



LL55C Series

Zener diode

Voltage Range
2.4 to 75 Volts

Features

- 1.Small surface mounting type
- 2.High reliability

Applications

Voltage stabilization

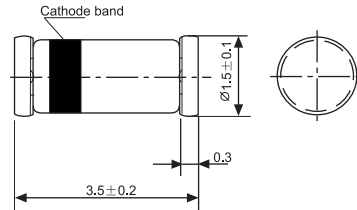
Construction

Silicon epitaxial planar

Absolute Maximum Ratings

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

Glass Case
Mini MELF/SOD 80
JEDEC DO -213AA



| Parameter | Test Conditions | Type | Symbol | Value | Unit |
|---------------------------|-------------------------------|------|-----------|-----------|--------------------|
| Power dissipation | $R_{thJA} \leq 300\text{K/W}$ | | P_D | 500 | mW |
| Z-current | | | I_z | P_D/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 x 50mm x 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 |



| 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} |
|-------|-------------------|-----------------|-------------------------|-----------------|--------------------|-----------------|--------------------|-------------------|----------------|------------------|
| LL55C | V | mA | V | Ω | Ω | mA | μA | μA | 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 | <85 | <600 | 1 | <4 | <40 | 1 | -0.08~-0.05 |
| 3V3 | 3.3 | 5 | 3.1~3.5 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 3V6 | 3.6 | 5 | 3.4~3.8 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 3V9 | 3.9 | 5 | 3.7~4.1 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08~-0.05 |
| 4V3 | 4.3 | 5 | 4.0~4.6 | <75 | <600 | 1 | <1 | <20 | 1 | -0.06~-0.03 |
| 4V7 | 4.7 | 5 | 4.4~5.0 | <60 | <600 | 1 | <0.5 | <10 | 1 | -0.05~+0.02 |
| 5V1 | 5.1 | 5 | 4.8~5.4 | <35 | <550 | 1 | <0.1 | <2 | 1 | -0.02~+0.02 |
| 5V6 | 5.6 | 5 | 5.2~6.0 | <25 | <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:

LL55A...±1% of V_{znom}

LL55B...±2% of V_{znom}

LL55F...±3% of V_{znom}

2) at T_j=150°C

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

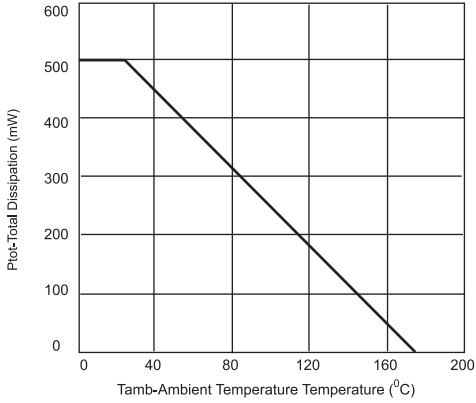


Figure 1.Total Power Dissipation vs. Ambient Temperature

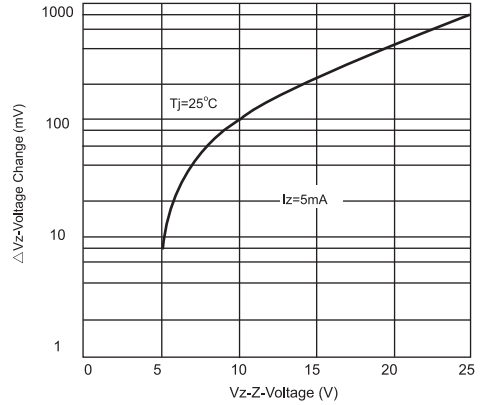


Figure 2. Typical Change of Working Voltage under Operating Conditions at $T_{amb}=25^{\circ}\text{C}$

