

1N4678 - 1N4717

V_Z : 1.8 - 43 V

P_D : 500 mW

FEATURES :

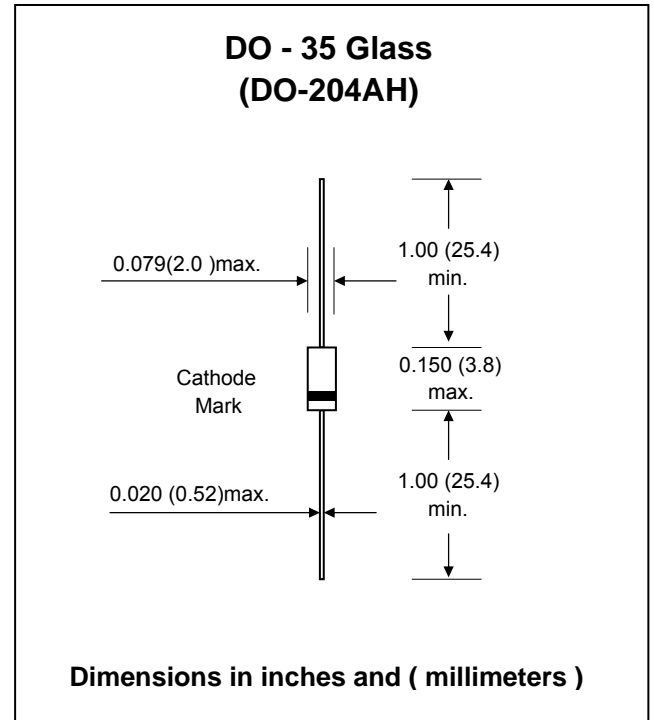
- * Zener voltage specified at 50 μ A
- * Maximum delta V_Z given from 10 μ A to 100 μ A
- * Very high stability
- * Low noise
- * Pb / RoHS Free

MECHANICAL DATA :

Case: DO-35 Glass Case

Weight: approx. 0.13g

ZENER DIODES



Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specific

| Parameter | Symbol | Value | Unit |
|---|-----------------|--------------|------|
| Power Dissipation at $T_L \leq 50$ °C (Note1) | P_D | 500 | mW |
| Maximum Forward Voltage at $I_F = 200$ mA | V_F | 1.1 | V |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 310 | °C/W |
| Thermal Resistance Junction to Lead | $R_{\theta JL}$ | 250 | °C/W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to + 175 | °C |

Note :

(1) At 3/8" (10 mm) lead length from body, when mounted on FR4 PC board as described for thermal resistance.



Electrical Characteristics (Rating at 25 °C ambient temperature unless otherwise specified)

