

## Zener Diodes



### FEATURES

- Plastic package has underwriters laboratory flammability classification UL 94 V-0
- For surface mounted applications
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- High temperature soldering guaranteed: 250 °C/10 s at terminals
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS AVAILABLE



| PRIMARY CHARACTERISTICS      |               |      |
|------------------------------|---------------|------|
| PARAMETER                    | VALUE         | UNIT |
| V <sub>Z</sub> range nom.    | 6.2 to 91     | V    |
| Test current I <sub>ZT</sub> | 2.8 to 41     | mA   |
| V <sub>Z</sub> specification | Pulse current |      |
| Circuit configuration        | Single        |      |

| ORDERING INFORMATION |                                 |                               |                        |
|----------------------|---------------------------------|-------------------------------|------------------------|
| DEVICE NAME          | ORDERING CODE                   | TAPED UNITS PER REEL          | MINIMUM ORDER QUANTITY |
| GLL4735 to GLL4763A  | GLL4735-E3/97 to GLL4763A-E3/97 | 5000 (12 mm tape on 13" reel) | 5000/box               |
| GLL4735 to GLL4763A  | GLL4735-E3/96 to GLL4763A-E3/96 | 1500 (12 mm tape on 7" reel)  | 1500/box               |

| PACKAGE         |        |                                      |                                      |                              |
|-----------------|--------|--------------------------------------|--------------------------------------|------------------------------|
| PACKAGE NAME    | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL           | SOLDERING CONDITIONS         |
| MELF (DO-213AB) | 116 mg | UL 94 V-0                            | MSL level 1<br>(according J-STD-020) | Peak temperature max. 260 °C |

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                                                         |                   |             |      |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|-------------|------|
| PARAMETER                                                                       | TEST CONDITION                                                          | SYMBOL            | VALUE       | UNIT |
| Power dissipation                                                               | Maximum steady state power dissipation is 1 W at T <sub>T</sub> = 75 °C | P <sub>tot</sub>  | 1000        | mW   |
| Zener current                                                                   | see table "Characteristics"                                             |                   |             |      |
| Junction to ambient air                                                         |                                                                         | R <sub>thJA</sub> | 170         | °C/W |
| Junction temperature                                                            |                                                                         | T <sub>j</sub>    | 150         | °C   |
| Storage temperature range                                                       |                                                                         | T <sub>stg</sub>  | -65 to +150 | °C   |

