

Microsemi Corp.
 The diode experts

SANTA ANA, CA

 SCOTTSDALE, AZ
 For more information call:
 (602) 941-6300

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-5-19500/115 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}	MAXIMUM ZENER IMPEDANCE (Note 2)		MAXIMUM ZENER CURRENT I _{ZM} (Note 3)	MAXIMUM REVERSE LEAKAGE CURRENT I _R @ V _R	TYPICAL TEMP. COEFF. OF ZENER VOLTAGE α _{VZ}
			Z _{1T} @ I _{ZT}	Z _{2K} @ I _{ZK}			
	VOLTS	mA	OHMS	OHMS	mA	μA	%/°C
MLL3016B	6.8	37	3.5	750	1.0	140	5.2
MLL3017B	7.5	34	4	750	5	125	5.7
MLL3018B	8.2	31	4.5	750	5	115	6.2
MLL3019B	9.1	28	5	750	5	105	6.9
MLL3020B	10	25	7	750	.25	95	7.6
MLL3021B	11	23	8	750	.25	85	8.4
MLL3022B	12	21	9	750	.25	80	9.1
MLL3023B	13	19	10	1000	.25	74	9.9
MLL3024B	15	17	14	750	.25	63	10
MLL3025B	16	15.5	16	750	.25	60	10
MLL3026B	18	14	20	750	.25	52	10
MLL3027B	20	12.5	22	1000	.25	47	10
MLL3028B	22	11.5	23	750	.25	43	10
MLL3029B	24	10.5	25	750	.25	40	10
MLL3030B	27	9.5	35	750	.25	34	10
MLL3031B	30	8.5	40	1000	.25	31	10
MLL3032B	33	7.5	45	750	.25	28	10
MLL3033B	36	7.0	50	750	.25	26	10
MLL3034B	39	6.5	60	750	.25	23	10
MLL3035B	40	6.0	70	1000	.25	21	10
MLL3036B	47	5.5	80	1500	.25	19	10
MLL3037B	51	5.0	95	1500	.25	18	10
MLL3038B	56	4.5	110	2000	.25	17	10
MLL3039B	62	4.0	125	2000	.25	15	10
MLL3040B	68	3.7	150	2000	.25	14	10
MLL3041B	75	3.3	175	2000	.25	12	10
MLL3042B	82	3.0	200	3000	.25	11	10
MLL3043B	91	2.8	250	3000	.25	10	10
MLL3044B	100	2.5	350	3000	.25	9.0	10
MLL3045B	110	2.3	450	4000	.25	8.3	10
MLL3046B	120	2.0	550	4500	.25	8.0	10
MLL3047B	130	1.9	700	5000	.25	6.9	10
MLL3048B	150	1.7	1000	6000	.25	5.7	10
MLL3049B	160	1.6	1100	6500	.25	5.4	10
MLL3050B	180	1.4	1200	7000	.25	4.9	10
MLL3051B	200	1.2	1500	8000	.25	4.6	10

* JEDEC Registered Data for IN3821 thru 3830A equivalents.

** When applicable, replace MLL prefix with MLX or MLXV for 3821A to 3828A. * Not JEDEC Data.

LEADLESS GLASS ZENER DIODES

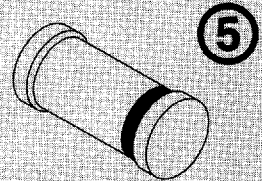
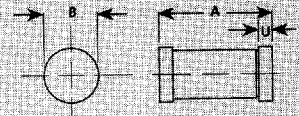


Figure 1

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.

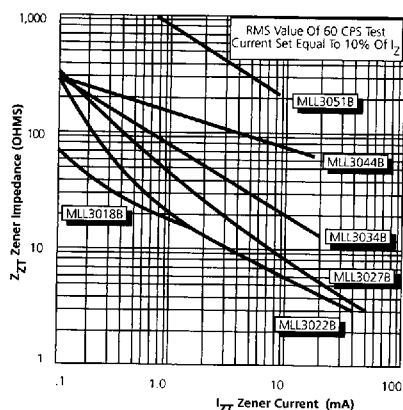


FIGURE 2 Typical Zener Impedance vs. Zener Current For Types Shown

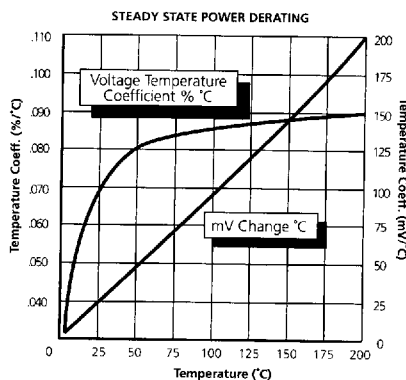


FIGURE 3 Typical Zener Voltage Temperature Coeff. vs. Zener Voltage

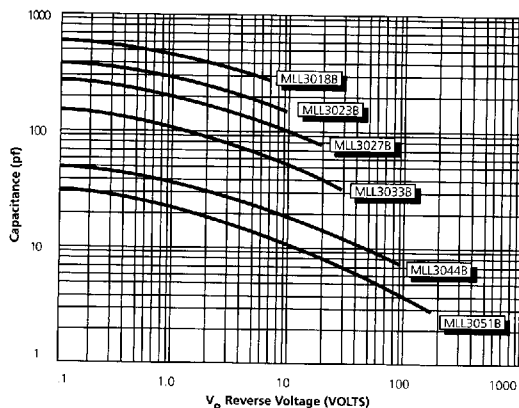


FIGURE 4 Typical Capacitance vs. Reverse Voltage

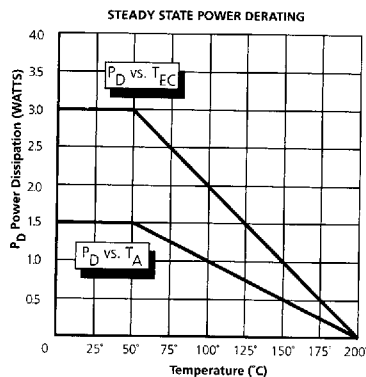


FIGURE 5 Power Derating Curve Where T_A is Ambient Temperature And T_{EC} is End Cap Temperature