

**MLL3016B
thru
MLL3051B**

Description / Features

- LEADLESS PACKAGE FOR SURFACE MOUNT EQUIVALENT TO IN3016 THRU IN3051
- IDEAL FOR HIGH DENSITY MOUNTING
- VOLTAGE RANGE: 6.8 TO 200 VOLTS
- HERMETICALLY SEALED, DOUBLE-SLUG GLASS CONSTRUCTION
- METALLURGICALLY ENHANCED CONTACT CONSTRUCTION
- AVAILABLE IN JANTX OR JANTXV EQUIVALENTS TO MIL-S-19500/115 WITH MLX OR MLXV PREFIX.

Maximum Ratings

1.50 Watts 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 is less than 1.50 Volts.

Application

This surface mountable zener diode series is similar to the IN3016 thru IN3051 registration in the DO-13 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 is also suited for high reliability applications. This can be acquired by a source control drawing (SCD), or simply by ordering device types with a MLX or MLXV prefix for equivalent screening to JANTX or JANTXV.

***Electrical Characteristics @ 25° C**

** TYPE NUMBER (Note 1)	NOMINAL ZENER VOLTAGE V _Z @ I _{ZT} (Note 1)	ZENER TEST CURRENT I _{ZT} mA	MAXIMUM ZENER IMPEDANCE (Note 2)		MAXIMUM ZENER CURRENT I _{ZM} mA (Note 3)	MAXIMUM REVERSE LEAKAGE CURRENT I _R @ V _R μA	TYPICAL TEMP. COEFF. OF ZENER VOLTAGE %/°C		
			Z _{ZT} @ I _{ZT} OHMS	Z _{ZK} @ I _{ZK} =1mA OHMS					
MLL3015B	6.8	37	3.5	750	1.0	150	5.2	.040	
MLL3017B	7.5	34	4	750	5	125	100	5.7	.045
MLL3018B	8.2	31	4.5	750	5	115	50	6.2	.048
MLL3019B	9.1	28	5	750	5	105	25	6.9	.050
MLL3020B	10	25	7	750	25	95	25	7.6	.055
MLL3021B	11	23	8	750	25	85	10	8.4	.060
MLL3022B	12	21	9	750	25	80	10	9.1	.065
MLL3023B	13	19	10	1000	25	74	10	9.9	.065
MLL3024B	15	17	14	750	25	63	10	44.4	.070
MLL3025B	16	15.5	16	750	25	60	10	12.2	.070
MLL3026B	18	14	20	750	25	52	10	13.7	.075
MLL3027B	20	12.5	22	1000	25	47	10	15.2	.075
MLL3028B	22	11.5	23	750	25	43	10	16.7	.080
MLL3029B	24	10.5	25	750	25	40	10	18.2	.080
MLL3030B	27	9.5	35	750	25	34	10	20.6	.085
MLL3031B	30	8.5	40	1000	25	31	10	22.8	.085
MLL3032B	33	7.5	45	750	25	28	10	25.1	.085
MLL3033B	36	7.0	50	750	25	26	10	27.4	.085
MLL3034B	39	6.5	60	750	25	23	10	29.7	.090
MLL3035B	40	6.0	70	1000	25	21	10	32.7	.090
MLL3036B	47	5.5	80	1500	25	19	10	35.8	.090
MLL3037B	51	5.0	95	1500	25	18	10	38.8	.090
MLL3038B	56	4.5	110	2000	25	17	10	42.6	.090
MLL3039B	62	4.0	125	2000	25	15	10	47.1	.090
MLL3040B	68	3.7	150	2000	25	14	10	51.7	.090
MLL3041B	75	3.3	175	2000	25	12	10	56.0	.090
MLL3042B	82	3.0	200	3000	25	11	10	62.2	.090
MLL3043B	91	2.8	250	3000	25	10	10	69.2	.090
MLL3044B	100	2.5	350	3000	25	9.0	10	76.0	.090
MLL3045B	110	2.3	450	4000	25	8.3	10	83.6	.095
MLL3046B	120	2.0	550	4500	25	8.0	10	91.2	.095
MLL3047B	130	1.9	700	5000	25	6.9	10	98.8	.095
MLL3048B	150	1.7	1000	6000	25	5.7	10	114.0	.095
MLL3049B	160	1.6	1100	6500	25	5.4	10	121.6	.095
MLL3050B	180	1.4	1200	7000	25	4.9	10	136.8	.095
MLL3051B	200	1.2	1500	8000	25	4.6	10	152.0	.100

