

1 Watt LL-41 Hermetically Sealed Glass Zener Voltage Regulators



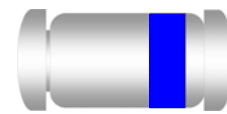
SURFACE MOUNT
LL-41

Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

| Parameter | Value | Units |
|--|-------------|-----------------------------|
| Storage Temperature Range | -65 to +200 | $^\circ\text{C}$ |
| Maximum Junction Operating Temperature | +175 | $^\circ\text{C}$ |
| Total Device Dissipation | 1.0 | Watt |
| Thermal Resistance Junction to Ambient | 170 | $^\circ\text{C} / \text{W}$ |

These ratings are limiting values above which the serviceability of the diode may be impaired.

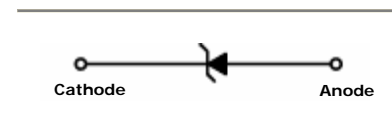
DEVICE MARKING DIAGRAM



Cathode Band Color: Blue

Specification Features:

- Zener Voltage Range 3.3 to 56 Volts
- LL-41 MELF Package (JEDEC DO-213AB)
- Surface Mount Devices (SMD)
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Terminals Are Readily Solderable
- RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Color band Indicates Negative Polarity



ELECTRICAL SYMBOL

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Device Type | $V_Z @ I_{ZT}$ (Volts) Nominal | I_{ZT} (mA) | $Z_{ZT} @ I_{ZT}$ (Ω) Max | I_{ZK} (mA) | $Z_{ZK} @ I_{ZK}$ (Ω) Max | $I_R @ V_R$ (μA) Max | V_R (Volts) |
|-------------|--------------------------------------|------------------|--|------------------|--|---|------------------|
| TCZM4728A | 3.3 | 76 | 10 | 1 | 400 | 100 | 1 |
| TCZM4729A | 3.6 | 69 | 10 | 1 | 400 | 100 | 1 |
| TCZM4730A | 3.9 | 64 | 9 | 1 | 400 | 50 | 1 |
| TCZM4731A | 4.3 | 58 | 9 | 1 | 400 | 10 | 1 |
| TCZM4732A | 4.7 | 53 | 8 | 1 | 500 | 10 | 1 |
| TCZM4733A | 5.1 | 49 | 7 | 1 | 550 | 10 | 1 |
| TCZM4734A | 5.6 | 45 | 5 | 1 | 600 | 10 | 2 |
| TCZM4735A | 6.2 | 41 | 2 | 1 | 700 | 10 | 3 |
| TCZM4736A | 6.8 | 37 | 3.5 | 1 | 700 | 10 | 4 |
| TCZM4737A | 7.5 | 34 | 4 | 0.5 | 700 | 10 | 5 |
| TCZM4738A | 8.2 | 31 | 4.5 | 0.5 | 700 | 10 | 6 |
| TCZM4739A | 9.1 | 28 | 5 | 0.5 | 700 | 10 | 7 |
| TCZM4740A | 10 | 25 | 7 | 0.25 | 700 | 10 | 7.6 |
| TCZM4741A | 11 | 23 | 8 | 0.25 | 700 | 5 | 8.4 |
| TCZM4742A | 12 | 21 | 9 | 0.25 | 700 | 5 | 9.1 |
| TCZM4743A | 13 | 19 | 10 | 0.25 | 700 | 5 | 9.9 |
| TCZM4744A | 15 | 17 | 14 | 0.25 | 700 | 5 | 11.4 |
| TCZM4745A | 16 | 15.5 | 16 | 0.25 | 700 | 5 | 12.2 |
| TCZM4746A | 18 | 14 | 20 | 0.25 | 700 | 5 | 13.7 |

