Microsemi Corp.
The diode experts

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MLL3821 thru MLL3830A

Description / Features

- LEADLESS PACKAGE FOR SURFACE MOUNT EQUIVALENT TO IN3821 THRU IN3830A
- IDEAL FOR HIGH DENSITY MOUNTING
- VOLTAGE RANGE: 3.3 TO 7.5 VOLTS
- HERMETICALLY SEALED, DOUBLE-SLUG GLASS CONSTRUCTION
- METALLURGICALLY BONDED CONSTRUCTION
- AVAILABLE IN JANTX OR JANTXV EQUIVALENTS TO MIL-S-19500/115 FOR 3821A THRU 3828A 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

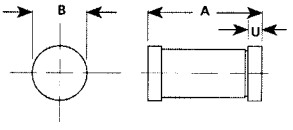
This surface mountable zener diode series is similar to the IN3821 thru IN3830 registration in the DO-13 package except that it meets the new JEDEC surface mount outline DO-213AB. It is an ideal selection for applications of high density and low parasitic requirements. Due to its glass hermetic qualities, 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) Z_{ZT} @ I_{ZT}	MAXIMUM ZENER IMPEDANCE (Note 2) Z_{ZK} @ $I_{ZK=1mA}$	MAXIMUM ZENER CURRENT I_{ZM} (Note 3)	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_R		TYPICAL TEMP. COEFF. OF ZENER VOLTAGE $\propto_{VZ}$
	VOLTS	mA	OHMS	OHMS	mA	µA	Volts	%/°C
MLL3821	3.3	76	10	400	276	100	1	-.066
MLL3821A	3.3	76	10	400	276	100	1	-.066
MLL3822	3.6	69	10	400	252	100	1	-.058
MLL3822A	3.6	69	10	400	252	100	1	-.058
MLL3823	3.9	64	9	400	238	50	1	-.046
MLL3823A	3.9	64	9	400	238	50	1	-.046
MLL3824	4.3	58	9	400	213	10	1	-.033
MLL3824A	4.3	58	9	400	213	10	1	-.033
MLL3825	4.7	53	8	500	194	10	1	-.015
MLL3825A	4.7	53	8	500	194	10	1	-.015
MLL3826	5.1	49	7	550	178	10	1	±.010
MLL3826A	5.1	49	7	550	178	10	1	±.010
MLL3827	5.6	45	5	600	162	10	2	+.030
MLL3827A	5.6	45	5	600	162	10	2	+.030
MLL3828	6.2	41	2	700	146	10	3	+.049
MLL3828A	6.2	41	2	700	146	10	3	+.049
MLL3829	6.8	37	1.5	500	133	10	3	+.053
MLL3829A	6.8	37	1.5	500	133	10	3	+.053
MLL3830	7.5	34	1.5	250	121	10	3	+.057
MLL3830A	7.5	34	1.5	250	121	10	3	+.057

* JEDEC Registered Data for 1N3821 thru 3830A equivalents.
** When applicable, replace MLL prefix with MLX or MLXV for 3821A to 3828A.

LEADLESS GLASS ZENER DIODES



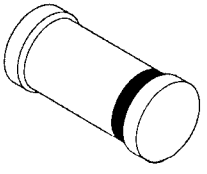


Figure 1

	MILLIMETERS		INCHES	
DIM.	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.

MLL3821 thru MLL3830A

NOTE 1:

Suffix A signifies a ±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.

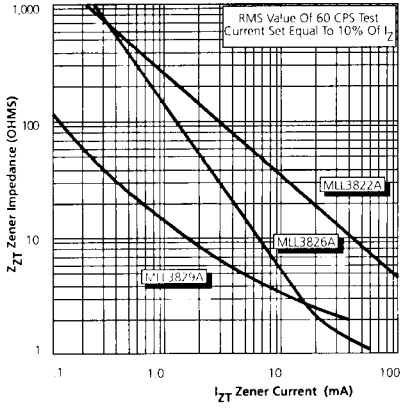


FIGURE 2 Typical Zener Impedance vs. Zener Current For Types Shown

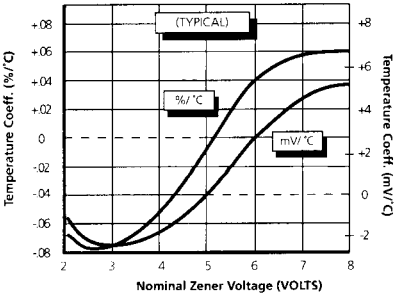


FIGURE 3 Typical Zener Voltage Temperature Coeff. vs. Zener Voltage

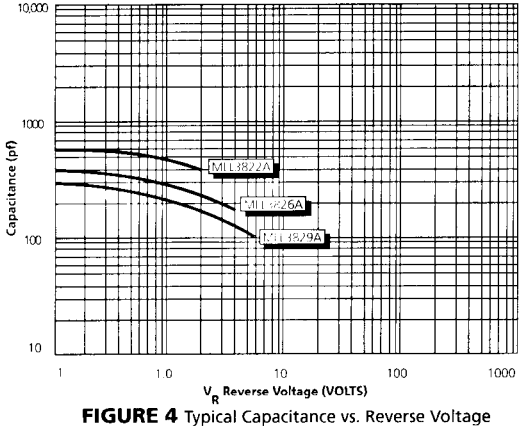


FIGURE 4 Typical Capacitance vs. Reverse Voltage

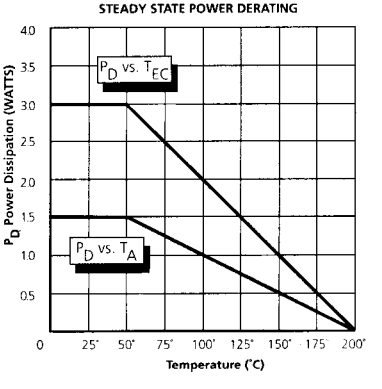


FIGURE 5 Power Derating Curve Where T_A is Ambient Temperature And T_{EC} is End Cap Temperature