

# 1 Watt LL-41 Hermetically Sealed Glass Zener Voltage Regulators

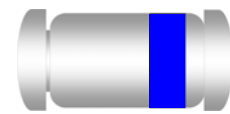


SURFACE MOUNT  
LL-41

## 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	$^\circ\text{C} / \text{W}$

DEVICE MARKING DIAGRAM

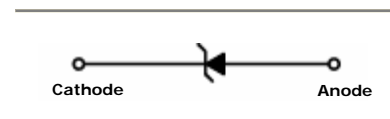


Cathode Band Color: Blue

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

## 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)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_{ZK}$ (mA)	$Z_{ZK} @ I_{ZK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) 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 ( $\Omega$ ) Max	IZK (mA)	ZZK @ IZK ( $\Omega$ ) Max	IR @ VR ( $\mu\text{A}$ ) 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.

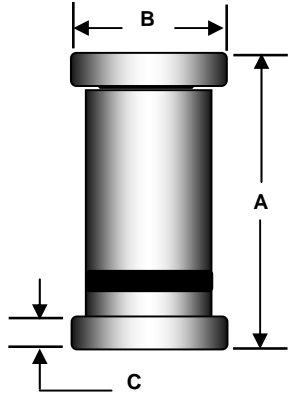
**3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

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

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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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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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