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Device Type | VZ @ IZT (Volts) Nominal | IZT (mA) | ZZT @ IZT (Ω) Max | IZK (mA) | ZZK @ IZK (Ω) Max | IR @ VR (μA) Max | VR (Volts) |
|-------------|--------------------------------|-------------|----------------------------------|-------------|----------------------------------|-------------------------------------|---------------|
| TCZM4747A | 20 | 12.5 | 22 | 0.25 | 750 | 5 | 15.2 |
| TCZM4748A | 22 | 11.5 | 23 | 0.25 | 750 | 5 | 16.7 |
| TCZM4749A | 24 | 10.5 | 25 | 0.25 | 750 | 5 | 18.2 |
| TCZM4750A | 27 | 9.5 | 35 | 0.25 | 750 | 5 | 20.6 |
| TCZM4751A | 30 | 8.5 | 40 | 0.25 | 1000 | 5 | 22.8 |
| TCZM4752A | 33 | 7.5 | 45 | 0.25 | 1000 | 5 | 25.1 |
| TCZM4753A | 36 | 7 | 50 | 0.25 | 1000 | 5 | 27.4 |
| TCZM4754A | 39 | 6.5 | 60 | 0.25 | 1000 | 5 | 29.7 |
| TCZM4755A | 43 | 6 | 70 | 0.25 | 1500 | 5 | 32.7 |
| TCZM4756A | 47 | 5.5 | 80 | 0.25 | 1500 | 5 | 35.8 |
| TCZM4757A | 51 | 5 | 95 | 0.25 | 1500 | 5 | 38.8 |
| TCZM4758A | 56 | 4.5 | 110 | 0.25 | 2000 | 5 | 42.6 |

V_F Forward Voltage = 1.2 V Maximum @ $I_F = 200$ mA for all types

Notes:

1. TOLERANCE AND TYPE NUMBER DESIGNATION (V_Z)

The type numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$. Device tolerance of $\pm 2\%$ is indicated by a "C" instead of an "A".

2. SPECIALS AVAILABLE INCLUDE

Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

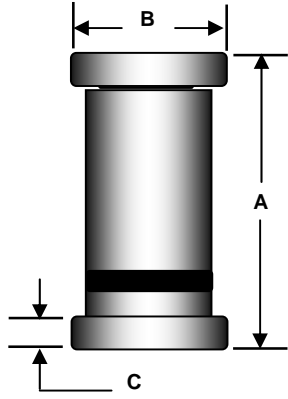
3. ZENER VOLTAGE (V_Z) MEASUREMENT

The zener voltage (V_Z) is tested under pulse condition.

4. ZENER IMPEDANCE (Z_Z) DERIVATION

The zener impedance is derived from the 60 cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} .

Package Outline

| Package | Case Outline | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|--|------|-------------|-------|--|--|-------------|--|--------|--|-----|-----|-----|-----|---|------|------|-------|-------|---|------|------|-------|-------|---|------|------|-------|-------|
| LL- 41 MELF |  <table border="1" data-bbox="746 526 1412 817"> <thead> <tr> <th rowspan="3">DIM</th> <th colspan="4">LL- 41 MELF</th> </tr> <tr> <th colspan="2">Millimeters</th> <th colspan="2">Inches</th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4.80</td> <td>5.20</td> <td>0.189</td> <td>0.205</td> </tr> <tr> <td>B</td> <td>2.39</td> <td>2.66</td> <td>0.094</td> <td>0.105</td> </tr> <tr> <td>C</td> <td>0.41</td> <td>0.55</td> <td>0.016</td> <td>0.022</td> </tr> </tbody> </table> | DIM | LL- 41 MELF | | | | Millimeters | | Inches | | Min | Max | Min | Max | A | 4.80 | 5.20 | 0.189 | 0.205 | B | 2.39 | 2.66 | 0.094 | 0.105 | C | 0.41 | 0.55 | 0.016 | 0.022 |
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| C | 0.41 | 0.55 | 0.016 | 0.022 | | | | | | | | | | | | | | | | | | | | | | | | | |


Notes:

1. All dimensions are within DO-213AB JEDEC standard.
2. LL-41 MELF polarity denoted by cathode band.

This datasheet presents technical data of Tak Cheong's Zener Diodes. Complete specifications for the individual devices are provided in the form of datasheets. A comprehensive Selector Guide is included to simplify the task of choosing the best set of components required for a specific application. For additional information, please visit our website <http://www.takcheong.com>.

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