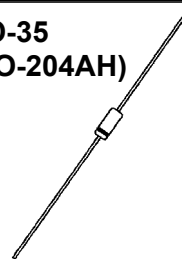


DESCRIPTION

The 1N5728 thru 1N5757 series of 0.5 watt Zener Voltage Regulators provides a selection from 4.7 to 75 volts in standard 5% tolerances as well as tighter tolerances identified by a "C" or "D" suffix letter on the part number. These glass axial-leaded DO-35 Zeners are also available with an internal-metallurgical-bond option by adding a "-1" suffix. Microsemi also offers numerous other Zener products to meet higher and lower power applications.

APPEARANCE

**DO-35
(DO-204AH)**



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

FEATURES

- JEDEC registered 1N5728 to 1N5757 series
- Internal metallurgical bond option available by adding a "-1" suffix
- Options for screening in accordance with MIL-PRF-19500 for JAN, JANTX, JANTXV, and JANS are available by adding MQ, MX, MV, or MSP prefixes respectively to part numbers with "-1" suffix
- Surface Mount equivalents are also available in DO-213AA by adding a UR or UR-1 suffix, e.g. 1N5728UR, 1N5746UR-1, etc. (see separate data sheets)
- DO-7 glass body axial-leaded Zener equivalents are also available

APPLICATIONS / BENEFITS

- Regulates voltage over a broad operating current and temperature range
- Extensive selection from 4.7 to 75 V
- Standard voltage tolerances of plus/minus 5% with a B suffix
- Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively
- Flexible axial-lead mounting terminals
- Nonsensitive to ESD per MIL-STD-750 Method 1020
- Minimal capacitance (see Figure 3)
- Inherently radiation hard as described in Microsemi MicroNote 050

MAXIMUM RATINGS

- Operating and Storage temperature: -65°C to +175°C
- Thermal Resistance: 250 °C/W junction to lead at 3/8 (10 mm) lead length from body, or 310 °C/W junction to ambient when mounted on FR4 PC board (1 oz Cu) with 4 mm² copper pads and track width 1 mm, length 25 mm
- Steady-State Power: 0.5 watts at $T_L \leq 50^\circ\text{C}$ 3/8 inch (10 mm) from body or 0.48 W at $T_A \leq 25^\circ\text{C}$ when mounted on FR4 PC board as described for thermal resistance above (also see Figure 1)
- Forward voltage @10 mA: 0.9 volts (maximum)
- Solder Temperatures: 260 °C for 10 s (max)

MECHANICAL AND PACKAGING

- CASE: Hermetically sealed axial-lead glass DO-35 (DO-204AH) package
- TERMINALS: Leads, tin-lead plated solderable per MIL-STD-750, method 2026
- POLARITY: Cathode indicated by band. Diode to be operated with the banded end positive with respect to the opposite end for Zener regulation
- MARKING: Part number
- TAPE & REEL option: Standard per EIA-296 (add "TR" suffix to part number)
- WEIGHT: 0.2 grams
- See package dimensions on last page

