

# Temperature Compensated Zener Reference Diode Series



1N4565UR thru 1N4584AUR, 1N4565AUR-1 thru 1N4584AUR-1

## Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/452
- 6.4 Volt Nominal Zener Voltage  $\pm 5\%$
- Metallurgically Bonded

## Maximum Ratings

Operating & Storage Temperature:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

DC Power Dissipation: 500mW @  $+50^{\circ}\text{C}$

Power Derating: 4 mW /  $^{\circ}\text{C}$  above  $+50^{\circ}\text{C}$

## REVERSE LEAKAGE CURRENT

$I_R = 2\ \mu\text{A}$  @  $25^{\circ}\text{C}$  &  $V_R = 3\ \text{Vdc}$

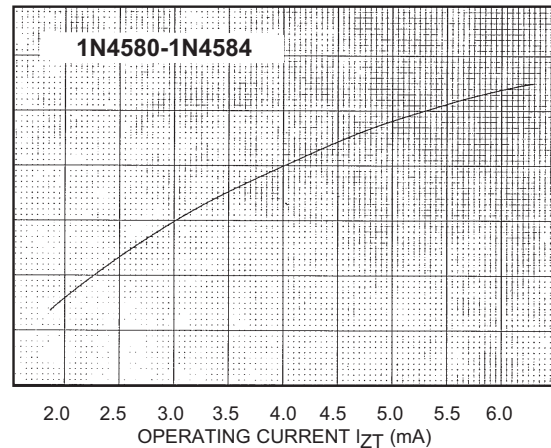
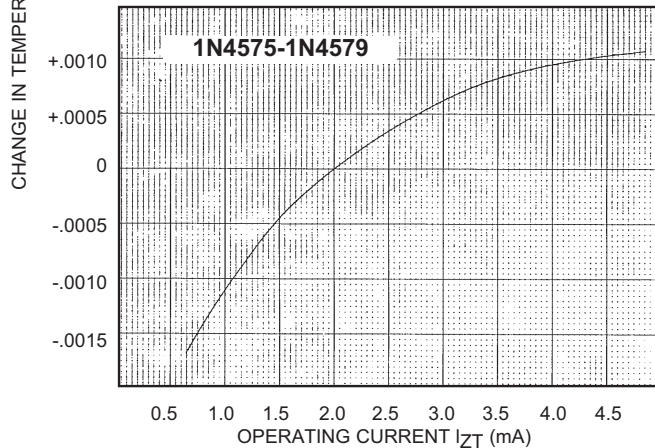
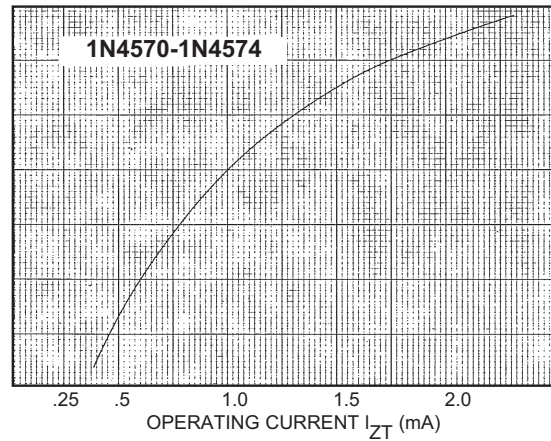
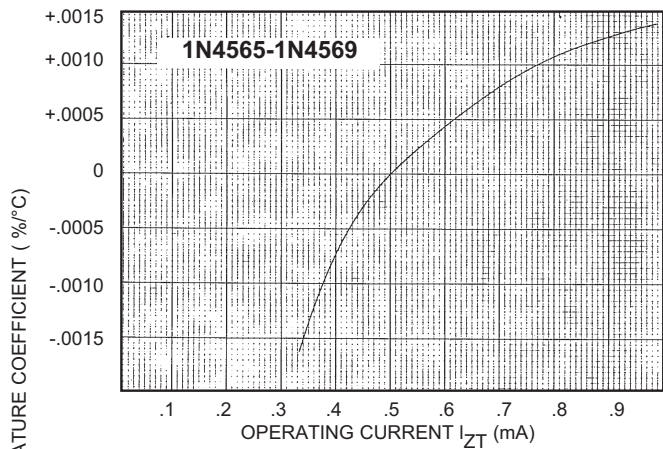
## Electrical Specifications @ $+25^{\circ}\text{C}$ (Unless Otherwise Specified)

