1N5221 THRU 1N5281

SILICON ZENER DIODES

GROWCHILD ELECTRONICS™

REVERSE VOLTAGE: **2.4 TO 200 VOLTS**

POWER DISSIPATION: **500 mWATTS**

http://www.njzrg.com

FEATURES

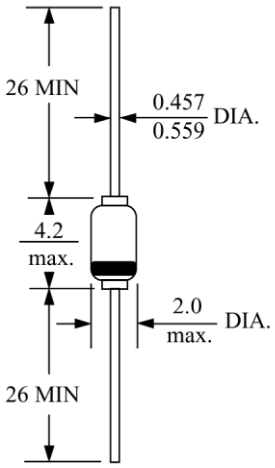
· Planar Die construction

· 500mW Power Dissipation

· Ideally Suited for Automated Assembly Processes

· Standard Zener voltage tolerance is ±20%. Add suffix "A" for ±10% tolerance, suffix "B" for ±5% tolerance, or suffix "C" for ±2% tolerance. Other tolerances and other, non-standard Zener voltages are available upon request.

DO-35



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded glass DO-35

Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed

Polarity: Color band denotes cathode end

Mounting position: Any

Weight: approx. 0.13 g

Absolute Maximum Ratings

Tamb = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Power Dissipation at Tamb=25℃	P_D	500	mWatt
Zener Current	I_Z	P_D/V_Z	mAmp
Junction Temperature	T_J	200	℃
Storage Temperature Range	Tstg	-65 to +200	℃

Thermal Characteristics

Tamb = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Junction Ambient at l = 9.5 mm (3/8 "), T_L=constant	R_{thJA}	300	K/W

Electrical Characteristics

Tamb = 25 °C, unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage at I_F = 200 mA	V_F			1.1	Volt

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Electrical Characteristics

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Tamb = 25 °C, unless otherwise specified

Type	Zener Voltage Range (Note 1)		Maximum Zener Impedance (Note 1)			Reverse leakage Current		Temp. Coefficient Of Zener Voltage
	V_Z	I_{ZT}	R_{ZT} @ I_{ZT}	R_{ZK} @ I_{ZK}	I_{ZK}	I_R	V_R	TK_{VZ} @ I_{ZT}
	V	mA	Omh (MAX)	Omh (MAX)	mA	uA (MAX)	V	%/℃(MAX)
1N5221	2.4	20	30	1200	0.25	100	1.0	-0.085
1N5222	2.5	20	30	1250	0.25	100	1.0	-0.085
1N5223	2.7	20	30	1300	0.25	75	1.0	-0.080
1N5224	2.8	20	30	1400	0.25	75	1.0	-0.080
1N5225	3.0	20	29	1600	0.25	50	1.0	-0.075
1N5226	3.3	20	28	1600	0.25	25	1.0	-0.070
1N5227	3.6	20	24	1700	0.25	15	1.0	-0.065
1N5228	3.9	20	23	1900	0.25	10	1.0	-0.060
1N5229	4.3	20	22	2000	0.25	5	1.0	+0.055
1N5230	4.7	20	19	1900	0.25	5	2.0	+0.030
1N5231	5.1	20	17	1600	0.25	5	2.0	+0.030
1N5232	5.6	20	11	1600	0.25	5	3.0	+0.038
1N5233	6.0	20	7	1600	0.25	5	3.5	+0.038
1N5234	6.2	20	7	1000	0.25	5	4.0	+0.045
1N5235	6.8	20	5	750	0.25	3	5.0	+0.050
1N5236	7.5	20	6	500	0.25	3	6.0	+0.058
1N5237	8.2	20	8	500	0.25	3	6.5	+0.062
1N5238	8.7	20	8	600	0.25	3	6.5	+0.065
1N5239	9.1	20	10	600	0.25	3	7.0	+0.068
1N5240	10	20	17	600	0.25	3	8.0	+0.075
1N5241	11	20	22	600	0.25	2	8.4	+0.075
1N5242	12	20	30	600	0.25	1	9.1	+0.076
1N5243	13	9.5	13	600	0.25	0.5	9.9	+0.077
1N5244	14	9.0	15	600	0.25	0.1	10	+0.079
1N5245	15	8.5	16	600	0.25	0.1	11	+0.082
1N5246	16	7.8	17	600	0.25	0.1	12	+0.082
1N5247	17	7.4	19	600	0.25	0.1	13	+0.083
1N5248	18	7.0	21	600	0.25	0.1	14	+0.084
1N5249	19	6.6	23	600	0.25	0.1	14	+0.085
1N5250	20	6.2	25	600	0.25	0.1	15	+0.086

