

MLL4099 thru MLL4135 and MLL4614 thru MLL4627

Description / Features

- ZENER VOLTAGE 1.8 TO 100V
- JAN, JANTX AND JANTXV-1 QUALIFICATIONS AVAILABLE IN METALLURGICALLY BONDED CONSTRUCTION TO MIL-S-19500/435 (Designated by "UR-1" suffix.)
- LOW NOISE
- LOW REVERSE LEAKAGE
- TIGHT TOLERANCE AVAILABLE

Maximum Ratings

Junction and Storage temperatures: -65°C to +200°C
DC Power Dissipation: 400 mW standard (no suffix), and
500 mW military qualified ("1" suffix).

Forward Voltage @ 200 mA: 1.1 Volts 1N4099 - 1N4135
@ 100 mA: 1.0 Volts 1N4614 - 1N4627
(All military qualified @ 200 mA with V_F of 1.1 Volts.)

*Electrical Characteristics @ 25° C

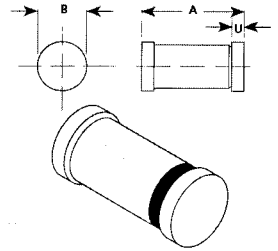
MICROSEMI NUMBER	NOMINAL ZENER VOLTAGE	ZENER CURRENT	MAXIMUM ZENER IMPEDANCE	MAXIMUM REVERSE CURRENT	MAXIMUM NOISE DENSITY	MAXIMUM ZENER CURRENT	TYPICAL TEMP. COEFF. OF ZENER VOLTAGE
	V _Z (I _{ZT}) (P. 10-1)	I _{ZT}	Z ₀ (I _{ZR} =I _{ZT})	I _{ZR} (I _{ZR})	N ₀ (I _{ZT})	I _{ZM} (I _{ZM})	(C _{VZ})
	VOLTS	µA	OHMS	µA	VOLTS	µV/√HZ	%/°C
** Please see ordering information below.							
MLL4614	1.8	250	1200	7.5	1.0	1	120
MLL4615	2.0	250	1250	5.0	1.0	1	110
MLL4616	2.2	250	1300	4.0	1.0	1	100
MLL4617	2.4	250	1400	2.0	1.0	1	95
MLL4618	2.7	250	1500	1.0	1.0	1	90
MLL4619	3.0	250	1600	0.8	1.0	1	87
MLL4620	3.3	250	1650	7.5	1.5	1	85
MLL4621	3.6	250	1700	7.5	2.0	1	83
MLL4622	3.9	250	1650	5.0	2.0	1	80
MLL4623	4.3	250	1600	4.0	2.0	1	77
MLL4624	4.7	250	1550	10.0	3.0	1	75
MLL4625	5.1	250	1500	10.0	3.0	2	70
MLL4626	5.6	250	1400	10.0	4.0	4	65
MLL4627	6.2	250	1200	10.0	5.0	5	61
MLL4099	6.8	250	200	10.0	5.17	5	56
MLL4100	7.5	250	200	10.0	5.70	40	51
MLL4101	8.2	250	200	1.0	6.24	40	46
MLL4102	8.7	250	200	1.0	6.61	40	44
MLL4103	9.1	250	200	1.0	6.92	40	42
MLL4104	10	250	200	1.0	7.60	40	38
MLL4105	11	250	200	.05	8.44	40	35
MLL4106	12	250	200	.05	9.12	40	32
MLL4107	13	250	200	.05	9.87	40	29
MLL4108	14	250	200	.05	10.65	40	27
MLL4109	15	250	100	.05	11.40	40	25
MLL4110	16	250	100	.05	12.15	40	24
MLL4111	17	250	100	.05	12.92	40	22
MLL4112	18	250	100	.05	13.67	40	21
MLL4113	19	250	150	.05	14.44	40	20
MLL4114	20	250	150	.01	15.20	40	19
MLL4115	22	250	150	.01	16.72	40	17
MLL4116	24	250	150	.01	18.25	40	16
MLL4117	25	250	150	.01	19.00	40	15
MLL4118	27	250	150	.01	20.45	40	14
MLL4119	28	250	200	.01	21.28	40	14
MLL4120	30	250	200	.01	22.80	40	13
MLL4121	33	250	200	.01	25.08	40	12
MLL4122	36	250	200	.01	27.38	40	11
MLL4123	39	250	200	.01	29.65	40	9.8
MLL4124	43	250	250	.01	32.65	40	8.9
MLL4125	47	250	250	.01	35.75	40	8.1
MLL4126	51	250	300	.01	38.76	40	7.5
MLL4127	56	250	300	.01	42.60	40	6.7
MLL4128	60	250	400	.01	45.60	40	6.4
MLL4129	62	250	500	.01	47.10	40	6.1
MLL4130	68	250	700	.01	51.68	40	5.6
MLL4131	75	250	700	.01	57.00	40	5.1
MLL4132	82	250	800	.01	62.32	40	4.6
MLL4133	87	250	1000	.01	66.12	40	4.4
MLL4134	91	250	1200	.01	69.16	40	4.2
MLL4135	100	250	1500	.01	76.00	40	3.8