ELECTRICAL CHARACTERISTICS*

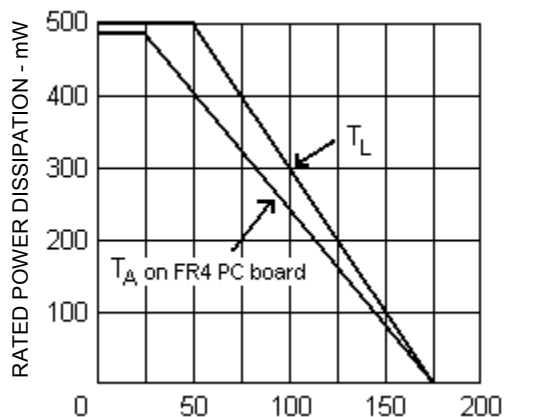
TYPE NUMBER (Note 1)	REGULATOR VOLTAGE	TEST CURRENT	DYNAMIC IMPEDANCE	REVERSE CURRENT	I _R TEST VOLTAGE	MAXIMUM REGULATOR CURRENT	TEMPERATURE COEFFICIENT
	(V _Z) Volts	(I _Z) Amps	(Z _Z) Ohms	I _R μA	(V _R) Volts	(I _{ZM}) mA	(α _{VZ}) mV/°C
1N5728B	4.7	10	70	3.0	2	70	-1.0
1N5729B	5.1	10	50	3.0	2	65	-0.2
1N5730B	5.6	10	25	3.0	2	60	+1.2
1N5731B	6.2	10	10	3.0	4	55	+2.3
1N5732B	6.8	10	10	3.0	4	50	+3.0
1N5733B	7.5	10	10	2.0	5	45	+4.0
1N5734B	8.2	10	15	1.0	5	40	+5.0
1N5735B	9.1	10	15	0.5	6	40	+6.0
1N5736B	10	10	20	0.2	7	35	+7.0
1N5737B	11	5	20	0.1	8	30	+8.0
1N5738B	12	5	25	0.1	8	30	+9.0
1N5739B	13	5	30	0.1	9	25	+10.5
1N5740B	15	5	30	0.1	10	25	+12.9
1N5741B	16	5	40	0.1	11	20	+13
1N5742B	18	5	45	0.1	12	20	+15
1N5743B	20	5	55	0.1	14	15	+17
1N5744B	22	5	55	0.1	15	15	+19
1N5745B	24	5	70	0.1	17	15	+21
1N5746B	27	2	80	0.1	19	10	+23.5
1N5747B	30	2	80	0.1	21	10	+26
1N5748B	33	2	90	0.1	23	10	+29
1N5749B	36	2	90	0.1	25	10	+31
1N5750B	39	2	130	0.1	27	9	+34
1N5751B	43	2	150	0.1	30	9	+37
1N5752B	47	2	170	0.1	33	8	+40
1N5753B	51	2	180	0.1	36	7	+44
1N5754B	56	2	200	0.1	39	6	+47
1N5755B	62	2	215	0.1	43	6	+51
1N5756B	68	2	240	0.1	48	5	+56
1N5757B	75	2	255	0.1	53	5	+60

*JEDEC Registered Data. The Type Number indicates 5% Tolerance. (See Note 1.)

NOTES:

1. Devices listed have a +/-5% voltage tolerance on nominal V_Z with a B suffix. An A suffix is +/-10% and no suffix is +/-20%. Suffix C denotes a +/-2% tolerance and suffix D denotes a +/-1% tolerance.
2. All static parameters measured under pulsed conditions, t_p = 300 μs.
3. Dynamic Impedance is derived by measuring the ac voltage when superimposing an ac rms current of 0.2 mA at 1000 Hz on to the dc level of I_{ZT}.

GRAPHS



T_L – LEAD TEMPERATURE ($^{\circ}\text{C}$) 3/8" FROM BODY or
 T_A on FR4 PC BOARD

