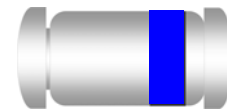


1 Watt LL-41 Hermetically Sealed Glass Zener Voltage Regulators



SURFACE MOUNT
LL-41

DEVICE MARKING DIAGRAM



Cathode Band Color: Blue

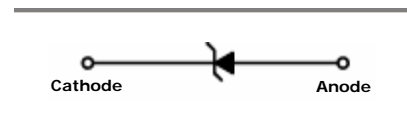
Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

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.

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 leads are readily solderable
- Cathode indicated by polarity band



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
TCZM4747A	20	12.5	22	0.25	750	5	15.2
TCZM4748A	22	11.5	23	0.25	750	5	16.7

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)
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

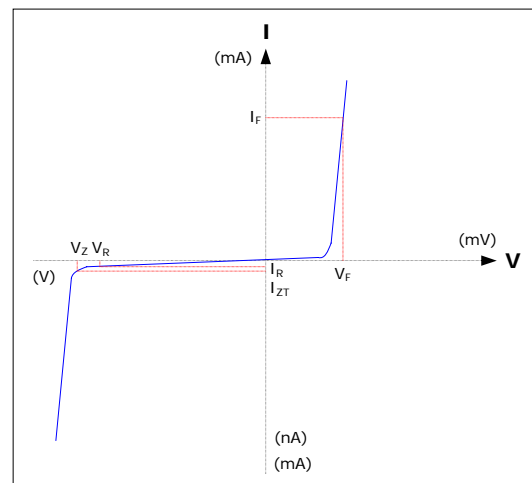
Notes:

- The device numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.
- For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong's representative.
- 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 to I_{ZT} or I_{ZK} .

Electrical Symbol Definition

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Breakdown Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F

Typical Characteristics

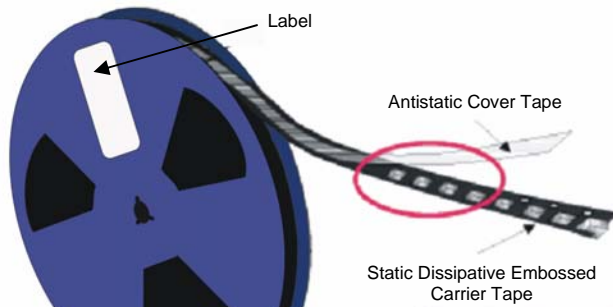


Ordering Information

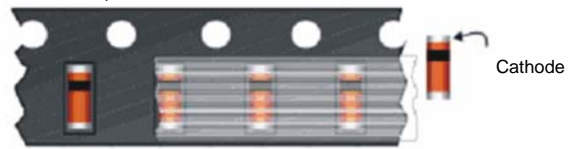
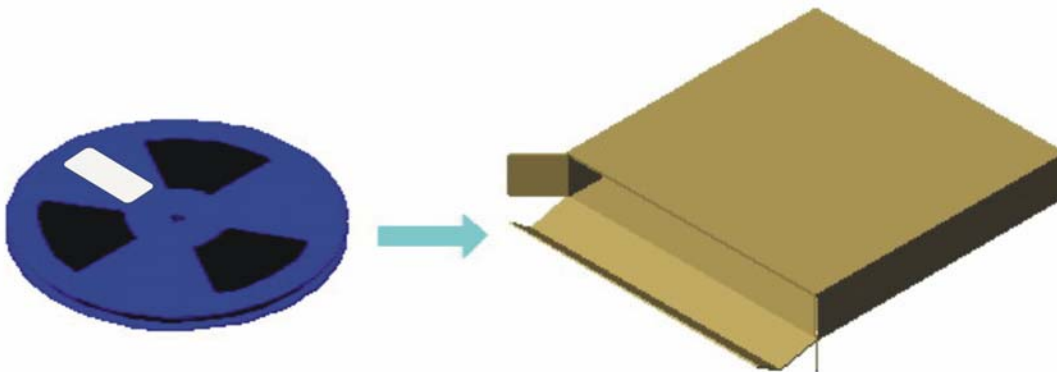
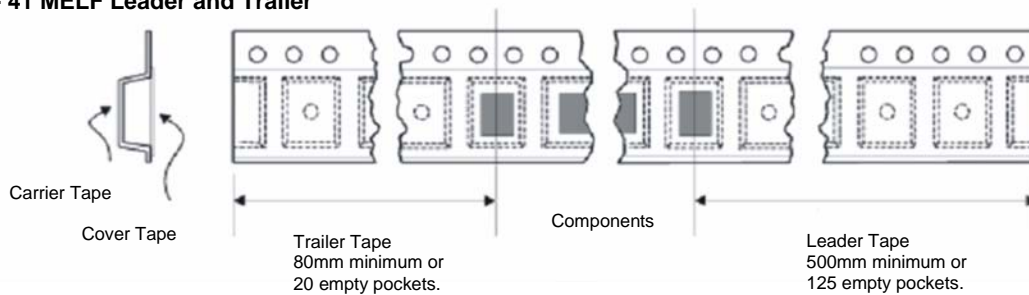
Device	Packing options	Package	Quantity
TCZM47xxA	7" Reel	Tape and Reel	1,500
TCZM47xxAR13	13" Reel	Tape and Reel	5,000
TCZM47xxA	Others	(...contact Tak Cheong sales representatives)	