* JEDEC Registered Data

** Ordering information:

- 1) Commercial: MLL4614 - MLL4627, MLL4099 - MLL4135
- 2) Military: JAN, JANTX, or JANTXV 1Nxxxx UR-1
- 3) Tight tolerance: "C" suffix = 2%, "D" suffix = 1% (MLL4099C, JANTXVIN4099CUR-1)

LEADLESS GLASS ZENER DIODES



DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	3.30	3.70	0.130	0.146
B	1.60	1.70	0.063	0.067
U	0.41	0.55	0.016	0.022

DO-213AA

Figure 1

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:
100°C/W maximum junction to end caps for "-1" construction and 150°C/W maximum junction to end caps for commercial.

MOUNTING POSITION:
Any.

MLL4099 thru MLL4135 and MLL4614 thru MLL4627

Noise density, (N_D) is specified in microvolts - rms per square-root-hertz. Actual measurement is performed using a 1 KHz to 3 KHz frequency bandpass filter at a constant Zener test current (I_{ZT}) at 25°C ambient temperature. N_D is calculated from the formula.

NOTE 1:

The JEDEC type numbers shown above have a standard tolerance of $\pm 5\%$ on the nominal Zener voltage. Also available in 2% and 1% tolerance, suffix C and D respectively. V_Z is measured with the diode in thermal equilibrium in 25°C still air.

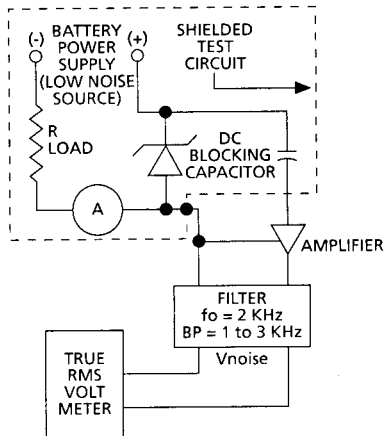


FIGURE 2 Noise Density Measurement Circuit

NOTE 2:

Zener impedance is derived by superimposing on I_{ZT} , a 60 Hz rms a.c. current equal to 10% of I_{ZT} (25 μ A a.c.).

NOTE 3:

Based upon 400 mW maximum power dissipation at 75°C, allowance has been made for the higher voltage associated with operation at higher currents.

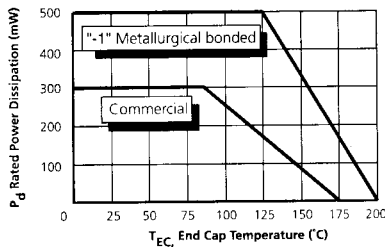


FIGURE 3 Power Derating Curve

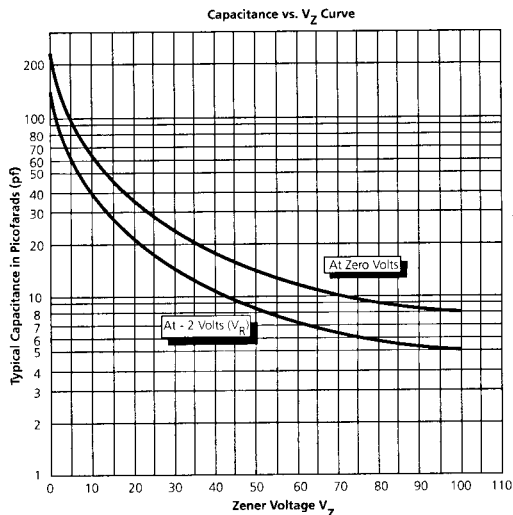


FIGURE 4 Capacitance vs. Zener Voltage (Typical)