1N4565 thru 1N4584A-1 DO-7

Microsemi
SCOTTSDALE DIVISION

6.4 Volt Temperature Compensated Zener Reference Diodes

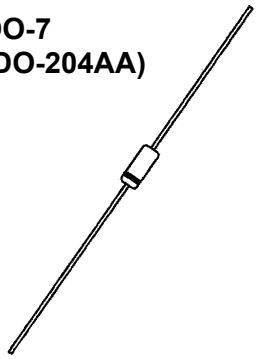
ALSO AVAILABLE IN SURFACE MOUNT

DESCRIPTION

The popular 1N4565 thru 1N4584A-1 series of Zero-TC Reference Diodes provides a selection of both 6.4 V nominal voltages and temperature coefficients to as low as 0.0005%/°C for minimal voltage change with temperature. Four different operating currents are available for selection at 0.5 mA, 1.0 mA, 2.00 mA, and 4.00 mA. These glass axial-leaded DO-7 reference diodes are internal-metallurgical-bonded and are also available in JAN, JANTX, and JANTXV military qualifications. Microsemi also offers numerous other Zener Reference Diode products for a variety of other voltages up to 200 V.

APPEARANCE

DO-7
(DO-204AA)



IMPORTANT: For the most current data, consult *MICROSEMI's* website: http://www.microsemi.com

FEATURES

- JEDEC registered 1N4565 thru 1N4584 series .
- Reference voltage diodes of nominal 6.4 V +/- 5% with tighter tolerance options available
- Temperature Coefficient range: 0.01%/°C to 0.0005%/°C.
- Zener Test Current selection range: 0.500 mA, 1.00 mA, 2.00 mA and 4.00 mA.
- Internal metallurgical bonded
- 1N4565 thru 1N4584 also have qualification to MIL-PRF-19500/452 by adding the JAN, JANTX, JANTXV, or JANS prefixes to part numbers a well as the "-1" suffix; e.g. JANTX1N4574A-1, etc.
- Military surface mount equivalents also available in DO-213AA by adding UR-1 suffix and the JAN, JANTX, and JANTXV prefix, e.g. JANTX1N4569AUR-1 (see separate data sheet)
- Also available in DO-35 package including military qualifications up to JANTXV (see separate data sheet)

APPLICATIONS / BENEFITS

- Provides minimal voltage change over a broad operating temperature range for instrumentation and other circuit designs requiring a voltage reference
- Temperature coefficient selections available from 0.01%/°C to 0.0005%/°C
- Tight reference voltage tolerances available with nominal value of 6.4 V by adding tolerance 1%, 2%, 3%, etc. after the part number for identification, e.g. 1N4569-2%, 1N4579A-1%, 1N4574A-1-1%, etc.
- Flexible axial-leaded mounting terminals
- Nonsensitive to ESD per MIL-STD-750 Method 1020

MAXIMUM RATINGS

- Operating Temperatures: -65°C to +175°C
- Storage Temperatures: -65°C to +175°C
- DC Power Dissipation: 500 mW @ T_L = 25°C with maximum current I_{ZM} 70 mA. NOTE: For optimum voltage-temperature stability, the operating test current (I_{ZT}) should be as specified in the Electrical Characteristics Table (power less than 30 mW)
- Solder Temperatures: 260°C for 10 s (max)

MECHANICAL AND PACKAGING

- CASE: Hermetically sealed glass case. DO-7 (DO-204AA) package
- TERMINALS: Leads, tin-lead plated solderable per MIL-STD-750, Method 2026
- MARKING: Part number and cathode band
- POLARITY: Reference diode to be operated with the banded end positive with respect to the opposite end
- TAPE & REEL option: Standard per EIA-296 (add "TR" suffix to part number)
- WEIGHT: 0.2 grams.
- See package dimensions on last page

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*ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified

