

**Microsemi Corp.**

The diode experts

**MLL4728  
thru  
MLL4764**

SCOTTSDALE, AZ

For more information call:  
(602) 941-6300

SANTA ANA, CA

**DESCRIPTION/FEATURES**

- LEADLESS PACKAGE FOR SURFACE MOUNT TECHNOLOGY
- IDEAL FOR HIGH DENSITY MOUNTING
- VOLTAGE RANGE—3.3 TO 100 VOLTS
- HERMETICALLY SEALED, DOUBLE-SLUG GLASS CONSTRUCTION

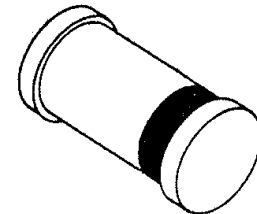
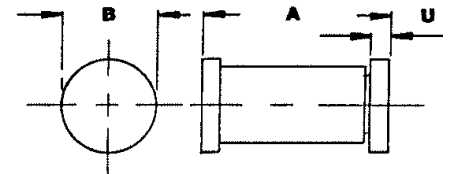
**MAXIMUM RATINGS**

1.00 Watt DC Power Rating (See Power Derating Curve)  
-65°C to +200°C Operating and Storage Junction Temperature  
Power Derating 10.0 mW/°C above 50°C  
Forward Voltage @ 200 mA: 1.2 Volts

**APPLICATION**

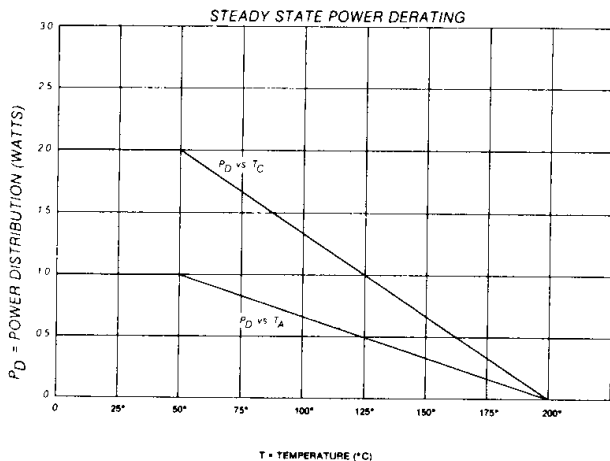
This surface mountable zener diode series is similar to the 1N4728 thru 1N4764 registration in the DO-41 equivalent package except that it meets the new JEDEC surface mount outline DO-213AB. It is an ideal selection for applications of high density and low parasitic requirements. Due to its glass hermetic qualities, it may also be considered for high reliability applications when required by a source control drawing (SCD).

**LEADLESS GLASS  
ZENER  
DIODES**



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.20	.189	.205
B	2.39	2.66	.094	.105
U	.41	.56	.016	.022

DO-213AB



**MECHANICAL  
CHARACTERISTICS**

CASE: Hermetically sealed glass with solder contact tabs at each end.

FINISH: All external surfaces are corrosion resistant, readily solderable.

POLARITY: Banded end is cathode.

THERMAL RESISTANCE: 75°C/Watt typical junction to contact (case) tabs. (See Power Derating Curve)

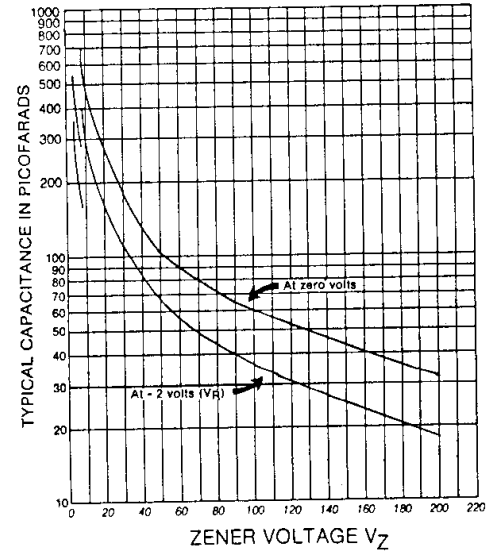
MOUNTING POSITION: Any.