NOTES:

1- Based on dc-measurement at thermal equilibrium; lead length = 9.5 (3/8 "); thermal resistance of heat sink = 30 K/W

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Electrical Characteristics

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Tamb = 25 °C, unless otherwise specified

Type	Zener Voltage Range (Note 1)		Maximum Zener Impedance (Note 1)			Reverse leakage Current		Temp. Coefficient Of Zener Voltage
	V_Z	I_{ZT}	R_{ZT} @ I_{ZT}	R_{ZK} @ I_{ZK}	I_{ZK}	I_R	V_R	TK_{VZ} @ I_{ZT}
	V	mA	Omh (MAX)	Omh (MAX)	mA	uA (MAX)	V	%/℃ (MAX)
1N5251	22	5.6	29	600	0.25	0.1	17	+0.086
1N5252	24	5.2	33	600	0.25	0.1	18	+0.087
1N5253	25	5.0	35	600	0.25	0.1	19	+0.088
1N5254	27	4.6	41	600	0.25	0.1	21	+0.089
1N5255	28	4.5	44	600	0.25	0.1	21	+0.090
1N5256	30	4.2	49	600	0.25	0.1	23	+0.091
1N5257	33	3.8	58	700	0.25	0.1	25	+0.091
1N5258	36	3.4	70	700	0.25	0.1	27	+0.092
1N5259	39	3.2	80	800	0.25	0.1	30	+0.093
1N5260	43	3.0	93	900	0.25	0.1	33	+0.094
1N5261	47	2.7	105	1000	0.25	0.1	36	+0.095
1N5262	51	2.5	125	1100	0.25	0.1	39	+0.095
1N5263	56	2.2	150	1300	0.25	0.1	43	+0.096
1N5264	60	2.1	170	1400	0.25	0.1	46	+0.096
1N5265	62	2.0	185	1400	0.25	0.1	47	+0.097
1N5266	68	1.8	230	1600	0.25	0.1	52	+0.097
1N5267	75	1.7	270	1700	0.25	0.1	56	+0.097
1N5268	82	1.5	330	2000	0.25	0.1	62	+0.098
1N5269	87	1.4	370	2200	0.25	0.1	68	+0.098
1N5270	91	1.4	400	2300	0.25	0.1	69	+0.099
1N5271	100	1.3	500	-	-	0.1	75	+0.099
1N5272	110	1.2	700	-	-	0.1	83	+0.100
1N5273	120	1.0	950	-	-	0.1	90	+0.100
1N5274	130	0.95	1100	-	-	0.1	98	+0.100
1N5275	140	0.90	1300	-	-	0.1	105	+0.110
1N5276	150	0.85	1500	-	-	0.1	113	+0.110
1N5277	160	0.80	1700	-	-	0.1	120	+0.110
1N5278	170	0.74	1900	-	-	0.1	127	+0.115
1N5279	180	0.68	2200	-	-	0.1	135	+0.115
1N5280	190	0.66	2400	-	-	0.1	142	+0.120
1N5281	200	0.65	2500	-	-	0.1	150	+0.120

NOTES:

1- Based on dc-measurement at thermal equilibrium; lead length = 9.5 (3/8 "); thermal resistance of heat sink = 30 K/W

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RATINGS AND CHARACTERISTIC CURVES