| JEDEC<br>Type<br>Number | Zener<br>Test<br>Current | Effective<br>Temperature<br>Coefficient | Voltage<br>Temperature<br>Stability<br>( $3V_{ZT}$ maximum)<br>(Note 1) | Temperature<br>Range            | Maximum Dynamic<br>Zener<br>Impedance<br>(Note 2) |
|-------------------------|--------------------------|-----------------------------------------|-------------------------------------------------------------------------|---------------------------------|---------------------------------------------------|
|                         | mA                       | $\%/^{\circ}\text{C}$                   | mV                                                                      | $^{\circ}\text{C}$              | Ohms                                              |
| 1N4565UR, -1            | 0.5                      | 0.01                                    | 48                                                                      | 0 to $+75^{\circ}\text{C}$      | 200                                               |
| 1N4565AUR, -1           | 0.5                      | 0.01                                    | 100                                                                     | $-55$ to $+100^{\circ}\text{C}$ | 200                                               |
| 1N4566UR, -1            | 0.5                      | 0.005                                   | 24                                                                      | 0 to $+75^{\circ}\text{C}$      | 200                                               |
| 1N4566AUR, -1           | 0.5                      | 0.005                                   | 50                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 200                                               |
| 1N4567UR, -1            | 0.5                      | 0.002                                   | 10                                                                      | 0 to $+75^{\circ}\text{C}$      | 200                                               |
| 1N4567AUR, -1           | 0.5                      | 0.002                                   | 20                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 200                                               |
| 1N4568UR, -1            | 0.5                      | 0.001                                   | 5                                                                       | 0 to $+75^{\circ}\text{C}$      | 200                                               |
| 1N4568AUR, -1           | 0.5                      | 0.001                                   | 10                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 200                                               |
| 1N4569UR, -1            | 0.5                      | 0.0005                                  | 2.5                                                                     | 0 to $+75^{\circ}\text{C}$      | 200                                               |
| 1N4569AUR, -1           | 0.5                      | 0.0005                                  | 5                                                                       | $-55$ to $+100^{\circ}\text{C}$ | 200                                               |
| 1N4570UR, -1            | 1.0                      | 0.01                                    | 48                                                                      | 0 to $+75^{\circ}\text{C}$      | 100                                               |
| 1N4570AUR, -1           | 1.0                      | 0.01                                    | 100                                                                     | $-55$ to $+100^{\circ}\text{C}$ | 100                                               |
| 1N4571UR, -1            | 1.0                      | 0.005                                   | 24                                                                      | 0 to $+75^{\circ}\text{C}$      | 100                                               |
| 1N4571AUR, -1           | 1.0                      | 0.005                                   | 50                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 100                                               |
| 1N4572UR, -1            | 1.0                      | 0.002                                   | 10                                                                      | 0 to $+75^{\circ}\text{C}$      | 100                                               |
| 1N4572AUR, -1           | 1.0                      | 0.002                                   | 20                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 100                                               |
| 1N4573UR, -1            | 1.0                      | 0.001                                   | 5                                                                       | 0 to $+75^{\circ}\text{C}$      | 100                                               |
| 1N4573AUR, -1           | 1.0                      | 0.001                                   | 10                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 100                                               |
| 1N4574UR, -1            | 1.0                      | 0.0005                                  | 2.5                                                                     | 0 to $+75^{\circ}\text{C}$      | 100                                               |
| 1N4574AUR, -1           | 1.0                      | 0.0005                                  | 5                                                                       | $-55$ to $+100^{\circ}\text{C}$ | 100                                               |
| 1N4575UR, -1            | 2.0                      | 0.01                                    | 48                                                                      | 0 to $+75^{\circ}\text{C}$      | 50                                                |
| 1N4575AUR, -1           | 2.0                      | 0.01                                    | 100                                                                     | $-55$ to $+100^{\circ}\text{C}$ | 50                                                |
| 1N4576UR, -1            | 2.0                      | 0.005                                   | 24                                                                      | 0 to $+75^{\circ}\text{C}$      | 50                                                |
| 1N4576AUR, -1           | 2.0                      | 0.005                                   | 50                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 50                                                |
| 1N4577UR, -1            | 2.0                      | 0.002                                   | 10                                                                      | 0 to $+75^{\circ}\text{C}$      | 50                                                |
| 1N4577AUR, -1           | 2.0                      | 0.002                                   | 20                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 50                                                |
| 1N4578UR, -1            | 2.0                      | 0.001                                   | 5                                                                       | 0 to $+75^{\circ}\text{C}$      | 50                                                |
| 1N4578AUR, -1           | 2.0                      | 0.001                                   | 10                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 50                                                |
| 1N4579UR, -1            | 2.0                      | 0.0005                                  | 2.5                                                                     | 0 to $+75^{\circ}\text{C}$      | 50                                                |
| 1N4579AUR, -1           | 2.0                      | 0.0005                                  | 5                                                                       | $-55$ to $+100^{\circ}\text{C}$ | 50                                                |
| 1N4580UR, -1            | 4.0                      | 0.01                                    | 48                                                                      | 0 to $+75^{\circ}\text{C}$      | 25                                                |
| 1N4580AUR, -1           | 4.0                      | 0.01                                    | 100                                                                     | $-55$ to $+100^{\circ}\text{C}$ | 25                                                |
| 1N4581UR, -1            | 4.0                      | 0.005                                   | 24                                                                      | 0 to $+75^{\circ}\text{C}$      | 25                                                |
| 1N4581AUR, -1           | 4.0                      | 0.005                                   | 50                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 25                                                |
| 1N4582UR, -1            | 4.0                      | 0.002                                   | 10                                                                      | 0 to $+75^{\circ}\text{C}$      | 25                                                |
| 1N4582AUR, -1           | 4.0                      | 0.002                                   | 20                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 25                                                |
| 1N4583UR, -1            | 4.0                      | 0.001                                   | 5                                                                       | 0 to $+75^{\circ}\text{C}$      | 25                                                |
| 1N4583AUR, -1           | 4.0                      | 0.001                                   | 10                                                                      | $-55$ to $+100^{\circ}\text{C}$ | 25                                                |
| 1N4584UR, -1            | 4.0                      | 0.0005                                  | 2.5                                                                     | 0 to $+75^{\circ}\text{C}$      | 25                                                |
| 1N4584AUR, -1           | 4.0                      | 0.0005                                  | 5                                                                       | $-55$ to $+100^{\circ}\text{C}$ | 25                                                |

