

## ZENER DIODE

<b>1N4678 THRU 1N4717</b>	<b>VOLTAGE RANGE</b>	<b>1.8 to 43 Volts</b>
	<b>POWER DISSIPATION</b>	<b>500 mWatt</b>

### FEATURES

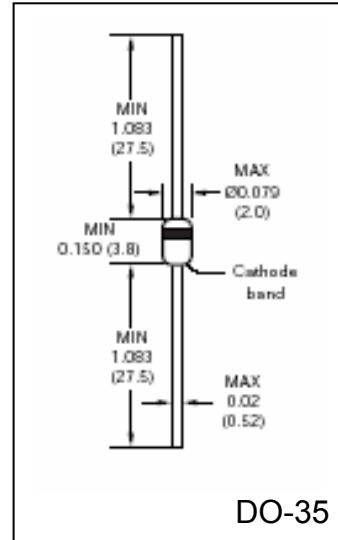
- Planer die construction
- General Purpose, high power device
- 500 mW power dissipation
- 5% Zener Voltage tolerance

### MECHANICAL DATA

- Case: Plastic DO-35
- Leads: Solderable per MIL-STD 750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0045 ounce, 0.13gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified



	SYMBOL	VALUE	UNIT
Device Characteristics – See table			
Power dissipation (Note 1)	$P_D$	500	mWatt
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	300	°C/W
Forward Voltat at $I_F = 100\text{mA}$	$V_F$	1.5	volts
Operating Junction Temperature Range	$T_J$	(-65 to +175)	°C
Storage Temperature Range	$T_{STG}$	(-65 to +175)	°C

### Notes:

1. Provided terminals are kept at ambient temperature



## RATINGS FOR 1N4768 THRU 1N4717

**Electrical Characteristics - All values at  $T_A = 25^{\circ}\text{C}$  unless otherwise specified**

Type Number	Zener Voltage (Note 1) @ $I_Z = 50\mu\text{A}$			Max Reverse Current	Test Voltage	Max Zener Current	Max Voltage $\Delta$ Change (Note 2)
	$V_Z$ Nom Volts	$V_Z$ Min Volts	$V_Z$ Max Volts	$I_R$ $\mu\text{A}$	$V_R$ Volts	$I_{ZM}$ mA	$\Delta V_Z$ Volts
1N4678	1.8	1.71	1.89	7.5	1.0	120	0.70
1N4679	2.0	1.90	2.10	5.0	1.0	110	0.70
1N4680	2.2	2.09	2.31	4.0	1.0	100	0.75
1N4681	2.4	2.28	2.52	2.0	1.0	95.0	0.80
1N4682	2.7	2.57	2.84	1.0	1.0	90.0	0.85
1N4683	3.0	2.85	3.15	0.8	1.0	85.0	0.90
1N4684	3.3	3.14	3.47	7.5	1.5	80.0	0.95
1N4685	3.6	3.42	3.78	7.5	2.0	75.0	0.959
1N4686	3.9	3.71	4.10	5.	2.0	70.0	0.97
1N4687	4.3	4.09	4.52	4.0	2.0	65.0	0.99
1N4688	4.7	4.47	4.94	10.0	3.0	60.0	0.99
1N4689	5.1	4.85	5.36	10.0	3.0	55.0	0.97
1N4690	5.6	5.32	5.88	10.0	4.0	50.0	0.96
1N4691	6.2	5.89	6.51	10.0	5.0	45.0	0.95
1N4692	6.8	6.46	7.14	10.0	5.1	35.0	0.90
1N4693	7.5	7.13	7.88	10.0	5.7	31.8	0.75
1N4694	8.2	7.79	8.61	1.0	6.2	29.0	0.50
1N4695	8.7	8.27	9.14	1.0	6.6	27.4	0.10
1N4696	9.1	8.65	9.56	1.0	6.9	26.2	0.08
1N4697	10	9.50	10.5	1.0	7.6	24.8	0.10
1N4698	11	10.5	11.6	0.05	8.4	21.6	0.11
1N4699	12	11.4	12.6	0.05	9.1	20.4	0.12
1N4700	13	12.4	13.7	0.05	9.8	19.0	0.13
1N4701	14	13.3	14.7	0.05	10.6	17.5	0.14
1N4702	15	14.3	15.8	0.05	11.4	16.3	0.15
1N4703	16	15.2	16.8	0.05	12.1	15.4	0.16
1N4704	17	16.2	17.9	0.05	12.9	14.5	0.17
1N4705	18	17.1	18.9	0.05	13.6	13.2	0.18
1N4706	19	18.1	20.0	0.05	14.4	12.5	0.19
1N4707	20	19	21.0	0.01	15.2	11.9	0.20
1N4708	22	20.9	23.1	0.01	16.7	10.8	0.22
1N4709	24	22.6	25.2	0.01	18.2	9.9	0.24
1N4710	25	23.8	26.3	0.01	19.0	9.5	0.25
1N4711	27	25.7	28.4	0.01	20.4	8.8	0.27
1N4712	28	26.6	29.4	0.01	21.2	8.5	0.28
1N4713	30	28.5	31.5	0.01	22.8	7.9	0.30
1N4714	33	31.4	34.7	0.01	25.0	7.2	0.33
1N4715	36	34.2	37.8	0.01	27.3	6.6	0.36
1N4716	39	37.1	41.0	0.01	29.6	6.1	0.39
1N4717	43	40.9	45.2	0.01	32.6	5.5	0.43

