



**THE DATASHEET OF
1N4679 TR**



1N4678 THRU 1N4717
SILICON ZENER DIODE
LOW LEVEL
500mW, 1.8 THRU 43 VOLT
5% TOLERANCE

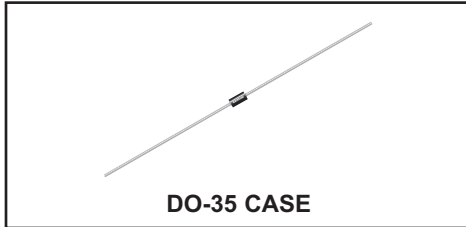


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DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1N4678 series devices are silicon Zener diodes designed for applications requiring an extremely low operating current (50µA), and low leakage.

MARKING: Devices shall either be marked with the prefix 'C' followed by the full part number or by the marking code in the Electrical Characteristics Table.



MAXIMUM RATINGS: (T_L=75°C)

Power Dissipation
 Operating and Storage Junction Temperature

SYMBOL

P_D
 T_J, T_{stg}

UNITS

mW
 °C

ELECTRICAL CHARACTERISTICS: (T_A=25°C) V_F=1.5V MAX @ I_F=100mA (for all types)

| Type | Zener Voltage V _Z @ I _{ZT} | | | Test Current I _{ZT} µA | Maximum Reverse Leakage Current | | Maximum Voltage Change* ΔV _Z V | Maximum Regulator Current I _{ZM} mA | Marking Code |
|--------|---|-----|-------|---------------------------------------|---------------------------------|-----|---|--|--------------|
| | MIN | NOM | MAX | | I _R @ V _R | | | | |
| | V | V | V | | µA | V | | | |
| 1N4678 | 1.710 | 1.8 | 1.890 | 50 | 7.5 | 1.0 | 0.70 | 120.0 | C4678 |
| 1N4679 | 1.900 | 2.0 | 2.100 | 50 | 5.0 | 1.0 | 0.70 | 110.0 | C4679 |
| 1N4680 | 2.090 | 2.2 | 2.310 | 50 | 4.0 | 1.0 | 0.75 | 100.0 | C4680 |
| 1N4681 | 2.280 | 2.4 | 2.520 | 50 | 2.0 | 1.0 | 0.80 | 95.0 | C4681 |
| 1N4682 | 2.565 | 2.7 | 2.835 | 50 | 1.0 | 1.0 | 0.85 | 90.0 | C4682 |
| 1N4683 | 2.850 | 3.0 | 3.150 | 50 | 0.8 | 1.0 | 0.90 | 85.0 | C4683 |
| 1N4684 | 3.135 | 3.3 | 3.465 | 50 | 7.5 | 1.5 | 0.95 | 80.0 | C4684 |
| 1N4685 | 3.420 | 3.6 | 3.780 | 50 | 7.5 | 2.0 | 0.95 | 75.0 | C4685 |
| 1N4686 | 3.705 | 3.9 | 4.095 | 50 | 5.0 | 2.0 | 0.97 | 70.0 | C4686 |
| 1N4687 | 4.085 | 4.3 | 4.515 | 50 | 4.0 | 2.0 | 0.99 | 65.0 | C4687 |
| 1N4688 | 4.465 | 4.7 | 4.935 | 50 | 10 | 3.0 | 0.99 | 60.0 | C4688 |
| 1N4689 | 4.845 | 5.1 | 5.355 | 50 | 10 | 3.0 | 0.97 | 55.0 | C4689 |
| 1N4690 | 5.320 | 5.6 | 5.880 | 50 | 10 | 4.0 | 0.96 | 50.0 | C4690 |
| 1N4691 | 5.890 | 6.2 | 6.510 | 50 | 10 | 5.0 | 0.95 | 45.0 | C4691 |
| 1N4692 | 6.460 | 6.8 | 7.140 | 50 | 10 | 5.1 | 0.90 | 35.0 | C4692 |
| 1N4693 | 7.125 | 7.5 | 7.875 | 50 | 10 | 5.7 | 0.75 | 31.8 | C4693 |
| 1N4694 | 7.790 | 8.2 | 8.610 | 50 | 1.0 | 6.2 | 0.50 | 29.0 | C4694 |
| 1N4695 | 8.265 | 8.7 | 9.135 | 50 | 1.0 | 6.6 | 0.10 | 27.6 | C4695 |
| 1N4696 | 8.645 | 9.1 | 9.555 | 50 | 1.0 | 6.9 | 0.08 | 26.2 | C4696 |
| 1N4697 | 9.500 | 10 | 10.50 | 50 | 1.0 | 7.6 | 0.10 | 24.8 | C4697 |

