

1 Watt DO-41 Hermetically Sealed Glass Zener Voltage Regulators

Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Value	Units
Storage Temperature Range	-65 to +200	$^\circ\text{C}$
Maximum Junction Operating Temperature	+200	$^\circ\text{C}$
Total Device Dissipation	1.0	Watt
Thermal Resistance Junction to Lead	53.5	$^\circ\text{C} / \text{W}$
Thermal Resistance Junction to Ambient	100	$^\circ\text{C} / \text{W}$

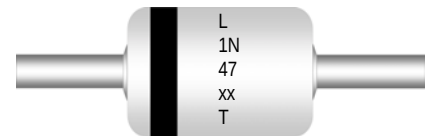
These ratings are limiting values above which the serviceability of the diode may be impaired.

Specification Features:

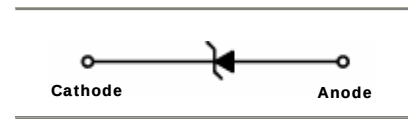
- Zener Voltage Range 3.3 to 56 Volts
- DO-41 Package (JEDEC)
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- RoHS Compliant
- Solder Hot Dip Tin (Sn) Terminal Finish
- Cathode Indicated By Polarity Band



DEVICE MARKING DIAGRAM



L : Logo
Device Code : TC1N47xxT
VZ Tolerance (T) : A = $\pm 5\%$
C = $\pm 2\%$



ELECTRICAL SYMBOL

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
TC1N4728A	3.3	76	10	1	400	100	1
TC1N4729A	3.6	69	10	1	400	100	1
TC1N4730A	3.9	64	9	1	400	50	1
TC1N4731A	4.3	58	9	1	400	10	1
TC1N4732A	4.7	53	8	1	500	10	1
TC1N4733A	5.1	49	7	1	550	10	1
TC1N4734A	5.6	45	5	1	600	10	2
TC1N4735A	6.2	41	2	1	700	10	3
TC1N4736A	6.8	37	3.5	1	700	10	4
TC1N4737A	7.5	34	4	0.5	700	10	5
TC1N4738A	8.2	31	4.5	0.5	700	10	6
TC1N4739A	9.1	28	5	0.5	700	10	7
TC1N4740A	10	25	7	0.25	700	10	7.6
TC1N4741A	11	23	8	0.25	700	5	8.4
TC1N4742A	12	21	9	0.25	700	5	9.1
TC1N4743A	13	19	10	0.25	700	5	9.9

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
TC1N4744A	15	17	14	0.25	700	5	11.4
TC1N4745A	16	15.5	16	0.25	700	5	12.2
TC1N4746A	18	14	20	0.25	700	5	13.7
TC1N4747A	20	12.5	22	0.25	750	5	15.2
TC1N4748A	22	11.5	23	0.25	750	5	16.7
TC1N4749A	24	10.5	25	0.25	750	5	18.2
TC1N4750A	27	9.5	35	0.25	750	5	20.6
TC1N4751A	30	8.5	40	0.25	1000	5	22.8
TC1N4752A	33	7.5	45	0.25	1000	5	25.1
TC1N4753A	36	7	50	0.25	1000	5	27.4
TC1N4754A	39	6.5	60	0.25	1000	5	29.7
TC1N4755A	43	6	70	0.25	1500	5	32.7
TC1N4756A	47	5.5	80	0.25	1500	5	35.8
TC1N4757A	51	5	95	0.25	1500	5	38.8
TC1N4758A	56	4.5	110	0.25	2000	5	42.6

V_F Forward Voltage = 1.2 V Maximum @ $I_F = 200$ mA for all types

Notes:

1. TOLERANCE AND TYPE NUMBER DESIGNATION (V_Z)

The type numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$. Device tolerance of $\pm 2\%$ is indicated by a "C" instead of an "A".

2. SPECIALS AVAILABLE INCLUDE

Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest VolarisTech representative.

3. ZENER VOLTAGE (V_Z) MEASUREMENT

The zener voltage (V_Z) is tested under pulse condition. The measured V_Z is guaranteed to be within specification with device junction in thermal equilibrium.

4. ZENER IMPEDANCE (Z_Z) DERIVATION

The zener impedance is derived from the 60 cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} .

