

## **Vishay Semiconductors**





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#### **DESIGN SUPPORT TOOLS**



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

### FEATURES

**Zener Diodes** 

- 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 <u>www.vishay.com/doc?99912</u>

ORDERING INFORMATION							
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY				
GLL4735 to GLL4763A	GLL4735 to GLL4763A-series-97	5000 (12 mm tape on 13" reel)	5000/box				
GLL4735 to GLL4763A	GLL4735 to GLL4763A-series-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 (plastic)	116 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

<b>ABSOLUTE MAXIMUM RATINGS</b> (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 $T_T$ = 75 $^\circ\text{C}$	P <sub>tot</sub>	1000	mW	
Zener current	see table "Characteristics"				
Junction to ambient air		R <sub>thJA</sub>	170	°C/W	
Junction temperature		Tj	150	°C	
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C	

Rev. 1.7, 16-Feb-18



RoHS

COMPLIANT

Vishav Semiconductors

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ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)									
ZENER VOLTAGE RANGE <sup>(1)</sup>	TEST CURRENT		DC REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE f = 1 kHz		ZENER CURRENT <sup>(2)</sup>	FORWARD VOLTAGE at 200 mA	
V <sub>Z</sub> at I <sub>ZT1</sub>	I <sub>ZT1</sub>	I <sub>ZT2</sub>	l <sub>R</sub> a	t V <sub>R</sub>	Z <sub>Z</sub> at I <sub>ZT1</sub>	Z <sub>ZK</sub> at I <sub>ZT2</sub>	I <sub>ZM</sub>	V <sub>F</sub>	
V	m	A	μA	v	9	2	mA <sub>pk</sub>	v	
NOM.			MAX.		MAX.	MAX.	MAX.	MAX.	
6.2	41	1	50	3	2	700	730	1.2	
6.8	37	1	10	4	3.5	700	660	1.2	
7.5	34	0.5	10	5	4	700	605	1.2	
8.2	31	0.5	10	6	4.5	700	550	1.2	
9.1	28	0.5	10	7	5	700	500	1.2	
10	25	0.25	10	7.6	7	700	454	1.2	
11	23	0.25	5	8.4	8	700	414	1.2	
12	21	0.25	5	9.1	9	700	380	1.2	
13	19	0.25	5	9.9	10	700	344	1.2	
15	17	0.25	5	11.4	14	700	305	1.2	
16	15.5	0.25	5	12.2	16	700	285	1.2	
18	14	0.25	5	13.7	20	750	250	1.2	
20	12.5	0.25	5	15.2	22	750	225	1.2	
22	11.5	0.25	5	16.7	23	750	205	1.2	
24	10.5	0.25	5	18.2	25	750	190	1.2	
27	9.5	0.25	5	20.6	35	750	170	1.2	
30	8.5	0.25	5	22.8	40	1000	150	1.2	
	ZENER VOLTAGE RANGE (1)   Vz at IzT1   V   NOM.   6.2   6.8   7.5   8.2   9.1   10   11   12   13   15   16   18   20   22   24   27	ZENER VOLTAGE RANGE (1) TEST CI IZTI   Vz at IzTI IzTI   V m   NOM.    6.2 41   6.8 37   7.5 34   8.2 31   9.1 28   10 25   11 23   12 21   13 19   15 17   16 15.5   18 14   20 12.5   24 10.5   27 9.5	ZENER VOLTAGE RANGE (1) TEST CURRENT   Vz at IzT1 IzT1 IzT2   V mA   NOM. 1   6.2 41 1   6.2 41 1   6.8 37 1   7.5 34 0.5   8.2 31 0.5   9.1 28 0.5   10 25 0.25   11 23 0.25   12 21 0.25   13 19 0.25   15 17 0.25   16 15.5 0.25   18 14 0.25   22 11.5 0.25   24 10.5 0.25	ZENER VOLTAGE RANGE (1)TEST CURRENTDC RE LEAN CUR $V_z$ at $I_{ZT1}$ $I_{ZT1}$ $I_{ZT2}$ $I_R$ aV $mA$ $\mu A$ NOM. $MAX.