JEDEC TYPE Number (Notes 1, 4 & 5)	ZENER TEST CURRENT (Note 3) I_{ZT} mA	MAXIMUM VOLTAGE TEMPERATURE COEFFICIENT			MAXIMUM REVERSE CURRENT I_R @ 3 V µA	MAX. DYNAMIC IMPEDANCE (Note 2) Z_{ZT} @ I_{ZT} OHMS
		α_{VZ} +/- %/°C	+/- mV/°C	Temp. Range		
1N4565	.5	.01	.64	0 to +75°C	2.0	200
1N4565A	.5	.01	.64	-55 to +100°C	2.0	200
1N4566	.5	.005	.32	0 to +75°C	2.0	200
1N4566A	.5	.005	.32	-55 to +100°C	2.0	200
1N4567	.5	.002	.13	0 to +75°C	2.0	200
1N4567A	.5	.002	.13	-55 to +100°C	2.0	200
1N4568	.5	.001	.06	0 to +75°C	2.0	200
1N4568A	.5	.001	.06	-55 to +100°C	2.0	200
1N4569	.5	.0005	.03	0 to +75°C	2.0	200
1N4569A	.5	.0005	.03	-55 to +100°C	2.0	200
1N4570	.5	.01	.64	0 to +75°C	2.0	100
1N4570A	.5	.01	.64	-55 to +100°C	2.0	100
1N4571	1.0	.005	.32	0 to +75°C	2.0	100
1N4571A	1.0	.005	.32	-55 to +100°C	2.0	100
1N4572	1.0	.002	.13	0 to +75°C	2.0	100
1N4572A	1.0	.002	.13	-55 to +100°C	2.0	100
1N4573	1.0	.001	.06	0 to +75°C	2.0	100
1N4573A	1.0	.001	.06	-55 to +100°C	2.0	100
1N4574	1.0	.0005	.03	0 to +75°C	2.0	100
1N4574A	1.0	.0005	.03	-55 to +100°C	2.0	100
1N4575	2.0	.01	.64	0 to +75°C	2.0	50
1N4575A	2.0	.01	.64	-55 to +100°C	2.0	50
1N4576	2.0	.005	.32	0 to +75°C	2.0	50
1N4576A	2.0	.005	.32	-55 to +100°C	2.0	50
1N4577	2.0	.002	.13	0 to +75°C	2.0	50
1N4577A	2.0	.002	.13	-55 to +100°C	2.0	50
1N4578	2.0	.001	.06	0 to +75°C	2.0	50
1N4578A	2.0	.001	.06	-55 to +100°C	2.0	50
1N4579	2.0	.0005	.03	0 to +75°C	2.0	50
1N4579A	2.0	.0005	.03	-55 to +100°C	2.0	50
1N4580	4.0	.01	.64	0 to +75°C	2.0	25
1N4580A	4.0	.01	.64	-55 to +100°C	2.0	25
1N4581	4.0	.005	.32	0 to +75°C	2.0	25
1N4581A	4.0	.005	.32	-55 to +100°C	2.0	25
1N4582	4.0	.002	.13	0 to +75°C	2.0	25
1N4582A	4.0	.002	.13	-55 to +100°C	2.0	25
1N4583	4.0	.001	.06	0 to +75°C	2.0	25
1N4583A	4.0	.001	.06	-55 to +100°C	2.0	25
1N4584	4.0	.0005	.03	0 to +75°C	2.0	25
1N4584A	4.0	.0005	.03	-55 to +100°C	2.0	25

*JEDEC Registered Data.

NOTES:

1. When ordering devices with tighter tolerances than specified for the V_Z voltage nominal of 6.40V, add a hyphened suffix to the part number for desired tolerance, e.g. 1N4569A-2%, 1N4574A-1-1%, 1N4579-1-2%, 1N4584A-1-3%, etc.
2. Zener impedance is measured by superimposing 0.75 mA ac rms on 7.5 mA dc @ 25°C.
3. Voltage measurements to be performed 15 seconds after application of dc test current I_{ZT}.
4. 1N4565 thru 1N4584 also have qualification to MIL-PRF-19500/452 by adding the JAN, JANTX, JANTXV, or JANS prefixes to part numbers as well as the "-1" suffix; e.g. JANTX1N4569A-1, JANTXV1N4574A-1, etc.
5. Designate Radiation Hardened devices with "RH" prefix instead of "1N," i.e., RH4584A.

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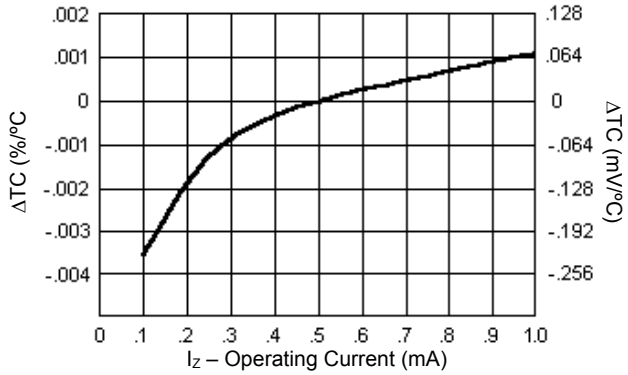
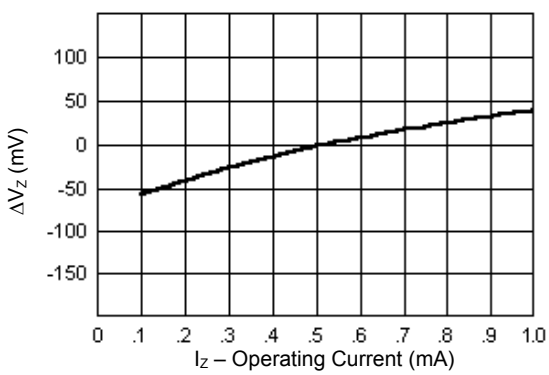
GRAPHS

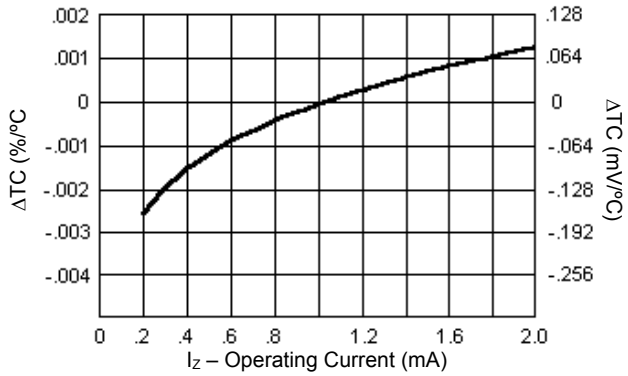
Typical change of Temperature Coefficient with change in Operating Current