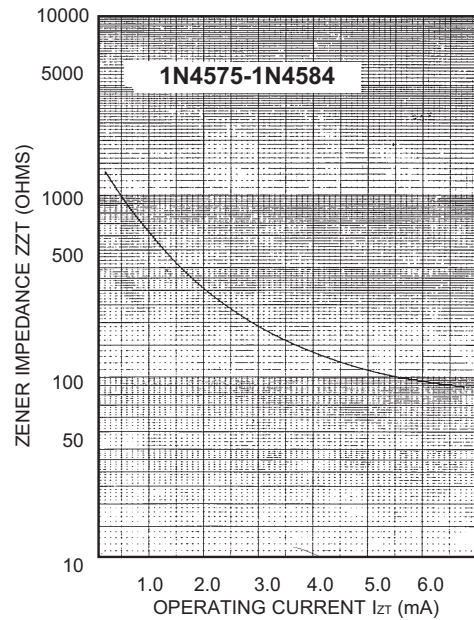
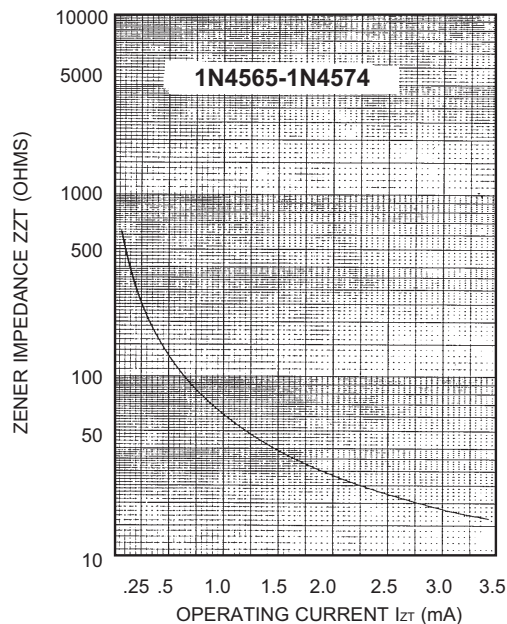
NOTE 1: The maximum allowable change observed over the entire temperature range i.e., the diode voltage will not exceed the specified mV at any discrete temperature between the established limits, per JEDEC standard No. 5.

NOTE 2: Zener impedance is derived by superimposing on  $I_{ZT}$  A 60Hz rms a.c. current equal to 10% of  $I_{ZT}$ .





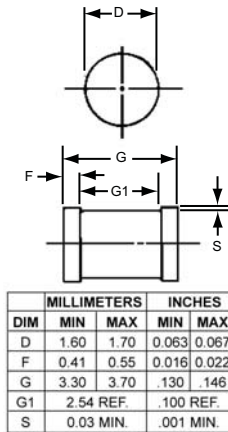
**TYPICAL CHANGE OF TEMPERATURE COEFFICIENT WITH CHANGE IN OPERATING CURRENT**



**ZENER IMPEDANCE VS. OPERATING CURRENT**

1N4565UR thru 1N4584AUR,  
1N4565UR- thru 1N4584AUR-1

Outline Drawing



**LEADED DESIGN DATA**

**CASE:** DO – 213AA, Hermetically sealed glass case.  
(MELF, SOD-80, LL34)

**LEAD FINISH:** Tin / Lead

**POLARITY:** Cathode end is banded.

**MOUNTING POSITION:** Any.

**MOUNTING SURFACE SELECTION:** The Axial Coefficient of Expansion (COE) Of this Device is Approximately +6 PPM/°C. The COE of the Mounting Surface System Should Be Selected To Provide A Suitable Match With This Device.

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