4V7 | 4.7 | 5 | 4.4~5.0 | <80 | <600 | 1 | <0.5 | <10 | 1 | -0.05~+0.02 |
| 5V1 | 5.1 | 5 | 4.8~5.4 | <60 | <550 | 1 | <0.1 | <2 | 1 | -0.02~+0.02 |
| 5V6 | 5.6 | 5 | 5.2~6.0 | <40 | <450 | 1 | <0.1 | <2 | 1 | -0.05~+0.05 |
| 6V2 | 6.2 | 5 | 5.8~6.6 | <10 | <200 | 1 | <0.1 | <2 | 2 | 0.03~0.06 |
| 6V8 | 6.8 | 5 | 6.4~7.2 | <8 | <150 | 1 | <0.1 | <2 | 3 | 0.03~0.07 |
| 7V5 | 7.5 | 5 | 7.0~7.9 | <7 | <50 | 1 | <0.1 | <2 | 5 | 0.03~0.07 |
| 8V2 | 8.2 | 5 | 7.7~8.7 | <7 | <50 | 1 | <0.1 | <2 | 6.2 | 0.03~0.08 |
| 9V1 | 9.1 | 5 | 8.5~9.6 | <10 | <50 | 1 | <0.1 | <2 | 6.8 | 0.03~0.09 |
| 10 | 10 | 5 | 9.4~10.6 | <15 | <70 | 1 | <0.1 | <2 | 7.5 | 0.03~0.1 |
| 11 | 11 | 5 | 10.4~11.6 | <20 | <70 | 1 | <0.1 | <2 | 8.2 | 0.03~0.11 |
| 12 | 12 | 5 | 11.4~12.7 | <20 | <90 | 1 | <0.1 | <2 | 9.1 | 0.03~0.11 |
| 13 | 13 | 5 | 12.4~14.1 | <26 | <110 | 1 | <0.1 | <2 | 10 | 0.03~0.11 |
| 15 | 15 | 5 | 13.8~15.6 | <30 | <110 | 1 | <0.1 | <2 | 11 | 0.03~0.11 |
| 16 | 16 | 5 | 15.3~17.1 | <40 | <170 | 1 | <0.1 | <2 | 12 | 0.03~0.11 |
| 18 | 18 | 5 | 16.8~19.1 | <50 | <170 | 1 | <0.1 | <2 | 13 | 0.03~0.11 |
| 20 | 20 | 5 | 18.8~21.2 | <55 | <220 | 1 | <0.1 | <2 | 15 | 0.03~0.11 |
| 22 | 22 | 5 | 20.8~23.3 | <55 | <220 | 1 | <0.1 | <2 | 16 | 0.04~0.12 |
| 24 | 24 | 5 | 22.8~25.6 | <80 | <220 | 1 | <0.1 | <2 | 18 | 0.04~0.12 |
| 27 | 27 | 5 | 25.1~28.9 | <80 | <220 | 1 | <0.1 | <2 | 20 | 0.04~0.12 |
| 30 | 30 | 5 | 28~32 | <80 | <220 | 1 | <0.1 | <2 | 22 | 0.04~0.12 |
| 33 | 33 | 5 | 31~35 | <80 | <220 | 1 | <0.1 | <2 | 24 | 0.04~0.12 |
| 36 | 36 | 5 | 34~38 | <80 | <220 | 1 | <0.1 | <2 | 27 | 0.04~0.12 |
| 39 | 39 | 2.5 | 37~41 | <90 | <500 | 0.5 | <0.1 | <5 | 30 | 0.04~0.12 |
| 43 | 43 | 2.5 | 40~46 | <90 | <600 | 0.5 | <0.1 | <5 | 33 | 0.04~0.12 |
| 47 | 47 | 2.5 | 44~50 | <110 | <700 | 0.5 | <0.1 | <5 | 36 | 0.04~0.12 |
| 51 | 51 | 2.5 | 48~54 | <125 | <700 | 0.5 | <0.1 | <10 | 39 | 0.04~0.12 |
| 56 | 56 | 2.5 | 52~60 | <135 | <1000 | 0.5 | <0.1 | <10 | 43 | 0.04~0.12 |
| 62 | 62 | 2.5 | 58~66 | <150 | <1000 | 0.5 | <0.1 | <10 | 47 | 0.04~0.12 |
| 68 | 68 | 2.5 | 64~72 | <200 | <1000 | 0.5 | <0.1 | <10 | 51 | 0.04~0.12 |
| 75 | 75 | 2.5 | 70~79 | <250 | <1500 | 0.5 | <0.1 | <10 | 56 | 0.04~0.12 |

¹⁾ Tighter tolerances available request:

