

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

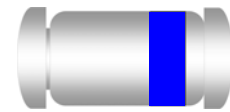


SURFACE MOUNT  
LL-41

## 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.

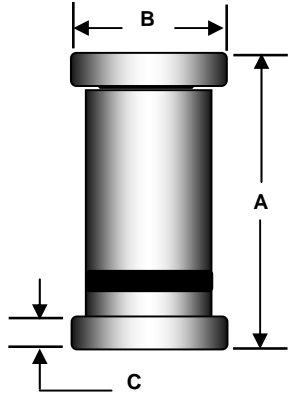
**3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

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"> <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>.

Although information in this datasheet has been carefully checked, no responsibility for the inaccuracies can be assumed by Tak Cheong. Please consult your nearest Tak Cheong's sales office for further assistance.

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