

CD5518B thru CD5546B



Zener Diode Chip Series

Rev. V5

Features

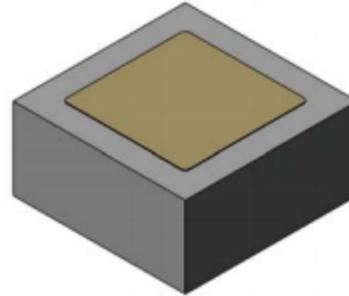
- All Junctions Completely Protected with Silicon Dioxide
- 0.5 W Capability with Proper Heat Sinking
- Electrically Equivalent to 1N5518B - 1N5546B
- No suffix indicates 21 mil square die size
- J15 suffix indicates 13.5 mil square die size

Description

These 0.5 W zener diodes are electrically equivalent to the 1N5518B - 1N5546B series diodes. They are compatible with all wire bonding and die attach techniques with the exception of solder reflow.

These diodes are also available in JANHC and JANKC per MIL-PRF-19500/437.

Die



See dimensions on pages 3 and 4.

Electrical Specifications: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Part#	Zener Voltage $V_Z @ I_{ZT}$ (Note 1)	Zener Test Current I_{ZT}	Zener Impedance $Z_{ZT} @ I_{ZT}$ (Note 2)	Reverse Leakage Current		Regulation Factor ΔV_Z (Note 3)	Low V_Z Current I_{ZL}
				I_R	V_R		
				Maximum			
	Nominal		Maximum	Maximum			
	V	mAdc	Ohms	mAdc	V	V	mAdc
CD5518B	3.3	20	26	5.0	1.0	0.90	2.0
CD5519B	3.6	20	24	3.0	1.0	0.90	2.0
CD5520B	3.9	20	22	1.0	1.0	0.90	2.0
CD5521B	4.3	20	18	3.0	1.5	0.75	2.0
CD5522B	4.7	10	22	2.0	2.0	0.60	1.0
CD5523B	5.1	5.0	26	2.0	2.5	0.65	0.25
CD5524B	5.6	3.0	30	2.0	3.5	0.30	0.25
CD55258	6.2	1.0	30	1.0	5.0	0.20	0.01
CD5526B	6.8	1.0	30	1.0	6.2	0.10	0.01
CD5527B	7.5	1.0	35	0.5	6.8	0.05	0.01
CD5528B	8.2	1.0	40	0.5	7.5	0.05	0.01
CD5529B	9.1	1.0	45	0.1	8.2	0.05	0.01
CD5530B	10.0	1.0	60	0.05	9.1	0.10	0.01

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

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Electrical Specifications: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Part#	Zener Voltage $V_Z @ I_{ZT}$ (Note 1)	Zener Test Current I_{ZT}	Zener Impedance $Z_{ZT} @ I_{ZT}$ (Note 2)	Reverse Leakage Current		Regulation Factor ΔV_Z (Note 3)	Low V_Z Current I_{ZL}
	Nominal		Maximum	I_R	V_R		
	V	mAdc	Ohms	mAdc	V		
CD5531B	11.0	1.0	80	0.05	9.9	0.20	0.01
CD5532B	12.0	1.0	90	0.05	10.8	0.20	0.01
CD5533B	13.0	1.0	90	0.01	11.7	0.20	0.01
CD5534B	14.0	1.0	100	0.01	12.6	0.20	0.01
CD5535B	15.0	1.0	100	0.01	13.5	0.20	0.01
CD5536B	16.0	1.0	100	0.01	14.4	0.20	0.01
CD5537B	17.0	1.0	100	0.01	15.3	0.20	0.01
CD5538B	18.0	1.0	100	0.01	16.2	0.20	0.01
CD5539B	19.0	1.0	100	0.01	17.1	0.20	0.01
CD5540B	20.0	1.0	100	0.01	18.0	0.20	0.01
CD5541B	22.0	1.0	100	0.01	19.8	0.25	0.01
CD5542B	24.0	1.0	100	0.01	21.6	0.30	0.01
CD5543B	25.0	1.0	100	0.01	22.4	0.35	0.01
CD5544B	28.0	1.0	100	0.01	25.2	0.40	0.01
CD5545B	30.0	1.0	100	0.01	27.0	0.45	0.01
CD5546B	33.0	1.0	100	0.01	29.7	0.50	0.01