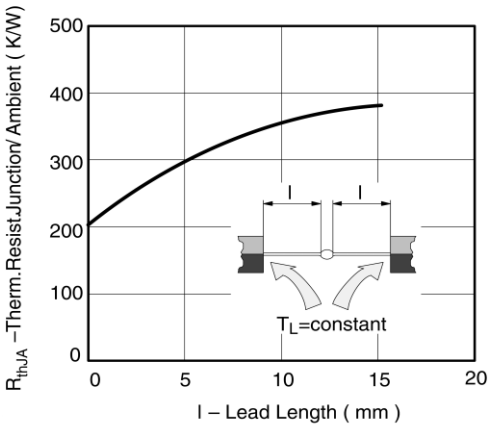

Figure 1. Thermal Resistance vs. Lead Length

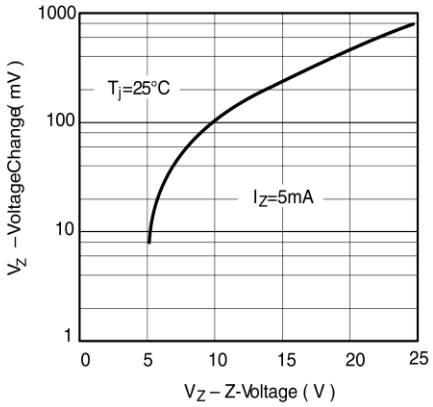

Figure 2. Typical Change of Working Voltage under Operating Conditions at T_{amb}=25°C

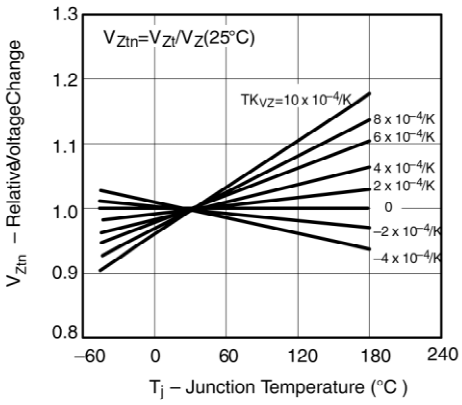

Figure 3. Typical Change of Working Voltage vs. Junction Temperature

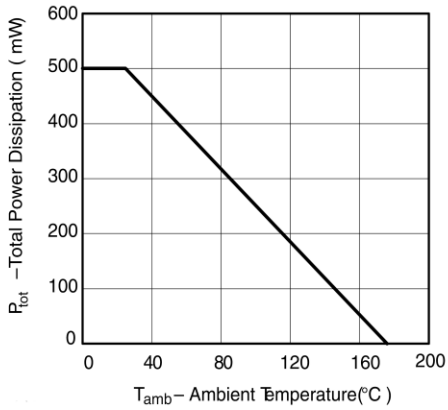

Figure 4. Total Power Dissipation vs. Ambient Temperature

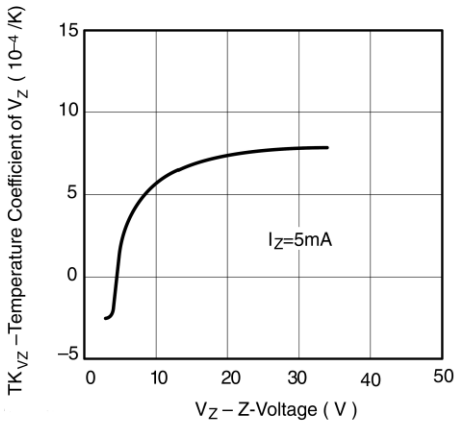

Figure 5. Temperature Coefficient of Vz vs. Z-Voltage

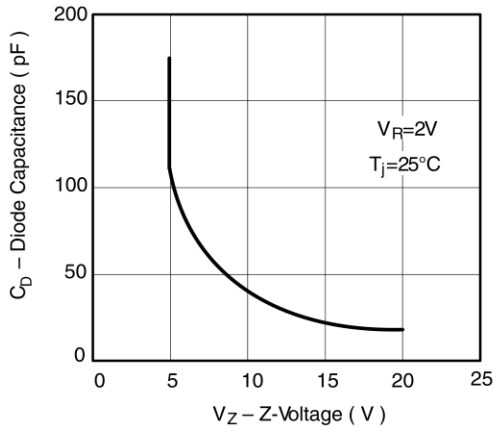

Figure 6. Diode Capacitance vs. Z-Voltage

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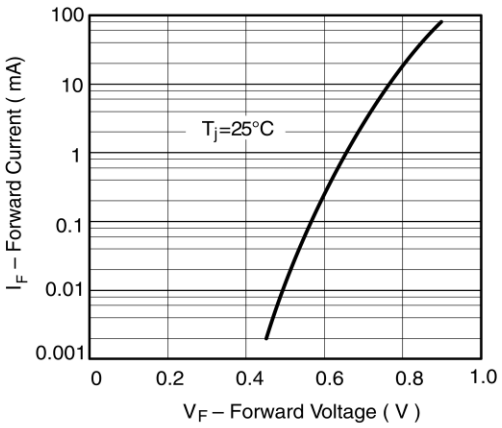