Typical Characteristics

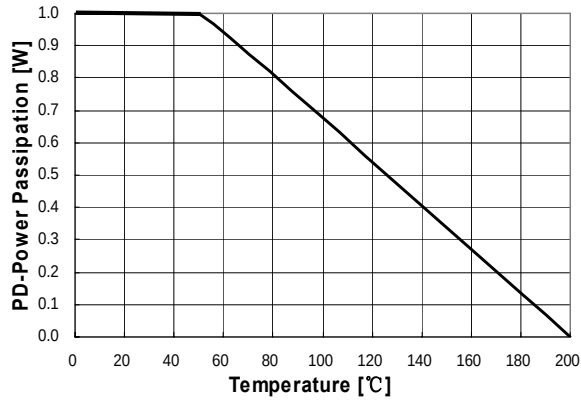


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

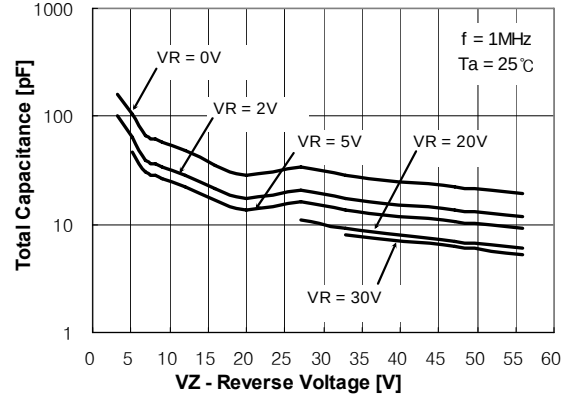


Figure 2. Total Capacitance

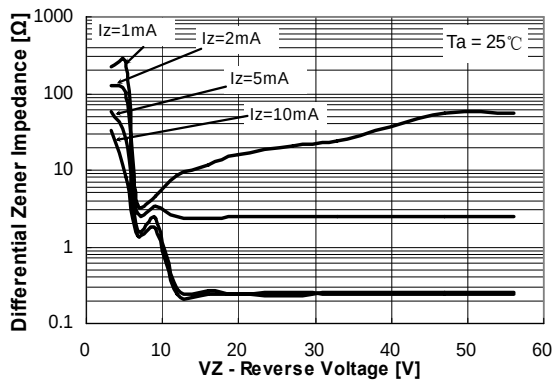


Figure 3. Differential Impedance vs. Zener Voltage

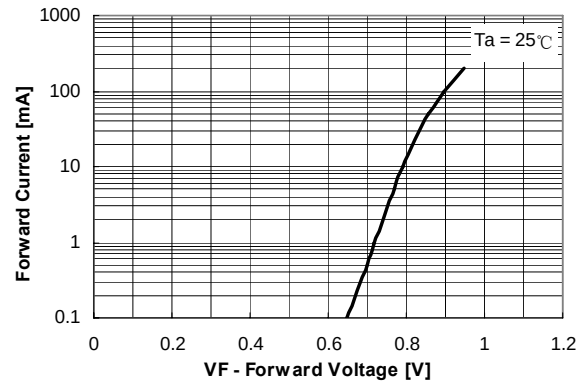


Figure 4. Forward Current vs. Forward Voltage

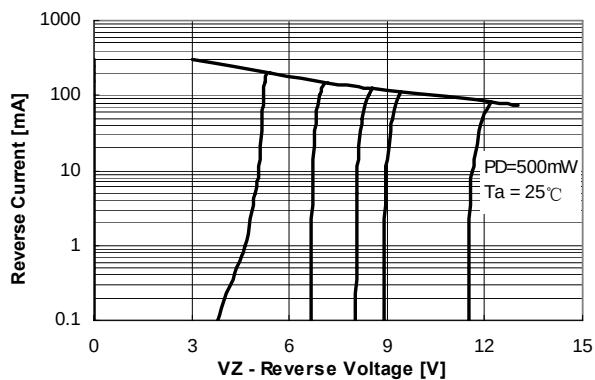


Figure 5. Reverse Current vs. Reverse Voltage

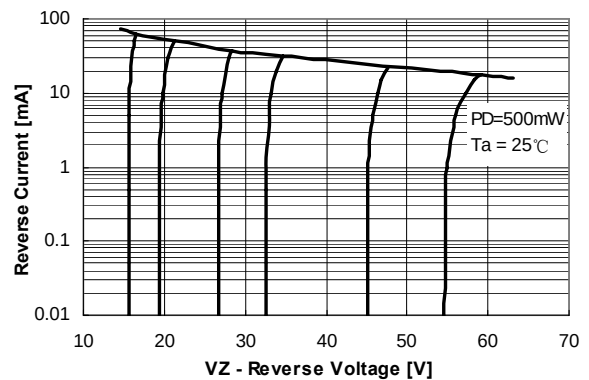
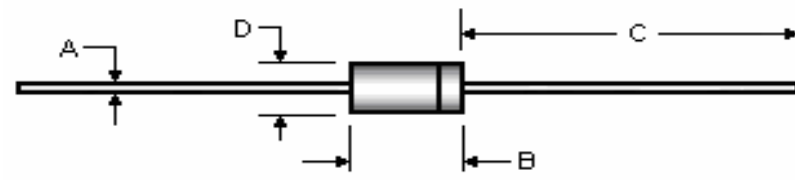


Figure 6. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline				
DO-41					
	DIM	D0-41			
		Millimeters		Inches	
		Min	Max	Min	Max
	A	0.72	0.86	0.028	0.034
	B	4.07	5.20	0.160	0.205
	C	25.40	---	1.000	---
	D	2.04	2.71	0.080	0.107

Notes:

1. All dimensions are within JEDEC standard.
2. DO41 polarity denoted by cathode band.