1. Suffix "B" voltage range equals nominal Zener voltage. + 5%. Suffix "A" equals + 10 %. "C" suffix= $\pm 2\%$ and "D" suffix= + 1 %. No Suffix equals + 20 %. Zener voltage is read using a pulse measurement, 10 milliseconds maximum.
2. Suffix "J15" equals 13.5 mil square die.
3. Zener impedance is derived by superimposing on I_{ZT} a 60 Hz rms ac current equal to 10 % of I_{ZT} .
4. ΔV_Z is the maximum difference between $V_Z @ I_{ZT}$ and V_Z at I_{ZL} measured with the device junction in thermal equilibrium at an ambient temperature of $+25^\circ\text{C} \pm 3^\circ\text{C}$.

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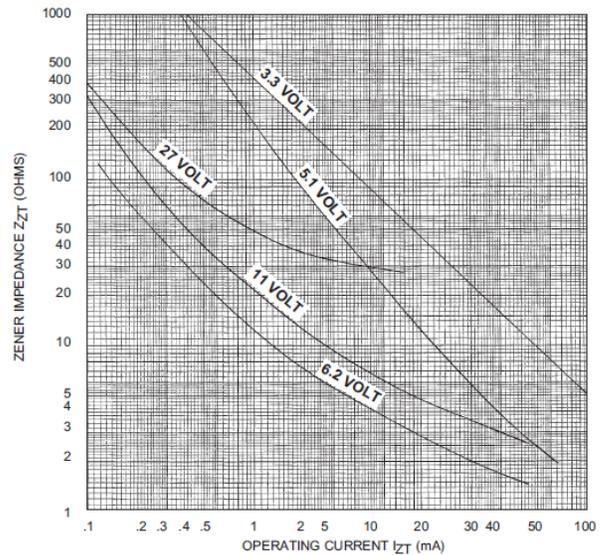
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Absolute Maximum Ratings^{4,5}

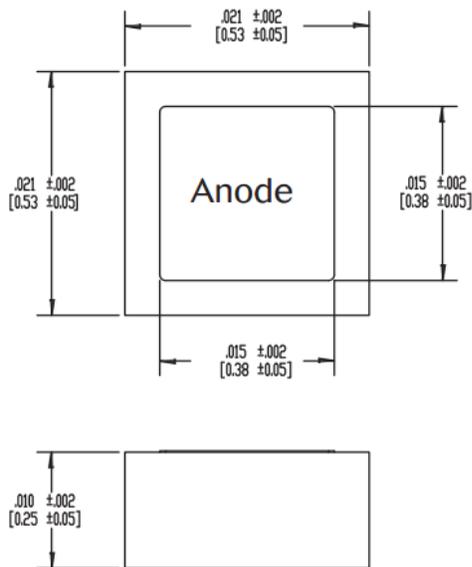
Parameter	Absolute Maximum
Forward Voltage	1.5 V @ 200 mA
Operating Temperature	-65°C to +175°C
Storage Temperature	-65°C to +175°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- VPT Components 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.

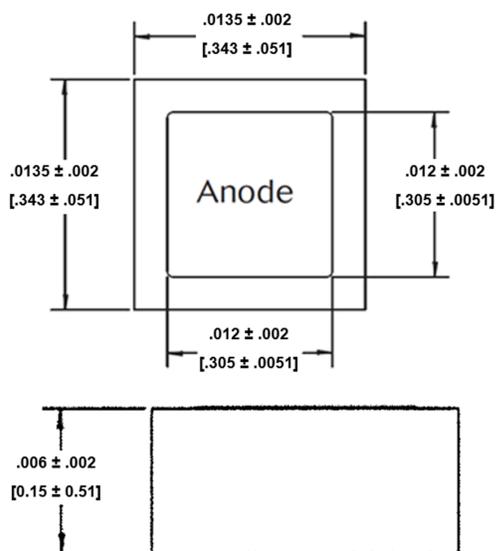
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Die (-J15 Dimensions)



Metallization:

Top = (anode) - AL,
Back: (cathode) - AU,
AL thickness = 18,000 Å minimum
Gold thickness = 7,000 Å Minimum
Chip thickness = 6 mils

Circuit layout data: For Zener operation, cathode must be operated positive with respect to anode.

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