* ΔV_Z=V_Z @ 100µA Minus V_Z @ 10µA

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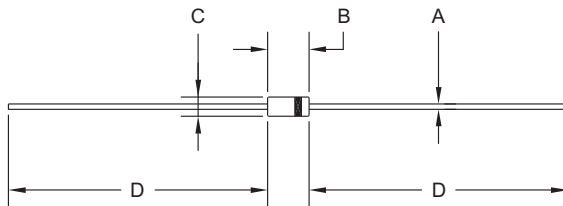


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$) $V_F=1.5\text{V MAX @ } I_F=100\text{mA}$ (for all types)

| Type | Zener Voltage $V_Z @ I_{ZT}$ | | | Test Current | Maximum Reverse Leakage Current | | Maximum Voltage Change* | Maximum Regulator Current | Marking Code |
|--------|---------------------------------|-----|-------|---------------|---------------------------------|-------------|-------------------------|---------------------------|--------------|
| | MIN | NOM | MAX | | I_{ZT} | $I_R @ V_R$ | | | |
| | V | V | V | μA | μA | V | V | mA | |
| 1N4698 | 10.45 | 11 | 11.55 | 50 | 0.05 | 8.4 | 0.11 | 21.6 | C4698 |
| 1N4699 | 11.40 | 12 | 12.60 | 50 | 0.05 | 9.1 | 0.12 | 20.4 | C4699 |
| 1N4700 | 12.35 | 13 | 13.65 | 50 | 0.05 | 9.8 | 0.13 | 19.0 | C4700 |
| 1N4701 | 13.30 | 14 | 14.70 | 50 | 0.05 | 10.6 | 0.14 | 17.5 | C4701 |
| 1N4702 | 14.25 | 15 | 15.75 | 50 | 0.05 | 11.4 | 0.15 | 16.3 | C4702 |
| 1N4703 | 15.20 | 16 | 16.80 | 50 | 0.05 | 12.1 | 0.16 | 15.4 | C4703 |
| 1N4704 | 16.15 | 17 | 17.85 | 50 | 0.05 | 12.9 | 0.17 | 14.5 | C4704 |
| 1N4705 | 17.10 | 18 | 18.90 | 50 | 0.05 | 13.6 | 0.18 | 13.2 | C4705 |
| 1N4706 | 18.05 | 19 | 19.95 | 50 | 0.05 | 14.4 | 0.19 | 12.5 | C4706 |
| 1N4707 | 19.00 | 20 | 21.00 | 50 | 0.01 | 15.2 | 0.20 | 11.9 | C4707 |
| 1N4708 | 20.90 | 22 | 23.10 | 50 | 0.01 | 16.7 | 0.22 | 10.8 | C4708 |
| 1N4709 | 22.80 | 24 | 25.20 | 50 | 0.01 | 18.2 | 0.24 | 9.9 | C4709 |
| 1N4710 | 23.75 | 25 | 26.25 | 50 | 0.01 | 19.0 | 0.25 | 9.5 | C4710 |
| 1N4711 | 25.65 | 27 | 28.35 | 50 | 0.01 | 20.4 | 0.27 | 8.8 | C4711 |
| 1N4712 | 26.60 | 28 | 29.40 | 50 | 0.01 | 21.2 | 0.28 | 8.5 | C4712 |
| 1N4713 | 28.50 | 30 | 31.50 | 50 | 0.01 | 22.8 | 0.30 | 7.9 | C4713 |
| 1N4714 | 31.35 | 33 | 34.65 | 50 | 0.01 | 25.0 | 0.33 | 7.2 | C4714 |
| 1N4715 | 34.20 | 36 | 37.80 | 50 | 0.01 | 27.3 | 0.36 | 6.6 | C4715 |
| 1N4716 | 37.05 | 39 | 40.95 | 50 | 0.01 | 29.6 | 0.39 | 6.1 | C4716 |
| 1N4717 | 40.85 | 43 | 45.15 | 50 | 0.01 | 32.6 | 0.43 | 5.5 | C4717 |