ZMM55B... ±2% of V_{Znom}

ZMM55C... ±5% of V_{Znom}

²⁾ at T_J=150°C

Characteristics ($T_j=25^\circ\text{C}$ unless otherwise specified)

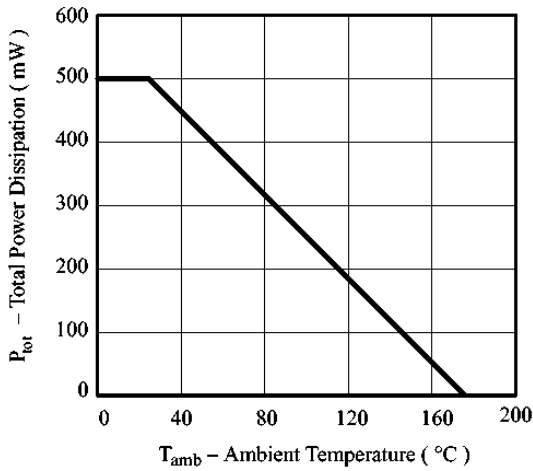


Figure 1. Total Power Dissipation vs. Ambient Temperature

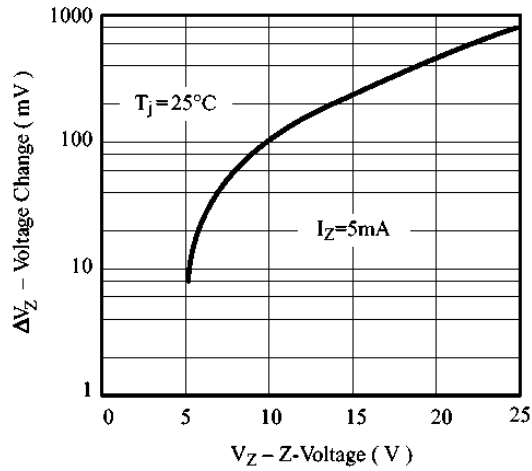


Figure 2. Typical Change of Working Voltage under Operating Conditions at $T_{amb}=25^\circ\text{C}$