$ $6.2$ $41$ $1$ $50$ $6.8$ $37$ $1$ $10$ $6.8$ $37$ $1$ $10$ $7.5$ $34$ $0.5$ $10$ $8.2$ $31$ $0.5$ $10$ $9.1$ $28$ $0.5$ $10$ $10$ $25$ $0.25$ $10$ $11$ $23$ $0.25$ $5$ $12$ $21$ $0.25$ $5$ $13$ $19$ $0.25$ $5$ $16$ $15.5$ $0.25$ $5$ $18$ $14$ $0.25$ $5$ $22$ $11.5$ $0.25$ $5$ $24$ $10.5$ $0.25$ $5$ $27$ $9.5$ $0.25$ $5$	ZENER VOLTAGE RANGE (1)TEST CURRENTDC REVERSE LEAKAGE CURENTVz at IzT1IzT1IzT2IR at VRVmAVVmAVNOM.MAX.MAX.6.24115036.83711047.5340.51058.2310.51069.1280.510710250.25107.611230.2558.412210.2559.113190.2559.915170.25511.41615.50.25512.218140.25515.22211.50.25516.72410.50.25518.2279.50.25520.6	ZENER VOLTAGE RANGE (1)TEST CURRENTDC REVERSE LEAKAGE CURRENTDYNAMIC R f = 1 $V_z$ at $I_{ZT1}$ $I_{ZT2}$ $I_R$ at $V_R$ $Z_z$ at $I_{ZT1}$ $V$ $m \rightarrow$ $\mu A$ $V$ $Z_z$ at $I_{ZT1}$ $V$ $m \rightarrow$ $\mu A$ $V$ $MAX.$ $6.2$ $41$ $1$ $50$ $3$ $2$ $6.8$ $37$ $1$ $10$ $4$ $3.5$ $7.5$ $34$ $0.5$ $10$ $5$ $4$ $8.2$ $31$ $0.5$ $10$ $5$ $4$ $8.2$ $31$ $0.5$ $10$ $7.6$ $7$ $10$ $25$ $0.25$ $10$ $7.6$ $7$ $11$ $23$ $0.25$ $5$ $9.1$ $9$ $13$ $19$ $0.25$ $5$ $9.9$ $10$ $15$ $17$ $0.25$ $5$ $11.4$ $14$ $16$ $15.5$ $0.25$ $5$ $15.2$ $22$ $20$ $12.5$ $0.25$ $5$ $15.2$ $22$ $22$ $11.5$ $0.25$ $5$ $16.7$ $23$ $24$ $10.5$ $0.25$ $5$ $18.2$ $25$ $27$ $9.5$ $0.25$ $5$ $20.6$ $35$	AL CHARACTERISTICS ( $T_{amb} = 25$ °C, uless otherwise specified)ZENER VOLTAGE RANGE (1)TEST URENT $DC REVERSECURENTDYNAMIC RESISTANCEf = 1 kHzV_2 at I_{2T1}I_{2T1}I_{2T2}I_R = V_RZ_2 at I_{2T1}Z_{2K} at I_{2T2}Vm\muV\Omega\OmegaNOM.MAX.MAX.MAX.MAX.6.241150327006.83711043.57007.5340.510547008.2310.51064.57009.1280.5107570011230.2558.4870011230.2559.91070013190.2559.91070015170.25511.4147001615.50.25513.7207502012.50.25516.7237502211.50.25516.7237502410.50.25518.2257502410.50.25518.2257502410.50.25518.2257502410.50.25518.2257502410.50$	ZENER VOLTAGE RANGE (1) TEST CFRENT DCR FCS LEAK GE CURRENT (2) DYNAMIC FSISTANCE f = 1 kL ZENER CURRENT (2)   Vz at Iz1 Iz1 Iz2 I <sub>R</sub> + V Zz at Iz1 Zz k at Iz2 IzM   V ···· µA V Zz k at Iz1 IzM IzM   V ···· MAX MAX MAX. MAX. MAX.   6.2 41 1 50 3 2 700 730   6.8 37 1 10 4 3.5 700 660   7.5 34 0.5 10 6 4.5 700 550   8.2 31 0.5 10 6 4.5 700 550   9.1 28 0.5 10 7.6 700 454   110 23 0.5 10 7.6 700 380   111 23 0.5 5 9.9 100 305   113 19 0.5	

