CD5221B thru CD5272B

Zener Diode Chip Series

Rev. V1

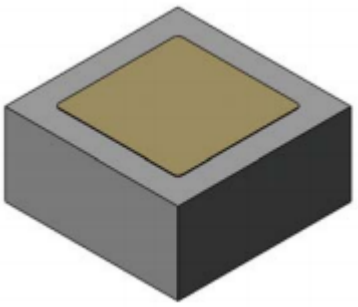
Features

- All Junctions Completely Protected with Silicon Dioxide
- 0.5 W Capability with Proper Heat Sinking
- Electrically Equivalent to 1N5221B - 1N5272B

Description

These 0.5 W zener diodes are electrically equivalent to the 1N5221B - 1N5272B series diodes. They are compatible with all wire bonding and die attach techniques with the exception of solder reflow.

Die



Electrical Specifications: T_A = +25°C

Part #	Zener Voltage V_Z @ I_{ZT} (Note 1 & 3)	Zener Test Current I_{ZT}	Zener Impedance Z_{ZT} @ I_{ZT} / Z_{ZK} @ I_{ZK} = 250 µA (Note 2)		Reverse Current I_R @ V_R	
	Nominal		Maximum		Maximum	
	V	mA	Ohms	Ohms	µA	VOLTS
CD5221B	2.4	20	30	1200	100	1.0
CD5222B	2.5	20	30	1250	100	1.0
CD5223B	2.7	20	30	1300	75	1.0
CD5224B	2.8	20	30	1400	75	1.0
CD5225B	3.0	20	29	1600	50	1.0
CD5226B	3.3	20	28	1600	25	1.0
CD5227B	3.6	20	24	1700	15	1.0
CD5228B	3.9	20	23	1900	10	1.0
CD5229B	4.3	20	22	2000	5.0	1.0
CD5230B	4.7	20	19	1900	5.0	2.0
CD5231B	5.1	20	17	600	5.0	2.0
CD5232B	5.6	20	11	1600	5.0	3.0
CD5233B	6.0	20	7.0	1600	5.0	3.5
CD5234B	6.2	20	7.0	1000	5.0	4.0
CD5235B	6.8	20	5.0	750	3.0	5.0
CD5236B	7.5	20	6.0	500	3.0	6.0
CD5237B	8.2	20	8.0	500	3.0	6.5
CD5238B	8.7	20	8.0	600	3.0	6.5
CD5239B	9.1	20	10	600	3.0	7.0
CD5240B	10	20	17	600	3.0	8.0

(Continued next page)

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Electrical Specifications: T_A = +25°C

Part #	Zener Voltage V_Z @ I_{ZT} (Note 1 & 3)	Zener Test Current I_{ZT}	Zener Impedance Z_{ZT} @ I_{ZT} / Z_{ZK} @ I_{ZK} = 250 µA (Note 2)		Reverse Current I_R @ V_R	
	Nominal		Maximum		Maximum	
	V	mA	Ohms	Ohms	µA	VOLTS
CD5241B	11	20	22	600	2.0	8.4
CD5242B	12	20	30	600	1.0	9.1
CD5243B	13	9.5	13	600	0.5	9.9
CD5244B	14	9.0	15	600	0.1	10
CD5245B	15	8.5	16	600	0.1	11
CD5246B	16	7.8	17	600	0.1	12
CD5247B	17	7.4	19	600	0.1	13
CD5248B	18	7.0	21	600	0.1	14
CD5249B	19	6.6	23	600	0.1	14
CD5250B	20	6.2	25	600	0.1	15
CD5251B	22	5.6	29	600	0.1	17
CD5252B	24	5.2	33	600	0.1	18
CD5253B	25	5.0	35	600	0.1	19
CD5254B	27	4.6	41	600	0.1	21
CD5255B	28	4.5	44	600	0.1	21
CD5256B	30	4.2	49	600	0.1	23
CD5257B	33	3.8	58	700	0.1	25
CD5258B	36	3.4	70	700	0.1	27
CD5259B	39	3.2	80	800	0.1	30
CD5260B	43	3.0	93	900	0.1	33
CD5261B	47	2.7	105	1000	0.1	36
CD5262B	51	2.5	125	1100	0.1	39
CD5263B	56	2.2	150	1300	0.1	43
CD5264B	60	2.1	170	1400	0.1	46
CD5265B	62	2.0	185	1400	0.1	47
CD5266B	68	1.8	230	1600	0.1	52
CD5267B	75	1.7	270	1700	0.1	56
CD5268B	82	1.5	330	2000	0.1	62
CD5269B	87	1.4	370	2200	0.1	68
CD5270B	91	1.4	400	2300	0.1	69
CD5271B	100	1.3	500	2600	0.1	76
CD5272B	110	1.1	750	3000	0.1	84