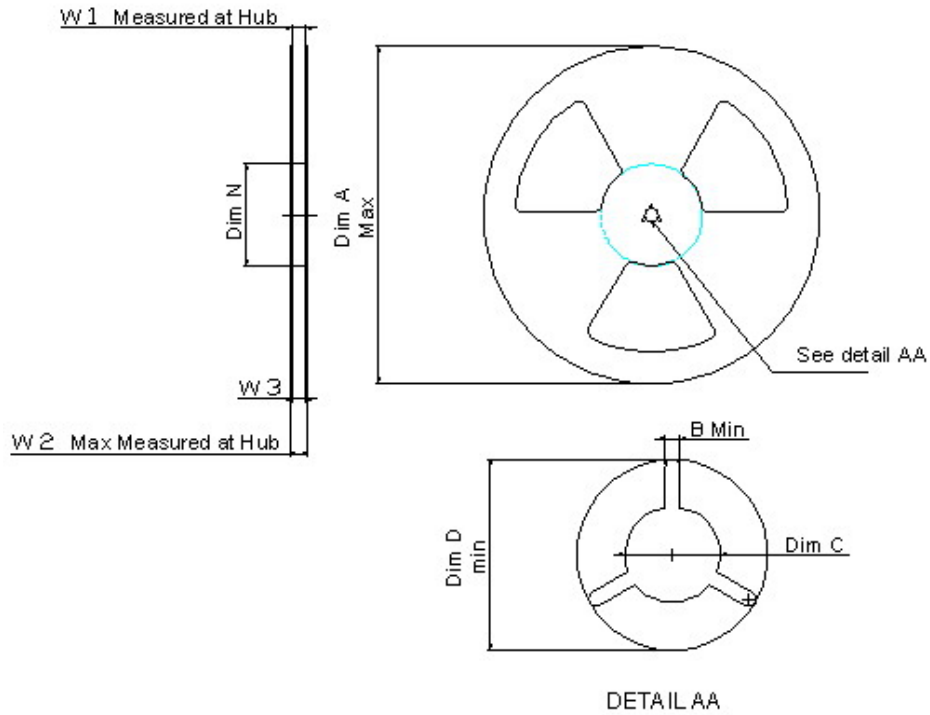
LL41 MELF Tape Packaging Standards

This standard practices for surface-mount tape packaging of leadless (MELF) components meets the requirements of EIA Standard RS-418-A

LL- 41 MELF Tape & Reel Packaging Information
LL- 41 MELF Packaging Outline

Packaging Description:

LL- 41 MELF parts are shipped in tape and reel. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 7" or 178mm diameter reel. The reels are blue in color and made of recyclable plastic. Other option comes in 10,000 units per 13" or 330mm diameter reel

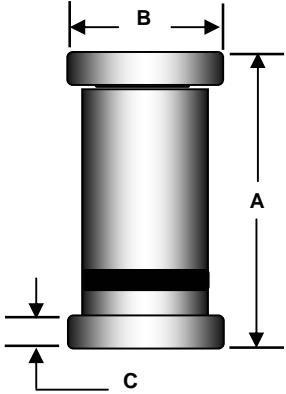

LL-41 MELF UNIT ORIENTATION

LL- 41 MELF Leader and Trailer


LL- 41 MELF Tape & Reel Packaging Information
LL- 41 MELF Reel Outline


Dimensions are in millimeters

Tape Size	Reel Size	QTY Option	Dim A	Dim B	Dim C	Dim D	Dim N	W1	W2	W3
12mm	7"	1,500	180	1.5	13	20.2	60	12.4	18.4	11.9 - 15.4
	13"	5,000	330	1.5	13	20.2	100	12.4	18.4	11.9 - 15.4

Package Outline

Package	Case Outline																												
LL-41 MELF	<div style="display: flex; align-items: center; justify-content: space-around;">  <table border="1" data-bbox="790 616 1452 907"> <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> </div>	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.