* $\Delta V_Z = V_Z @ 100\mu\text{A}$ Minus $V_Z @ 10\mu\text{A}$

DO-35 CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.018 | 0.022 | 0.46 | 0.56 |
| B | 0.120 | 0.200 | 3.05 | 5.08 |
| C | 0.060 | 0.090 | 1.52 | 2.29 |
| D | 1.000 | - | 25.40 | - |

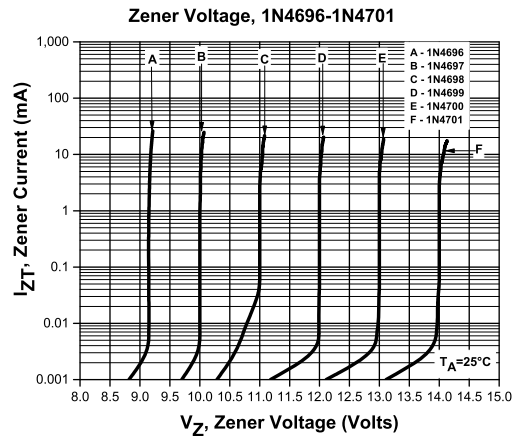
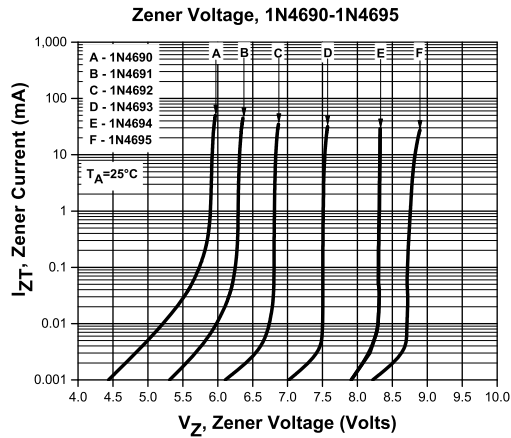
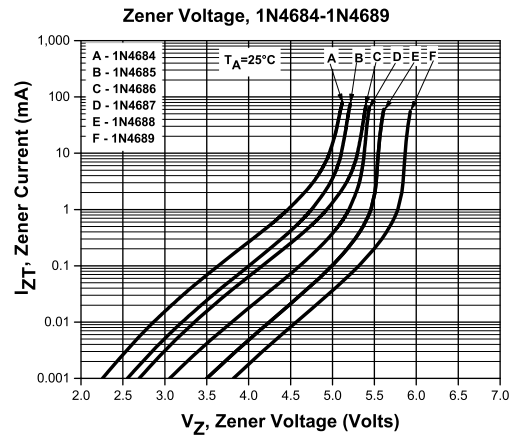
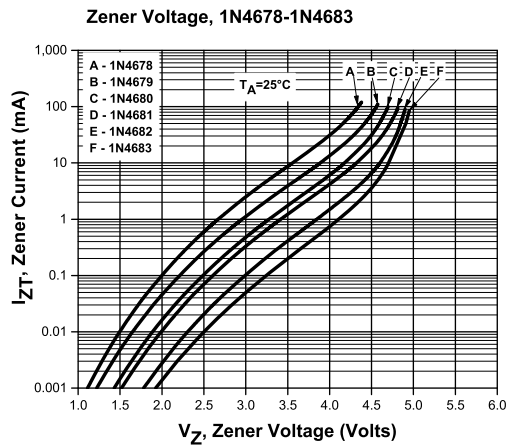
DO-35 (REV: R1)