* JEDEC Registered Data for 1N3621 thru 3830A equivalents.
** When applicable, replace MLL prefix with MLX or MLXV for 3821A to 3829A. † Not JEDEC Data

**LEADLESS GLASS
ZENER DIODES**

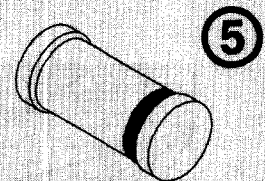
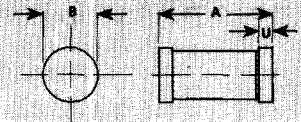


Figure 1

DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	4.80	5.20	.189	.205
B	2.39	2.66	.094	.105
U	0.41	0.55	.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:
50°C/Watt typical junction to end caps. (See Power Derating Curve).

MOUNTING POSITION:
Any.

1N3016B thru 1N3051B

NOTE 1:

Suffix A signifies a $\pm 5\%$ tolerance on nominal zener voltage. If tighter tolerance is required, consult factory. Zener Voltage (V_Z) is measured with junction in thermal equilibrium with still air at a temperature of 25°C . The test currents (I_{ZT}) at nominal voltages provide a constant 0.25 watts for this device series.

NOTE 2:

The zener impedance is derived when a 60 cycle 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 2 points to insure a sharp knee on the breakdown curve and to eliminate unstable units. A curve showing the variation of zener impedance vs. zener current for four representative types is shown in Figure 2.

NOTE 3:

These JEDEC values of I_{ZM} may be exceeded by 50% for the surface mount package shown. Further power capability exists by heatsinking for end cap temperature control (T_{EC}) as shown in Figure 5.

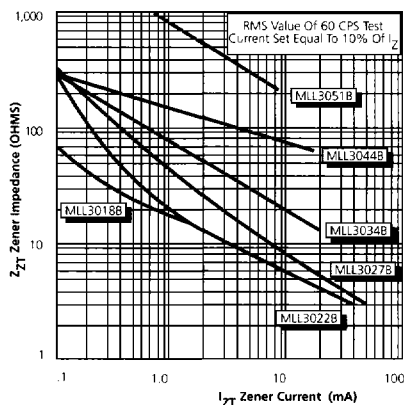


FIGURE 2 Typical Zener Impedance vs. Zener Current For Types Shown

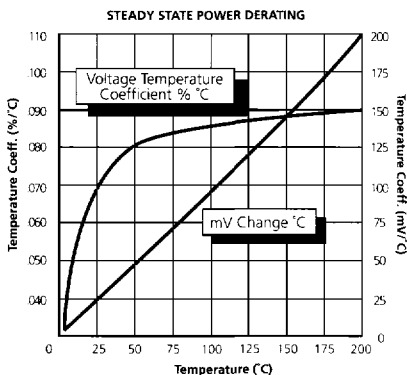


FIGURE 3 Typical Zener Voltage Temperature Coeff. vs. Zener Voltage

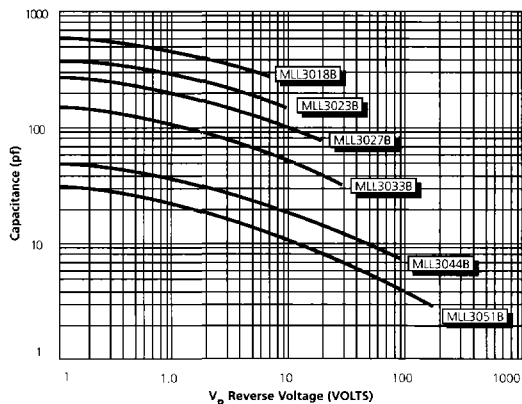


FIGURE 4 Typical Capacitance vs. Reverse Voltage

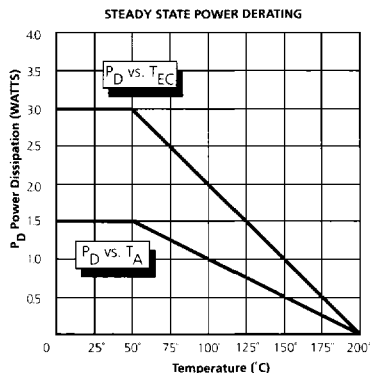


FIGURE 5 Power Derating Curve Where T_A is Ambient Temperature And T_{EC} is End Cap Temperature