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PART<br>NUMBER | ZENER VOLTAGE<br>RANGE <sup>(1)</sup> | TEST CURRENT |           | DC REVERSE<br>LEAKAGE<br>CURRENT |      | DYNAMIC RESISTANCE<br>$f = 1\text{ kHz}$ |                       | ZENER<br>CURRENT <sup>(2)</sup> | FORWARD<br>VOLTAGE<br>at 200 mA |
|----------------|---------------------------------------|--------------|-----------|----------------------------------|------|------------------------------------------|-----------------------|---------------------------------|---------------------------------|
|                | $V_Z$ at $I_{ZT1}$                    | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$                   |      | $Z_Z$ at $I_{ZT1}$                       | $Z_{ZK}$ at $I_{ZT2}$ | $I_{ZM}$                        | $V_F$                           |
|                | V                                     | mA           |           | $\mu\text{A}$                    | V    | $\Omega$                                 |                       | $\text{mA}_{pk}$                | V                               |
|                | NOM.                                  |              |           | MAX.                             |      | MAX.                                     | MAX.                  | MAX.                            | MAX.                            |
| GLL4735        | 6.2                                   | 41           | 1         | 50                               | 3    | 2                                        | 700                   | 730                             | 1.2                             |
| GLL4736        | 6.8                                   | 37           | 1         | 10                               | 4    | 3.5                                      | 700                   | 660                             | 1.2                             |
| GLL4737        | 7.5                                   | 34           | 0.5       | 10                               | 5    | 4                                        | 700                   | 605                             | 1.2                             |
| GLL4738        | 8.2                                   | 31           | 0.5       | 10                               | 6    | 4.5                                      | 700                   | 550                             | 1.2                             |
| GLL4739        | 9.1                                   | 28           | 0.5       | 10                               | 7    | 5                                        | 700                   | 500                             | 1.2                             |
| GLL4740        | 10                                    | 25           | 0.25      | 10                               | 7.6  | 7                                        | 700                   | 454                             | 1.2                             |
| GLL4741        | 11                                    | 23           | 0.25      | 5                                | 8.4  | 8                                        | 700                   | 414                             | 1.2                             |
| GLL4742        | 12                                    | 21           | 0.25      | 5                                | 9.1  | 9                                        | 700                   | 380                             | 1.2                             |
| GLL4743        | 13                                    | 19           | 0.25      | 5                                | 9.9  | 10                                       | 700                   | 344                             | 1.2                             |
| GLL4744        | 15                                    | 17           | 0.25      | 5                                | 11.4 | 14                                       | 700                   | 305                             | 1.2                             |
| GLL4745        | 16                                    | 15.5         | 0.25      | 5                                | 12.2 | 16                                       | 700                   | 285                             | 1.2                             |
| GLL4746        | 18                                    | 14           | 0.25      | 5                                | 13.7 | 20                                       | 750                   | 250                             | 1.2                             |
| GLL4747        | 20                                    | 12.5         | 0.25      | 5                                | 15.2 | 22                                       | 750                   | 225                             | 1.2                             |
| GLL4748        | 22                                    | 11.5         | 0.25      | 5                                | 16.7 | 23                                       | 750                   | 205                             | 1.2                             |
| GLL4749        | 24                                    | 10.5         | 0.25      | 5                                | 18.2 | 25                                       | 750                   | 190                             | 1.2                             |
| GLL4750        | 27                                    | 9.5          | 0.25      | 5                                | 20.6 | 35                                       | 750                   | 170                             | 1.2                             |
| GLL4751        | 30                                    | 8.5          | 0.25      | 5                                | 22.8 | 40                                       | 1000                  | 150                             | 1.2                             |
| GLL4752        | 33                                    | 7.5          | 0.25      | 5                                | 25.1 | 45                                       | 1000                  | 135                             | 1.2                             |
| GLL4753        | 36                                    | 7            | 0.25      | 5                                | 27.4 | 50                                       | 1000                  | 125                             | 1.2                             |
| GLL4754        | 39                                    | 6.5          | 0.25      | 5                                | 29.7 | 60                                       | 1000                  | 115                             | 1.2                             |
| GLL4755        | 43                                    | 6            | 0.25      | 5                                | 32.7 | 70                                       | 1500                  | 110                             | 1.2                             |
| GLL4756        | 47                                    | 5.5          | 0.25      | 5                                | 35.8 | 80                                       | 1500                  | 95                              | 1.2                             |
| GLL4757        | 51                                    | 5            | 0.25      | 5                                | 38.8 | 95                                       | 1500                  | 90                              | 1.2                             |
| GLL4758        | 56                                    | 4.5          | 0.25      | 5                                | 42.6 | 110                                      | 2000                  | 80                              | 1.2                             |
| GLL4759        | 62                                    | 4            | 0.25      | 5                                | 47.1 | 125                                      | 2000                  | 70                              | 1.2                             |
| GLL4760        | 68                                    | 3.7          | 0.25      | 5                                | 51.7 | 150                                      | 2000                  | 65                              | 1.2                             |
| GLL4761        | 75                                    | 3.3          | 0.25      | 5                                | 56   | 175                                      | 2000                  | 60                              | 1.2                             |
| GLL4762        | 82                                    | 3            | 0.25      | 5                                | 62.2 | 200                                      | 3000                  | 55                              | 1.2                             |
| GLL4763        | 91                                    | 2.8          | 0.25      | 5                                | 69.2 | 250                                      | 3000                  | 50                              | 1.2                             |

**Notes**(1) Standard voltage tolerance is  $\pm 10\%$ , suffix A =  $\pm 5\%$ (2) Surge current is a non-repetitive, 8.3 ms pulse width square wave or equivalent sine-wave superimposed on  $I_{ZT}$  per JEDEC® method

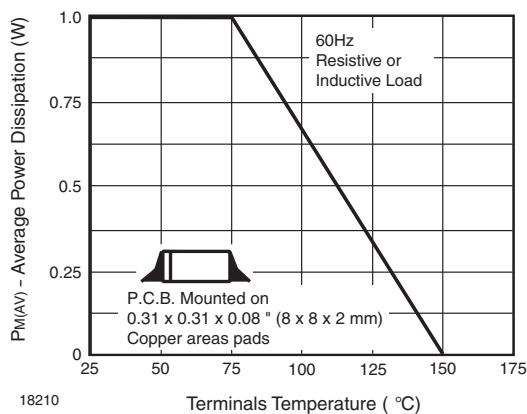
**BASIC CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Maximum Continuous Power Dissipation