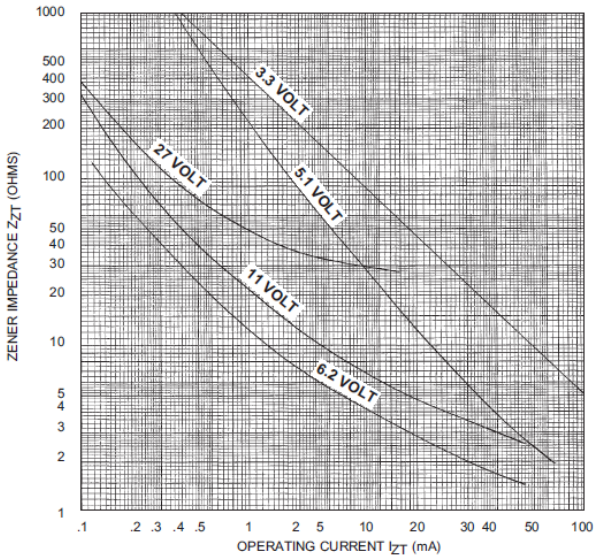
1. Zener voltage range equals “nominal Zener voltage” (see table) +5%, for “B” Suffix types. “A” Suffix denotes +10%. No Suffix denotes +20%. "C" suffix = +2% tolerance and "D" suffix = +1% tolerance.
2. Zener impedance is derived by superimposing on IZTA 60 Hz rms AC current equal to 250 µA.
3. Zener voltage is read using a pulse measurement, 10 milliseconds maximum.

Absolute Maximum Ratings[4,5]

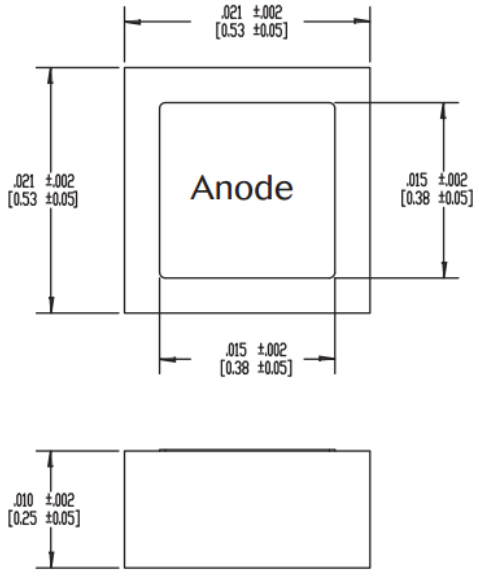
Parameter	Absolute Maximum
Forward Voltage	1.5 V @ 200 mA
Operating Temperature	-65°C to +175°C
Storage Temperature	-65°C to +175°C

4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

Zener Impedance vs. Operating Current



Die



Metallization:	Top: (anode) AL Back: (cathode) Au
AL Thickness:	25,000 Å Minimum
Gold Thickness:	4,000 Å Minimum
Chip Thickness:	10 mils
Circuit Layout Data:	For Zener operation, cathode must be operated positive with respect to anode.