25.1

27.4

29.7

32.7

35.8

38.8

42.6

47.1

51.7

56

62.2

69.2

45

50

60

70

80

95

110

125

150

175

200

250

5

5

5

5

5

5

5

5

5

5

5

5

1000

1000

1000

1500

1500

1500

2000

2000

2000

2000

3000

3000

135

125

115

110

95

90

80

70

65

60

55

50

1.2

1.2

1.2

1.2

1.2

1.2

1.2

1.2

1.2

1.2

1.2

1.2

#### Notes

GLL4752

GLL4753

GLL4754

GLL4755

GLL4756

GLL4757

GLL4758

GLL4759

GLL4760

GLL4761

GLL4762

GLL4763

<sup>(1)</sup> Standard voltage tolerance is  $\pm$  10 %, suffix A =  $\pm$  5 %

33

36

39

43

47

51

56

62

68

75

82

91

<sup>(2)</sup> Surge current is a non-repetitive, 8.3 ms pulse width square wave or equivalent sine-wave superimposed on I<sub>ZT</sub> per JEDEC method

0.25

0.25

0.25

0.25

0.25

0.25

0.25

0.25

0.25

0.25

0.25

0.25

7.5

7

6.5

6

5.5

5

4.5

4

3.7

3.3

3

2.8



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# GLL4735 to GLL4763A

## **Vishay Semiconductors**

### BASIC CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

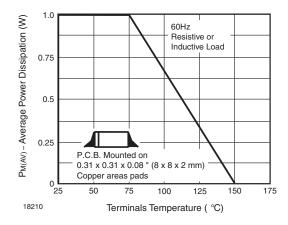


Fig. 1 - Maximum Continuous Power Dissipation

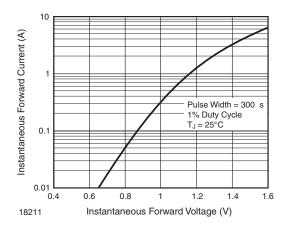


Fig. 2 - Typical Instantaneous Forward Characteristics for GLL4763

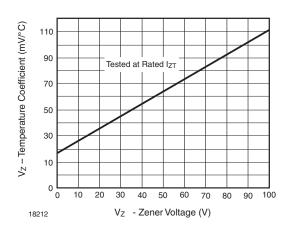


Fig. 3 - Typical Temperature Coefficients

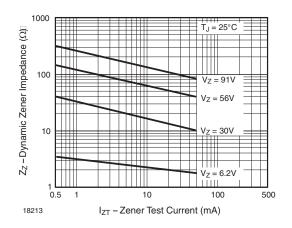


Fig. 4 - Typical Zener Impedance

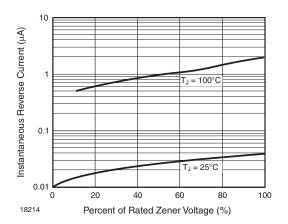


Fig. 5 - Typical Reverse Characteristics

3

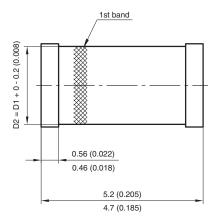
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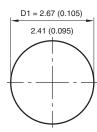




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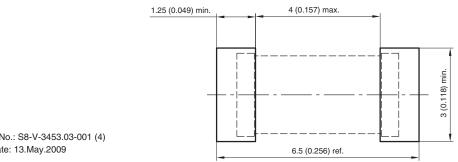
### PACKAGE DIMENSIONS in millimeters (inches): MELF DO-213AB (plastic)





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



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