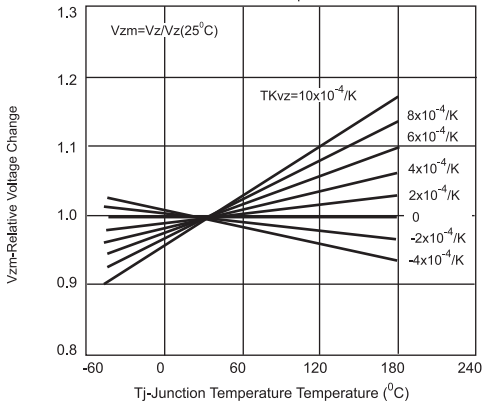


Figure 3. Typical of Working Voltage vs. Junction Temperature

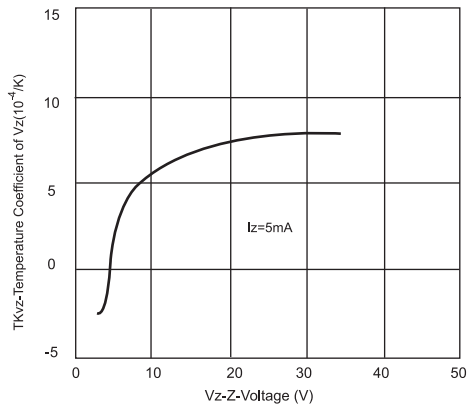


Figure 4. Temperature Coefficient of V_z vs. Z-Voltage

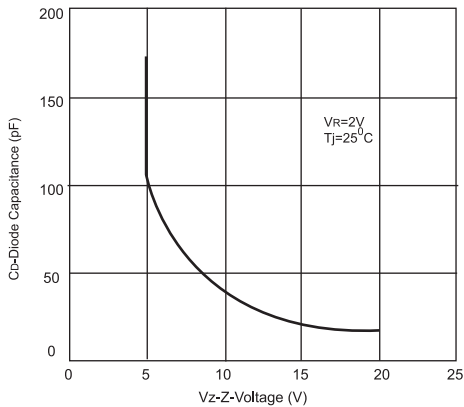


Figure 5.Diode Capacitance vs.Z-Voltage

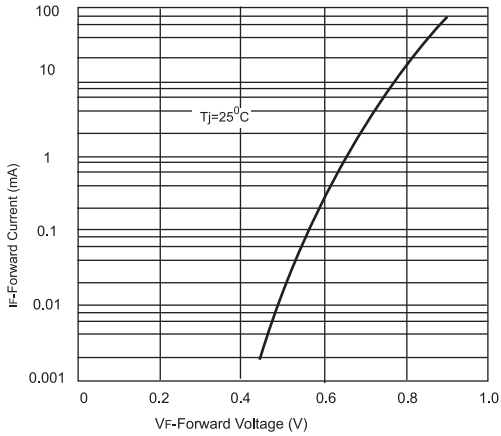


Figure 6. Forward Current vs. Forward Voltage

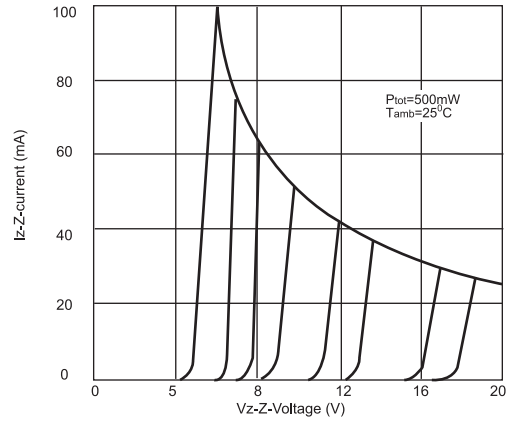


Figure 7. Z-Current vs. Z-Voltage

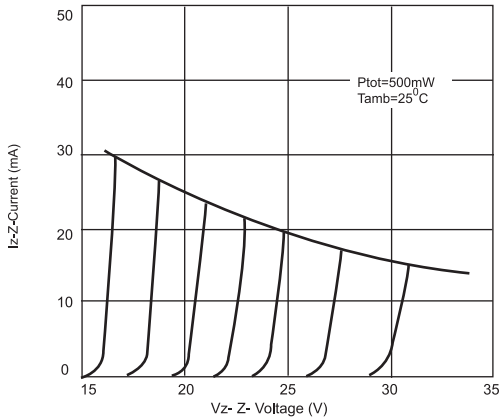


Figure 8. Z-Current vs. Z-Voltage

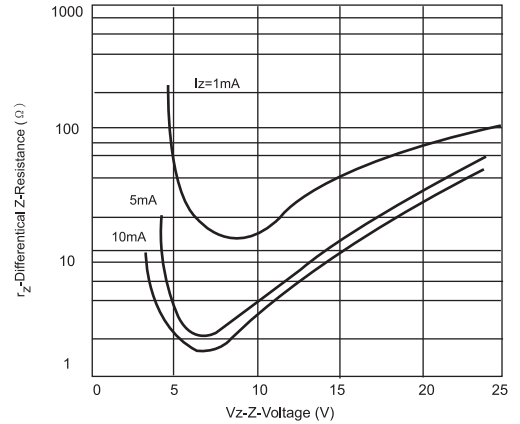


Figure 9. Differential Z-Resistance vs. Z-Voltage

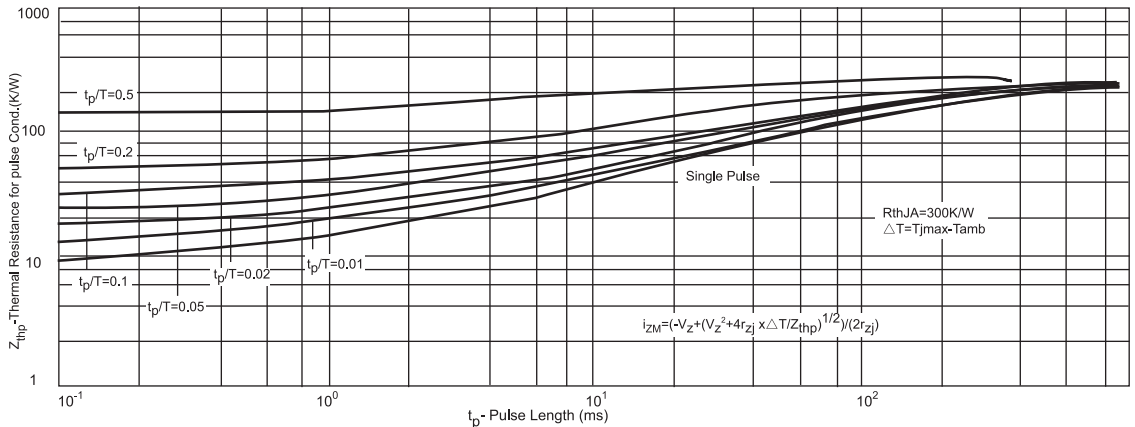


Figure 10. Thermal Response