

MLL5221B thru MLL5263B

T-11-11

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted. Based on dc measurements at thermal equilibrium; case temperature maintained at  $30 \pm 2^\circ\text{C}$ .  $V_F = 0.9$  Max @  $I_F = 10$  mA for all types.)

Type No. (Note 1)	Nominal Zener Voltage $V_Z @ I_{ZT}$ Volts (Note 2)	Test Current $I_{ZT}$ mA	Max Zener Impedance		Max Reverse Leakage Current		Max Zener Voltage Temperature Coeff. $\theta_{VZ} (\%/^\circ\text{C})$ (Note 3)
			$Z_{ZT} @ I_{ZT}$ Ohms	$Z_{ZK} @ I_{ZK} = 0.25$ mA Ohms	$I_R @ V_R$ $\mu\text{A}$ Volts		
MLL5221B	2.4	20	30	1200	100	1	-0.085
MLL5222B	2.5	20	30	1250	100	1	-0.085
MLL5223B	2.7	20	30	1300	75	1	-0.08
MLL5224B	2.8	20	30	1400	75	1	-0.08
MLL5225B	3	20	29	1600	50	1	-0.075
MLL5226B	3.3	20	28	1600	25	1	-0.07
MLL5227B	3.6	20	24	1700	15	1	-0.065
MLL5228B	3.9	20	23	1900	10	1	-0.06
MLL5229B	4.3	20	22	2000	5	1	$\pm 0.055$
MLL5230B	4.7	20	19	1900	5	2	$\pm 0.03$
$\Rightarrow$ MLL5231B	5.1	20	17	1600	5	2	$\pm 0.03$
MLL5232B	5.6	20	11	1600	5	3	+0.038
$\Rightarrow$ MLL5233B	6	20	7	1600	5	3.5	+0.038
MLL5234B	6.2	20	7	1000	5	4	+0.045
MLL5235B	6.8	20	5	750	3	5	+0.05
MLL5236B	7.5	20	6	500	3	6	+0.058
MLL5237B	8.2	20	8	500	3	6.5	+0.062
MLL5238B	8.7	20	8	600	3	6.5	+0.065
MLL5239B	9.1	20	10	600	3	7	+0.068
MLL5240B	10	20	17	600	3	8	+0.075
MLL5241B	11	20	22	600	2	8.4	+0.076
MLL5242B	12	20	30	600	1	9.1	+0.077
MLL5243B	13	9.5	13	600	0.5	9.9	+0.079
$\Rightarrow$ MLL5244B	14	9	15	600	0.1	10	+0.082
MLL5245B	15	8.5	16	600	0.1	11	+0.082
MLL5246B	16	7.8	17	600	0.1	12	+0.083
MLL5247B	17	7.4	19	600	0.1	13	+0.084
MLL5248B	18	7	21	600	0.1	14	+0.085
MLL5249B	19	6.6	23	600	0.1	14	+0.086
MLL5250B	20	6.2	25	600	0.1	15	+0.086
MLL5251B	22	5.6	29	600	0.1	17	+0.087
$\Rightarrow$ MLL5252B	24	5.2	33	600	0.1	18	+0.088
MLL5253B	25	5	35	600	0.1	19	+0.089
MLL5254B	27	4.6	41	600	0.1	21	+0.09
MLL5255B	28	4.5	44	600	0.1	21	+0.091
MLL5256B	30	4.2	49	600	0.1	23	+0.091
MLL5257B	33	3.8	58	700	0.1	25	+0.092
MLL5258B	36	3.4	70	700	0.1	27	+0.093
MLL5259B	39	3.2	80	800	0.1	30	+0.094
MLL5260B	43	3	93	900	0.1	33	+0.095
MLL5261B	47	2.7	105	1000	0.1	36	+0.095
MLL5262B	51	2.5	125	1100	0.1	39	+0.096
MLL5263B	56	2.2	150	1300	0.1	43	+0.096

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(continued)

$\Rightarrow$  Preferred part  
(See Notes on the following page)

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**NOTE 1. TOLERANCE**Units shown indicate a tolerance of  $\pm 5\%$ .**NOTE 2. SPECIAL SELECTIONS AVAILABLE:**

For information on special selections contact your nearest Motorola representative.

**NOTE 3. TEMPERATURE COEFFICIENT ( $\theta_{Vz}$ )**

Test conditions for temperature coefficient are as follows:

- a.  $I_{ZT} = 7.5 \text{ mA}$ ,  $T_1 = 25^\circ\text{C}$ ,  
 $T_2 = 125^\circ\text{C}$  (MLL5221B through MLL5242B).
- b.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ\text{C}$ ,  
 $T_2 = 125^\circ\text{C}$  (MLL5243B through MLL5263B).

Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.

**NOTE 4. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**Nominal zener voltage is measured with the device junction in thermal equilibrium at the case temperature of  $30^\circ\text{C} \pm 1^\circ\text{C}$ .**NOTE 5. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION** $Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the ac voltage drop across the device by the ac current applied. The specified limits are for  $I_{Z(ac)} = 0.1 \times I_{Z(dc)}$  with the ac frequency = 1 kHz.