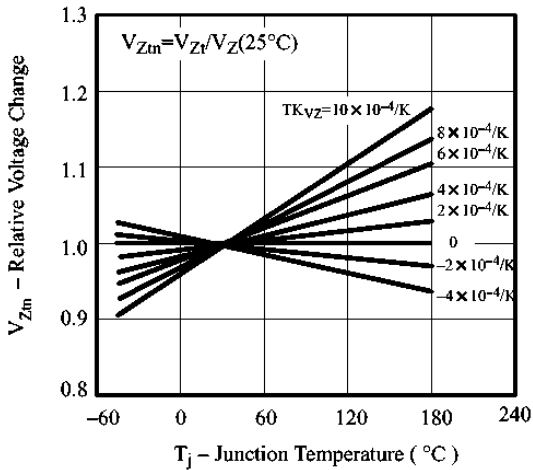


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

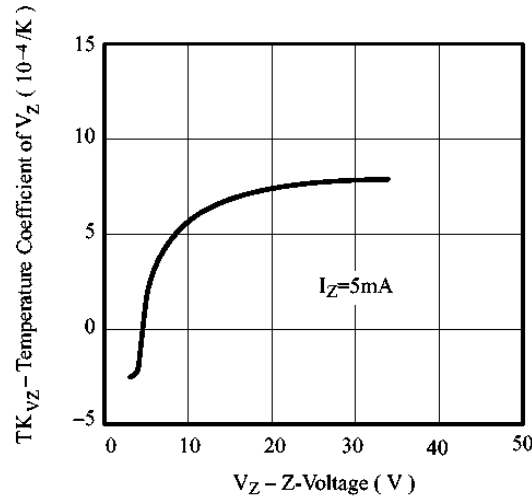


Figure 4. Temperature Coefficient of V_Z vs. Z-Voltage

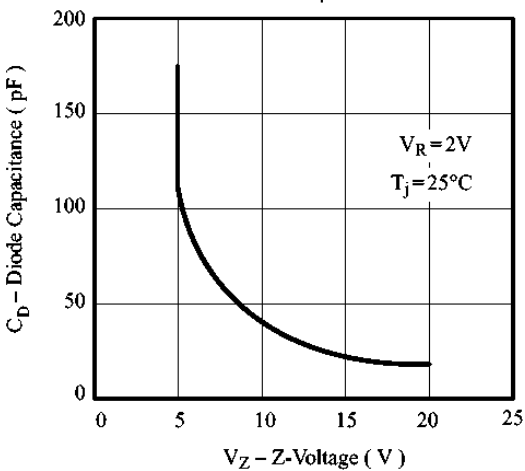


Figure 5. Diode Capacitance vs. Z-Voltage

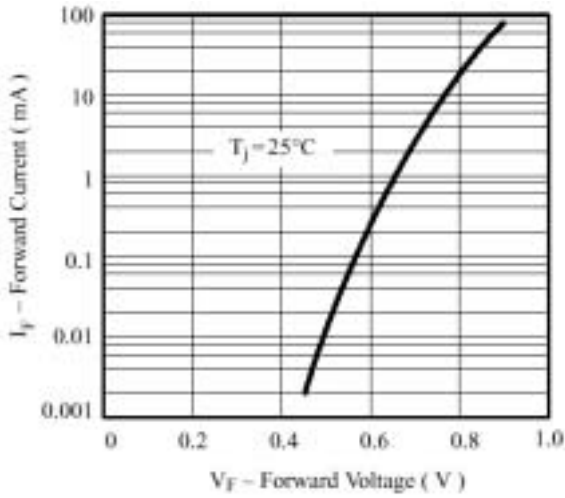


Figure 6. Forward Current vs. Forward Voltage

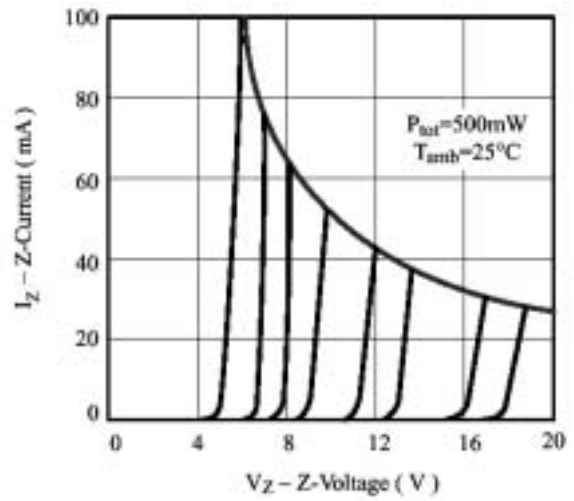