FIGURE 1
POWER DERATING CURVE

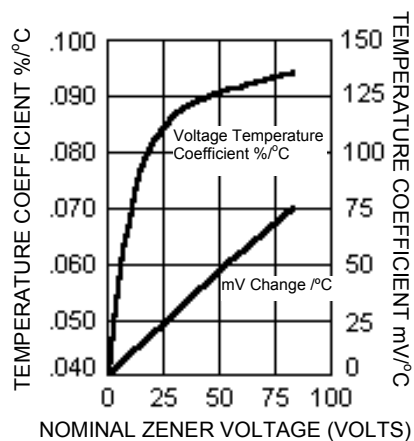


FIGURE 2
ZENER VOLTAGE TEMPERATURE
COEFFICIENT vs. ZENER VOLTAGE

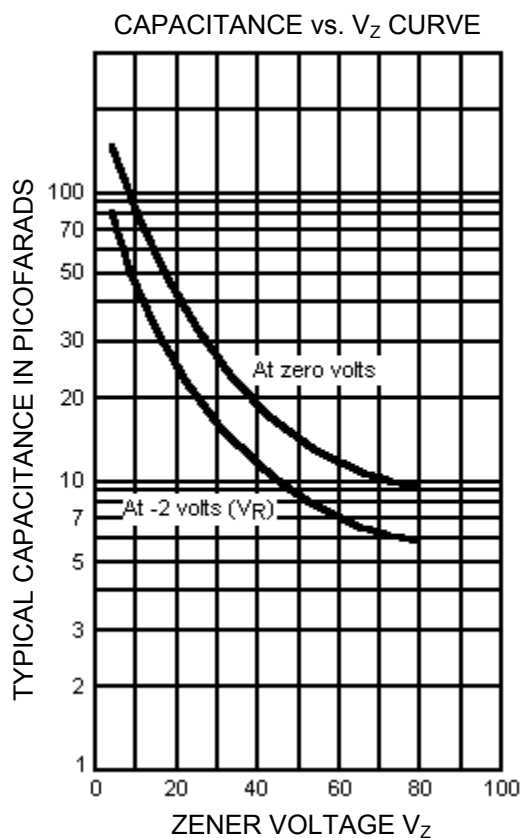
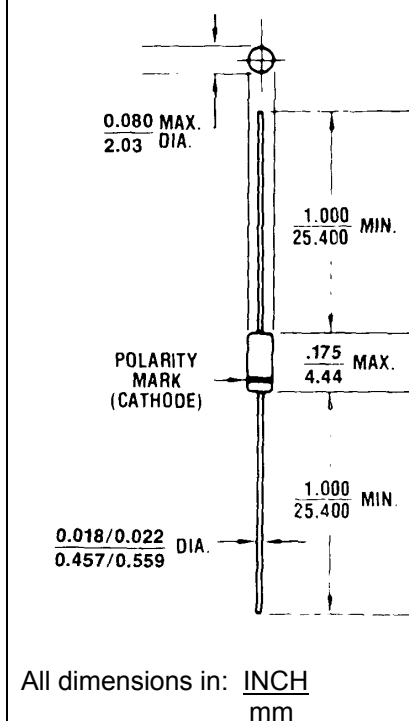


FIGURE 3

PACKAGE DIMENSIONS



All dimensions in: INCH
mm

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

1N5748B	1N5733C	1N5731B	1N5735D	1N5751C	1N5744B	1N5728B	1N5754D	1N5750C	1N5730D	1N5745C
1N5743C	1N5747B	1N5746C	1N5739D	1N5729C	1N5746D	1N5752C	1N5740D	1N5741B	1N5729B	1N5731C
1N5755C	1N5739C	1N5728D	1N5748C	1N5730B	1N5737C	1N5734B	1N5732D	1N5740C	1N5734D	1N5750B
1N5742D	1N5732C	1N5736D	1N5738C	1N5737B	1N5744D	1N5757D	1N5733B	1N5739B	1N5751D	1N5752B
1N5742B	1N5745D	1N5755D	1N5737D	1N5745B	1N5749D	1N5754B	1N5754C	1N5732B	1N5756C	1N5740B
1N5728C	1N5747D	1N5734C	1N5757B	1N5735C	1N5738D	1N5741D	1N5730C	1N5750D	1N5742C	1N5757C
1N5735B	1N5752D	1N5731D	1N5738B	1N5748D	1N5753C	1N5749B	1N5753D	1N5756B	1N5733D	1N5755B
1N5729D	1N5749C	1N5744C	1N5743D	1N5743B	1N5747C	1N5746B	1N5736B	1N5751B	1N5736C	
1N5736C/TR	1N5731D/TR	1N5742C/TR	1N5734B/TR	1N5729B/TR	1N5729B-1/TR	1N5746B/TR	1N5729B-1			