R6 (23-July 2018)

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TYPICAL ELECTRICAL CHARACTERISTICS



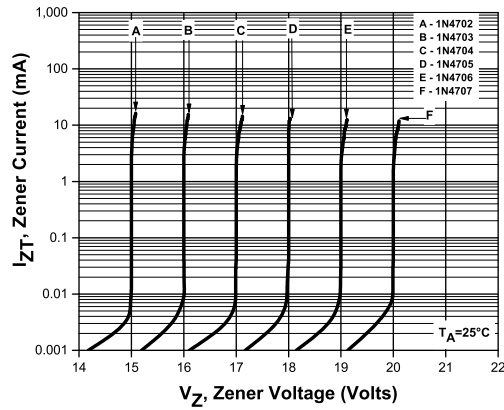
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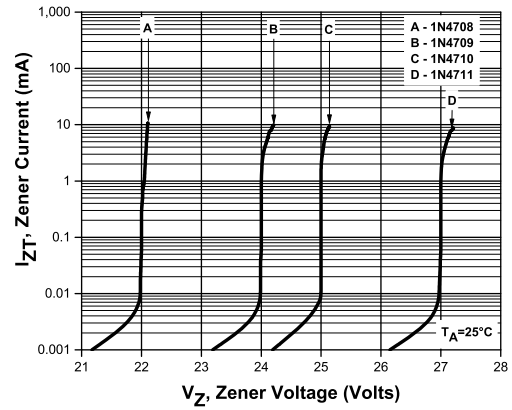


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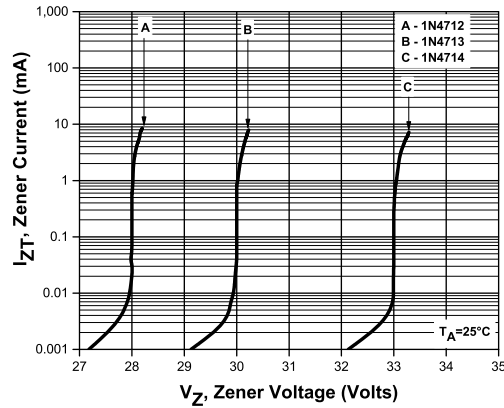
Zener Voltage, 1N4702-1N4707



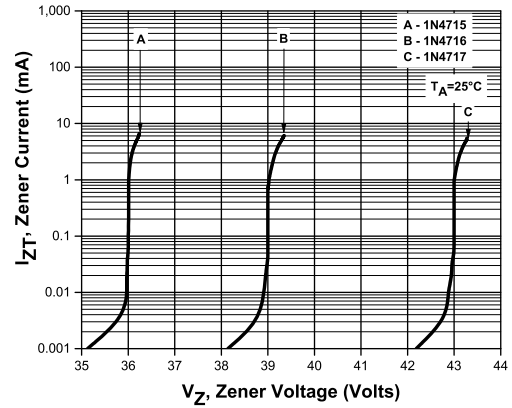
Zener Voltage, 1N4708-1N4711



Zener Voltage, 1N4712-1N4714



Zener Voltage, 1N4715-1N4717

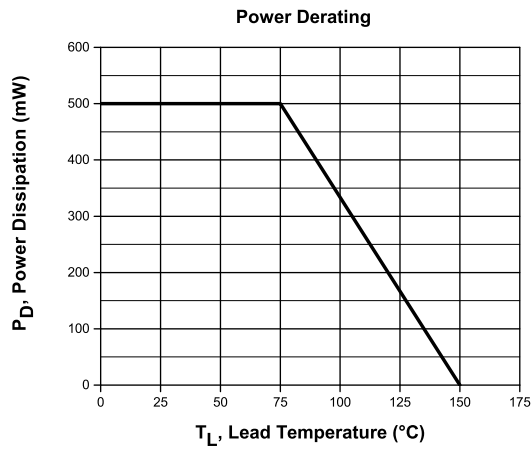


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TYPICAL ELECTRICAL CHARACTERISTICS



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OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management