Figure 7. Forward Current vs. Forward Voltage

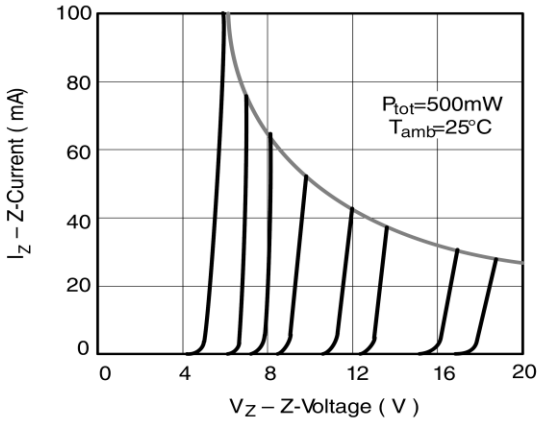

Figure 8. Z-Current vs. Z-Voltage

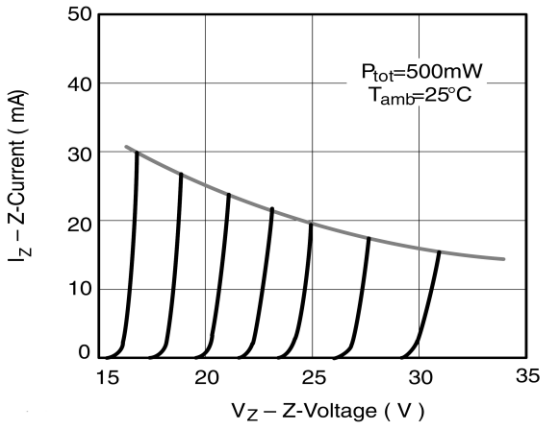

Figure 9. Z-Current vs. Z-Voltage

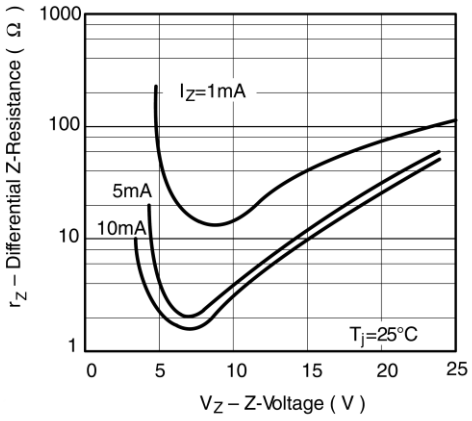

Figure 10. Differential Z-Resistance vs. Z-Voltage

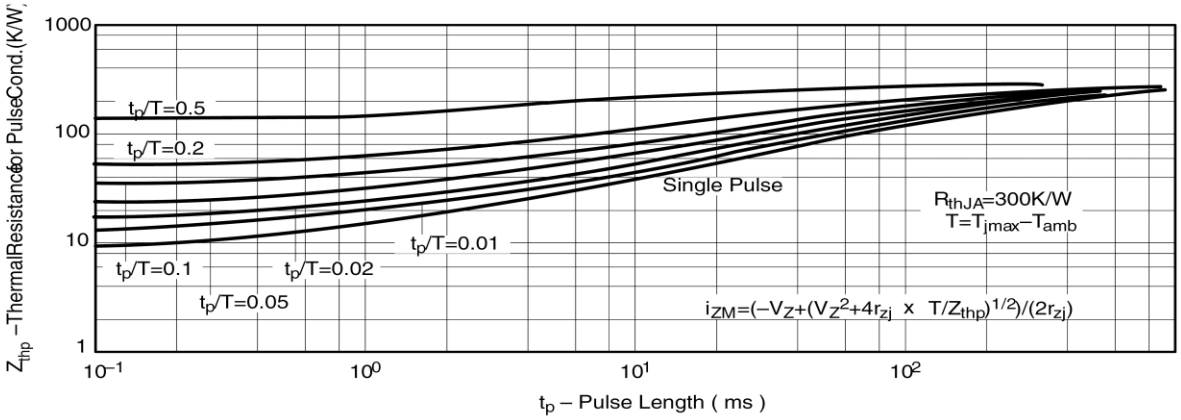

Figure 11. Thermal Response