# MLL4728 thru MLL4764

## ELECTRICAL CHARACTERISTICS @ $T_C = 30^\circ\text{C}$

TYPE NUMBER (Note 1)	ZENER VOLTAGE ( $V_Z$ ) (NOTE 4)	TEST CURRENT ( $I_{ZT}$ )	MAXIMUM DYNAMIC IMPEDANCE ( $Z_{ZT}$ @ $I_{ZT}$ ) (Note 2)	MAXIMUM REVERSE CURRENT ( $I_{R}$ @ $V_R$ )	TEST VOLTAGE ( $V_R$ )	MAXIMUM REGULATOR CURRENT ( $I_{ZM}$ ) $T_A = 50^\circ\text{C}$	MAXIMUM KNEE IMPEDANCE ( $Z_{ZK}$ @ $I_{ZK}$ ) (Note 2)	TEST CURRENT ( $I_{ZK}$ )	MAXIMUM (SURGE) CURRENT ( $I_S$ ) (Note 3)
	VOLTS	mA	OHMS	$\mu\text{A}$	VOLTS	mA	OHMS	mA	mA
MLL4728A MLL4729A MLL4730A MLL4731A	3.3 3.6 3.9 4.3	76 69 64 58	10 10 9 9	100 100 50 10	1 1 1 1	276 252 234 217	400 400 400 400	1.0 1.0 1.0 1.0	1380 1260 1190 1070
MLL4732A MLL4733A MLL4734A MLL4735A	4.7 5.1 5.6 6.2	53 49 45 41	8 7 5 2	10 10 10 10	1 1 2 3	193 178 162 146	500 550 600 700	1.0 1.0 1.0 1.0	970 890 810 730
MLL4736A MLL4737A MLL4738A MLL4739A	6.8 7.5 8.2 9.1	37 34 31 28	3.5 4.0 4.5 5.0	10 10 10 10	4 5 6 7	133 121 110 100	700 700 700 700	1.0 0.5 0.5 0.5	660 605 550 500
MLL4740A MLL4741A MLL4742A MLL4743A	10 11 12 13	25 23 21 19	7 8 9 10	10 5 5 5	7.6 8.4 9.1 9.9	91 83 76 69	700 700 700 700	0.25 0.25 0.25 0.25	454 414 380 344
MLL4744A MLL4745A MLL4746A MLL4747A	15 16 18 20	17 15.5 14 12.5	14 16 20 22	5 5 5 5	11.4 12.2 13.7 15.2	61 57 50 45	700 700 750 750	0.25 0.25 0.25 0.25	304 285 250 225
MLL4748A MLL4749A MLL4750A MLL4751A	22 24 27 30	11.5 10.5 9.5 8.5	23 25 35 40	5 5 5 5	16.7 18.2 20.6 22.8	41 38 34 30	750 750 750 1000	0.25 0.25 0.25 0.25	205 190 170 150
MLL4752A MLL4753A MLL4754A MLL4755A	33 36 39 43	7.5 7.0 6.5 6.0	45 50 60 70	5 5 5 5	25.1 27.4 29.7 32.7	27 25 23 22	1000 1000 1000 1500	0.25 0.25 0.25 0.25	135 125 115 110
MLL4756A MLL4757A MLL4758A MLL4759A	47 51 56 62	5.5 5.0 4.5 4.0	80 95 110 125	5 5 5 5	35.8 38.8 42.6 47.1	19 18 16 14	1500 1500 2000 2000	0.25 0.25 0.25 0.25	95 90 80 70
MLL4760A MLL4761A MLL4762A MLL4763A	68 75 82 91	3.7 3.3 3.0 2.8	150 175 200 250	5 5 5 5	51.7 56.0 62.2 69.2	13 12 11 10	2000 2000 3000 3000	0.25 0.25 0.25 0.25	65 60 55 50
MLL4764A	100	2.5	350	5	76.0	9	3000	0.25	45

CAPACITANCE vs.  $V_Z$  CURVE



**NOTE 1:** The type numbers shown with an "A" suffix have a  $\pm 5\%$  tolerance on the nominal Zener voltage. Also available with suffix "C" for  $\pm 2\%$ , and "D" for  $\pm 1\%$ , while the absence of a suffix letter denotes  $\pm 10\%$  tolerance.

**NOTE 2:** The Zener impedance is derived from the 60 Hz 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  $I_{ZK}$ . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and eliminate unstable units.

**NOTE 3:** The reverse surge current is measured at  $25^\circ\text{C}$  ambient using a 1/2 square wave or equivalent sine wave pulse 1/120 second duration superimposed on  $I_{ZT}$ .

**NOTE 4:** Voltage measurements to be performed 90 seconds after application of DC current.