**Notes:**

1. Tested with pulses,  $t_p = 5\text{mS}$
2.  $\Delta V_Z$  is the difference between BZ at  $100\mu\text{A}$  and  $10\mu\text{A}$



## CHARACTERISTIC CURVES 1N4681 THRU 1N4717

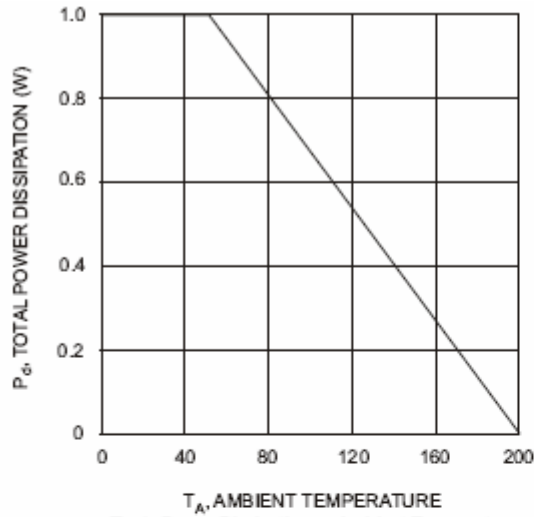


Fig. 1 Power Dissipation vs Ambient Temperature

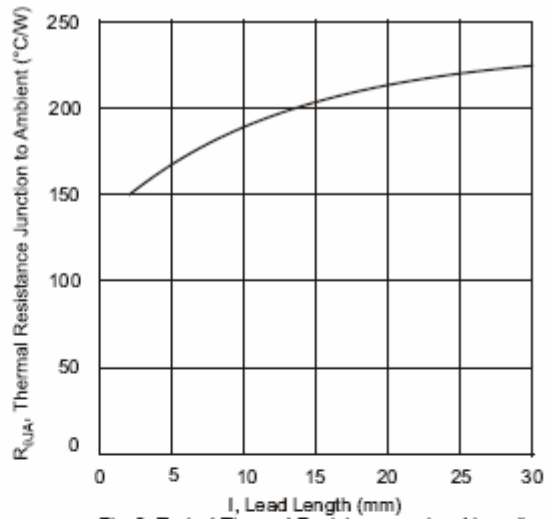


Fig. 2 Typical Thermal Resistance vs. Lead Length

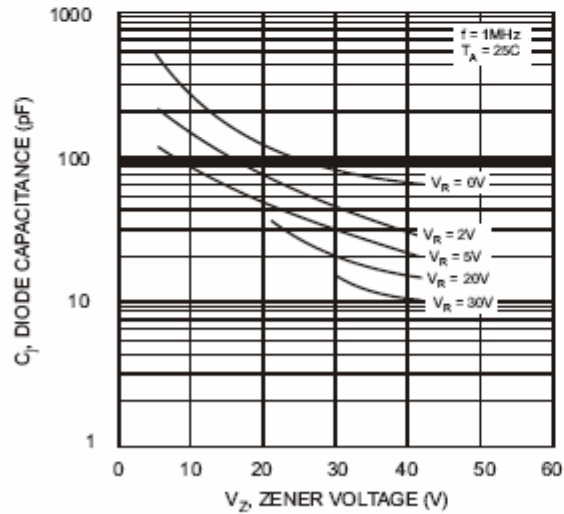


Fig. 3, Junction Capacitance vs Zener Voltage

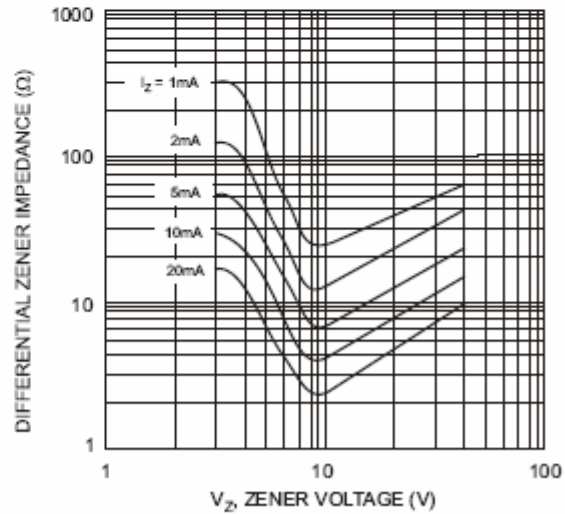


Fig. 4 Typical Zener Impedance vs. Zener Voltage