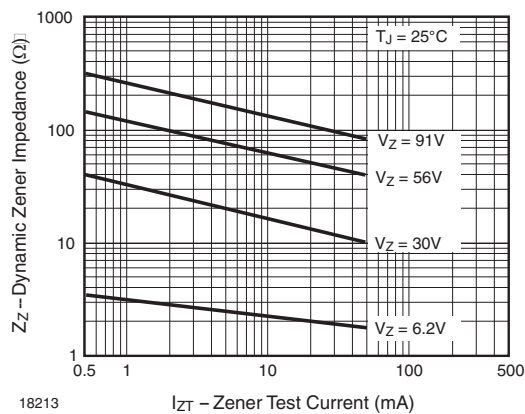


Fig. 4 - Typical Zener Impedance

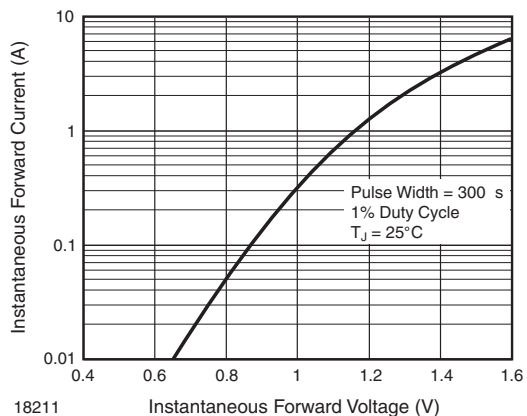


Fig. 2 - Typical Instantaneous Forward Characteristics for GLL4763

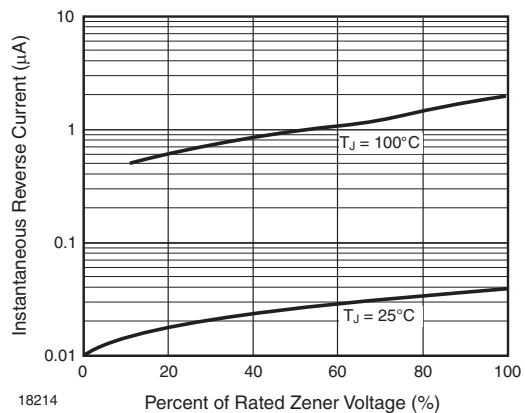


Fig. 5 - Typical Reverse Characteristics

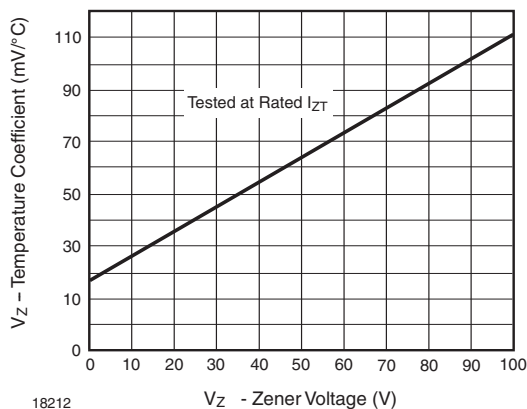
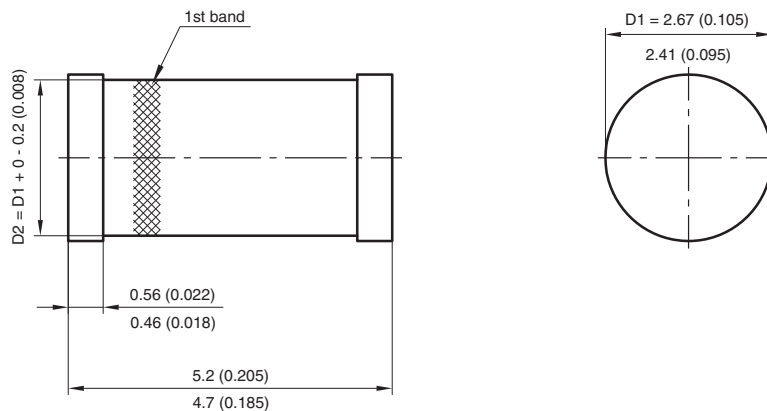


Fig. 3 - Typical Temperature Coefficients

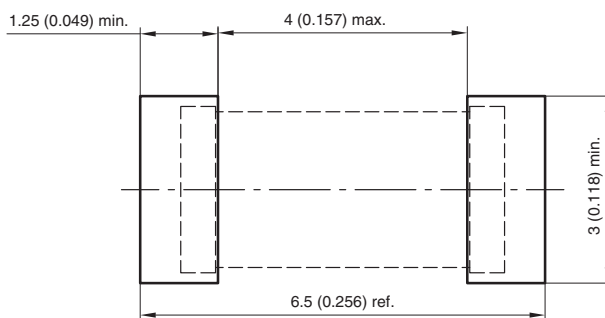


**PACKAGE DIMENSIONS** in millimeters (inches): **MELF DO-213AB (plastic)**



1st band denotes type and positive end (cathode)

Foot print recommendation:



Document-No.: S8-V-3453.03-001 (4)  
Created-Date: 13.May.2009  
18268



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.