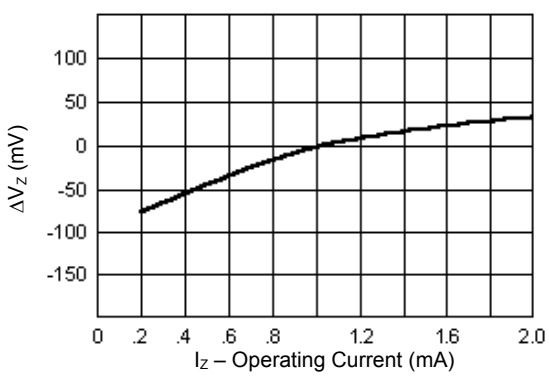
Typical Change in Zener Voltage with change in Operating Current





1N4565 – 1N4569A





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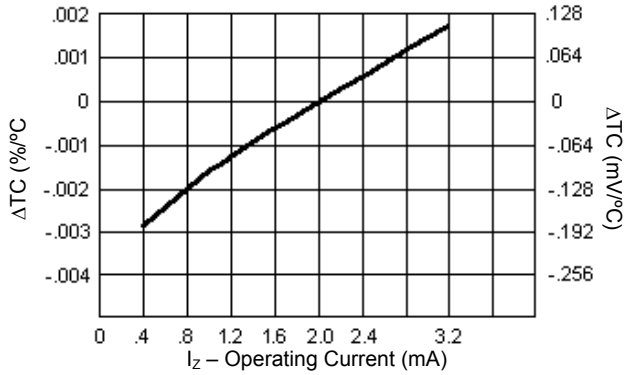

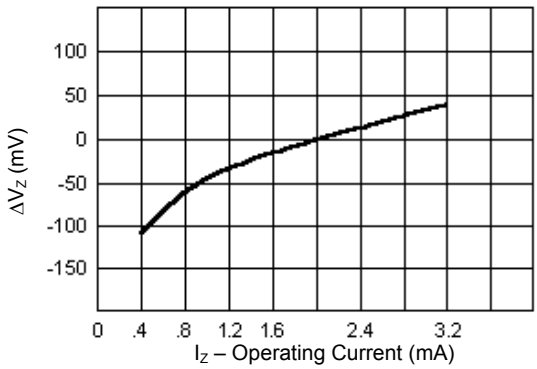

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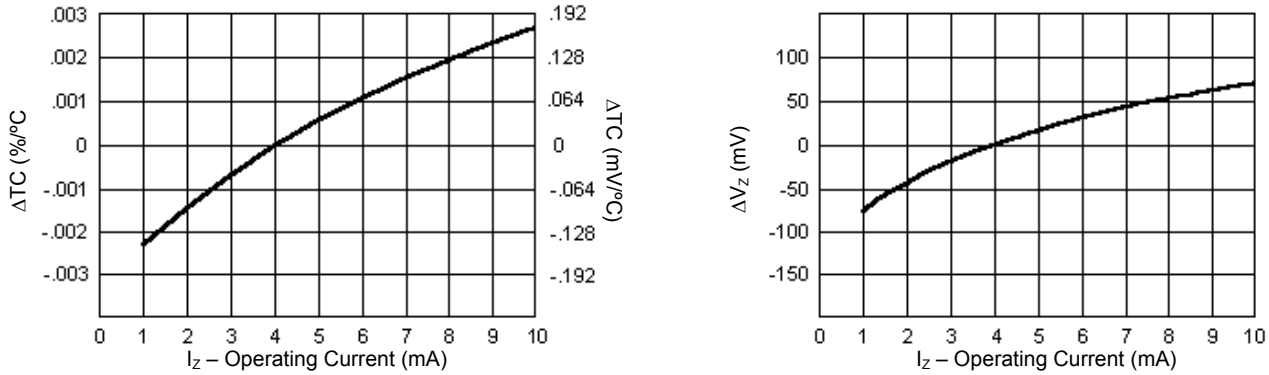
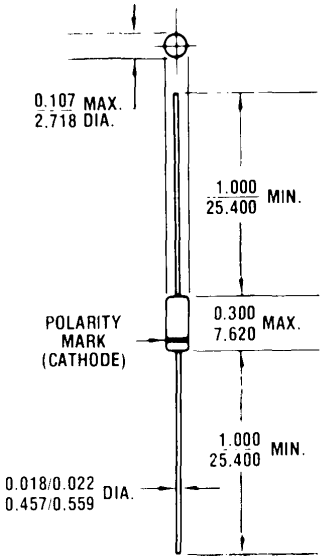


1N4580 – 1N4584A

PACKAGE DIMENSIONS



All dimensions in INCH
mm

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