| Type No. (Note 1) | Nominal Zener Voltage ⁽³⁾ | | Zener Test Current | Max. Voltage Regulation | Max. Reverse Leakage Current | | Max. Zener Current |
|----------------------|--------------------------------------|-----------------|--------------------|--------------------------------|------------------------------|----------------|--------------------|
| | V _Z @ | I _{ZT} | I _{ZT} | ΔV _Z ⁽²⁾ | I _R @ | V _R | I _{ZM} |
| | (V) | | μA | (V) | (μA) | (V) | (mA) |
| 1N4678 | 1.8 | | 50 | 0.70 | 7.5 | 1.0 | 240 |
| 1N4679 | 2.0 | | 50 | 0.70 | 5.0 | 1.0 | 220 |
| 1N4680 | 2.2 | | 50 | 0.75 | 4.0 | 1.0 | 200 |
| 1N4681 | 2.4 | | 50 | 0.80 | 2.0 | 1.0 | 190 |
| 1N4682 | 2.7 | | 50 | 0.85 | 1.0 | 1.0 | 180 |
| 1N4683 | 3.0 | | 50 | 0.90 | 0.8 | 1.0 | 170 |
| 1N4684 | 3.3 | | 50 | 0.95 | 7.5 | 1.5 | 160 |
| 1N4685 | 3.6 | | 50 | 0.95 | 7.5 | 2.0 | 150 |
| 1N4686 | 3.9 | | 50 | 0.97 | 5.0 | 2.0 | 140 |
| 1N4687 | 4.3 | | 50 | 0.99 | 4.0 | 2.0 | 130 |
| 1N4688 | 4.7 | | 50 | 0.99 | 10 | 3.0 | 120 |
| 1N4689 | 5.1 | | 50 | 0.97 | 10 | 3.0 | 110 |
| 1N4690 | 5.6 | | 50 | 0.96 | 10 | 4.0 | 100 |
| 1N4691 | 6.2 | | 50 | 0.95 | 10 | 5.0 | 90 |
| 1N4692 | 6.8 | | 50 | 0.90 | 10 | 5.1 | 70 |
| 1N4693 | 7.5 | | 50 | 0.75 | 10 | 5.7 | 63.6 |
| 1N4694 | 8.2 | | 50 | 0.50 | 1.0 | 6.2 | 58.0 |
| 1N4695 | 8.7 | | 50 | 0.10 | 1.0 | 6.6 | 54.8 |
| 1N4696 | 9.1 | | 50 | 0.08 | 1.0 | 6.9 | 52.4 |
| 1N4697 | 10 | | 50 | 0.10 | 1.0 | 7.6 | 49.6 |
| 1N4698 | 11 | | 50 | 0.11 | 0.05 | 8.4 | 43.2 |
| 1N4699 | 12 | | 50 | 0.12 | 0.05 | 9.1 | 40.8 |
| 1N4700 | 13 | | 50 | 0.13 | 0.05 | 9.8 | 38.0 |
| 1N4701 | 14 | | 50 | 0.14 | 0.05 | 10.6 | 35.0 |
| 1N4702 | 15 | | 50 | 0.15 | 0.05 | 11.4 | 32.6 |
| 1N4703 | 16 | | 50 | 0.16 | 0.05 | 12.1 | 30.8 |
| 1N4704 | 17 | | 50 | 0.17 | 0.05 | 12.9 | 29.0 |
| 1N4705 | 18 | | 50 | 0.18 | 0.05 | 13.6 | 26.4 |
| 1N4706 | 19 | | 50 | 0.19 | 0.05 | 14.4 | 25.0 |
| 1N4707 | 20 | | 50 | 0.20 | 0.01 | 15.2 | 23.8 |
| 1N4708 | 22 | | 50 | 0.22 | 0.01 | 16.7 | 21.6 |
| 1N4709 | 24 | | 50 | 0.24 | 0.01 | 18.2 | 19.8 |
| 1N4710 | 25 | | 50 | 0.25 | 0.01 | 19.0 | 19.0 |
| 1N4711 | 27 | | 50 | 0.27 | 0.01 | 20.4 | 17.6 |
| 1N4712 | 28 | | 50 | 0.28 | 0.01 | 21.2 | 17.0 |
| 1N4713 | 30 | | 50 | 0.30 | 0.01 | 22.8 | 15.8 |
| 1N4714 | 33 | | 50 | 0.33 | 0.01 | 25.0 | 14.4 |
| 1N4715 | 36 | | 50 | 0.36 | 0.01 | 27.3 | 13.2 |
| 1N4716 | 39 | | 50 | 0.39 | 0.01 | 29.6 | 12.2 |
| 1N4717 | 43 | | 50 | 0.43 | 0.01 | 32.6 | 11.0 |

Notes :

- (1) The type numbers shown have a standard tolerance of ± 5 % on the nominal zener voltage.
- (2) ΔV_Z @ 100 μA minus V_Z @ 10 μA
- (3) The electrical characteristics are measured after allowing the device to stabilize for 20 seconds when mounted with 3/8" minimum lead length from the base.

RATING AND CHARACTERISTIC CURVES (1N4678 - 1N4717)

FIG.1 - POWER DERATING CURVE

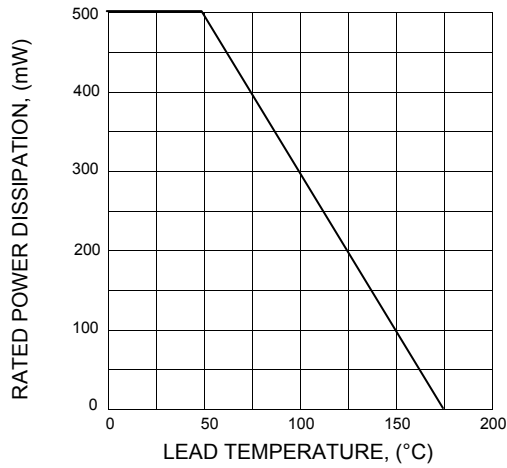


FIG.2 - ZENER VOLTAGE TEMPERATURE COEFFICIENT VS. ZENER VOLTAGE

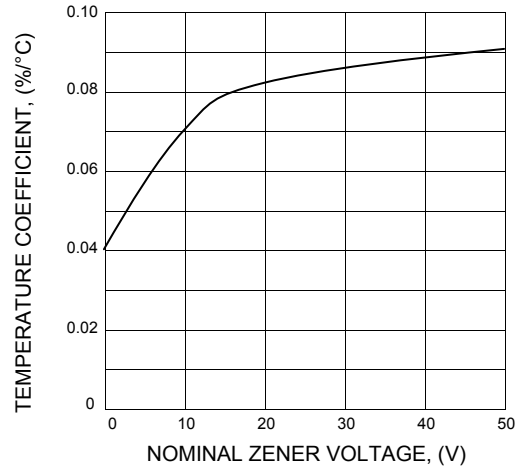


FIG.3 - CAPACITANCE VS. V_z CURVE