Figure 7. Z-Current vs. Z-Voltage

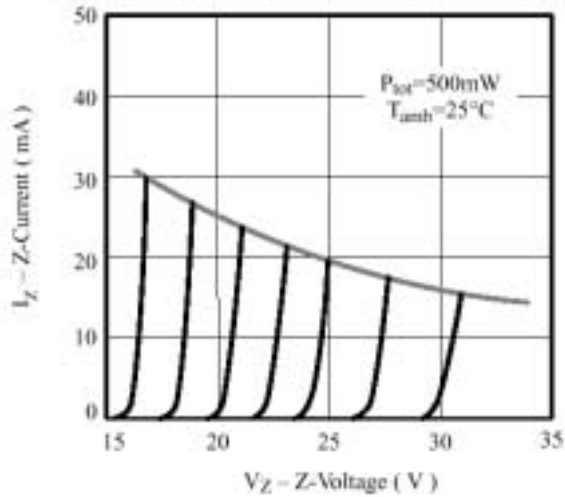


Figure 8. Z-Current vs. Z-Voltage

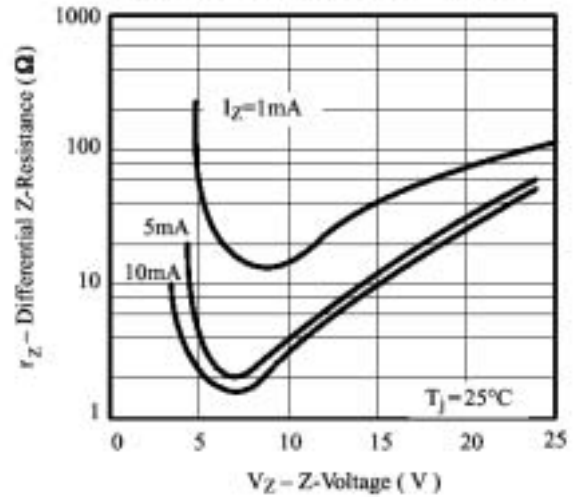


Figure 9. Differential Z-Resistance vs. Z-Voltage

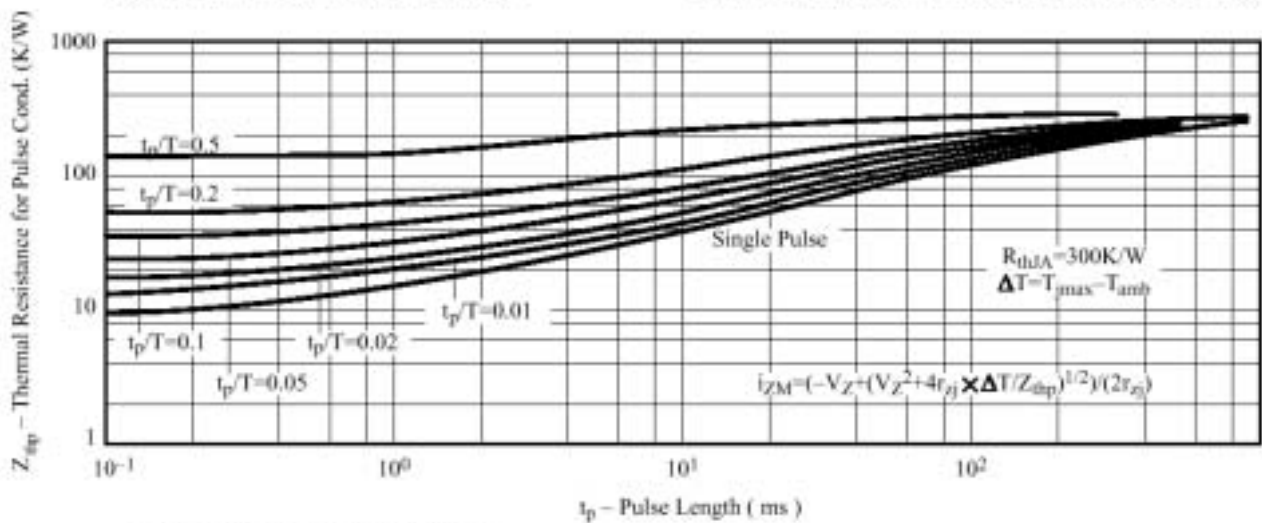
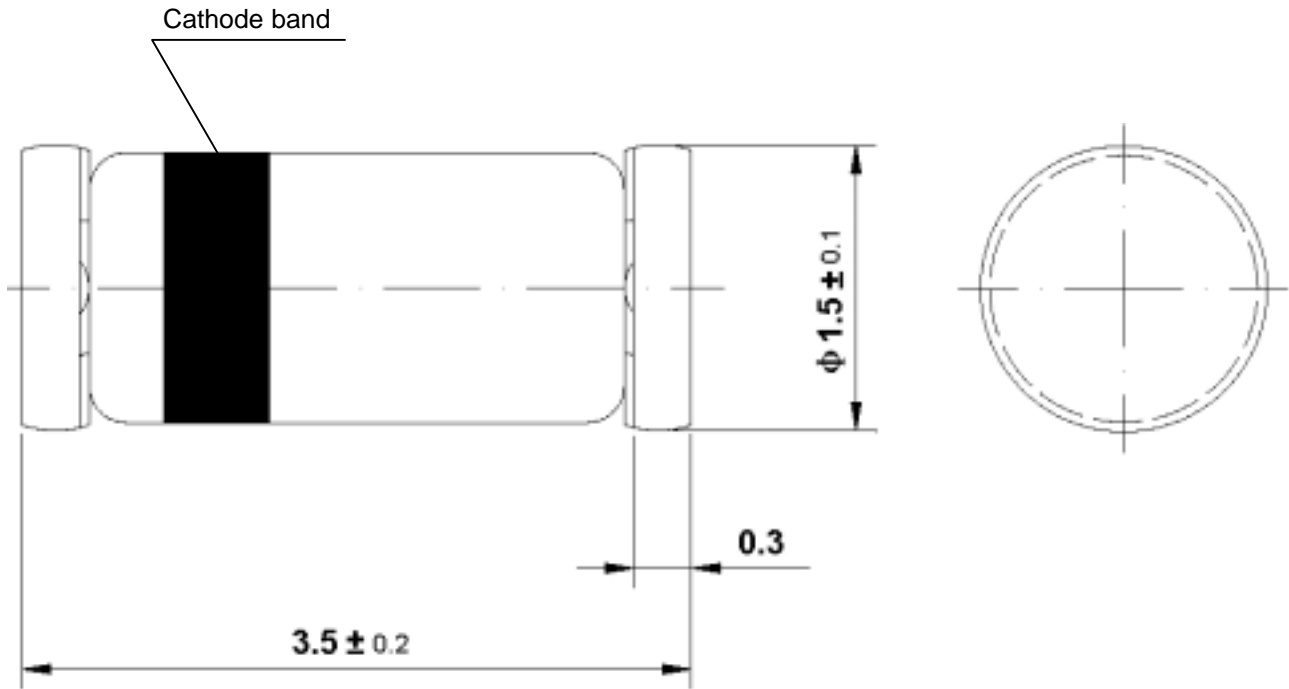


Figure 10. Thermal Response

Dimensions in mm



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