



SEMICONDUCTOR

## 1 Watt DO-41 Hermetically Sealed Glass Zener Voltage Regulators



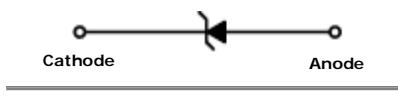
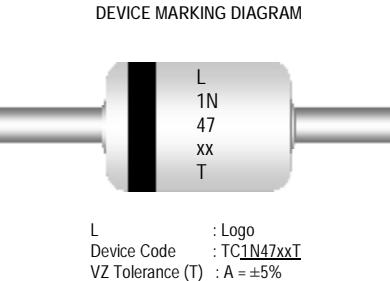
**Absolute Maximum Ratings**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Parameter	Value	Units
Storage Temperature Range	-65 to +175	°C
Maximum Junction Operating Temperature	+175	°C
Total Device Dissipation	1.0	Watt
Thermal Resistance Junction to Lead	53.5	°C / W
Thermal Resistance Junction to Ambient	100	°C / 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
- § 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



**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
TC1N4744A	15	17	14	0.25	700	5	11.4



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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
TC1N4759A	62	4.0	125	0.25	2000	5	47.1
TC1N4760A	68	3.7	150	0.25	2000	5	51.7
TC1N4761A	75	3.3	175	0.25	2000	5	56.0

 $V_F$  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**

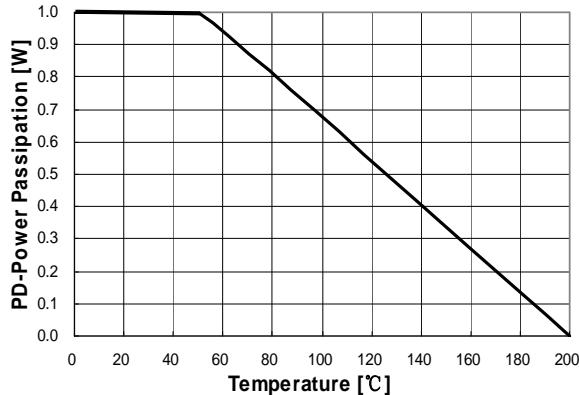
Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

**3. ZENER VOLTAGE ( $V_z$ ) MEASUREMENT**

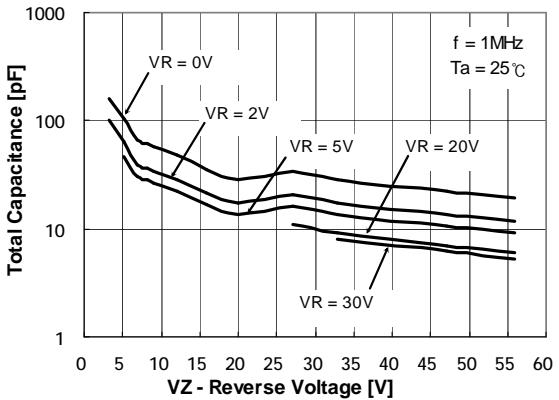
The zener voltage ( $V_z$ ) is tested under pulse condition.

**4. ZENER IMPEDANCE ( $Z_z$ ) DERIVATION**

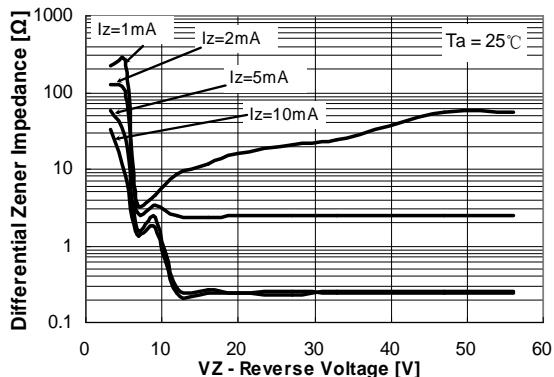
The zener impedance is derived from the 60 cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ .

**Typical Characteristics**


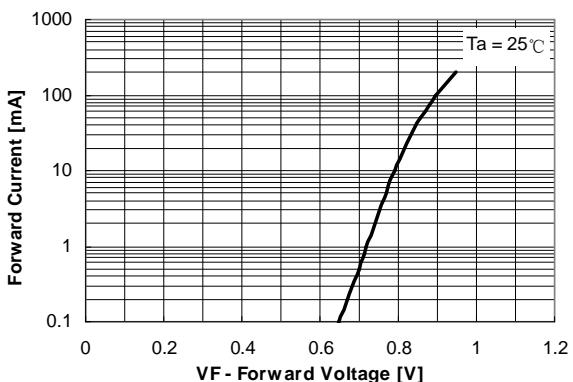
**Figure 1. Power Dissipation vs Ambient Temperature**  
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature



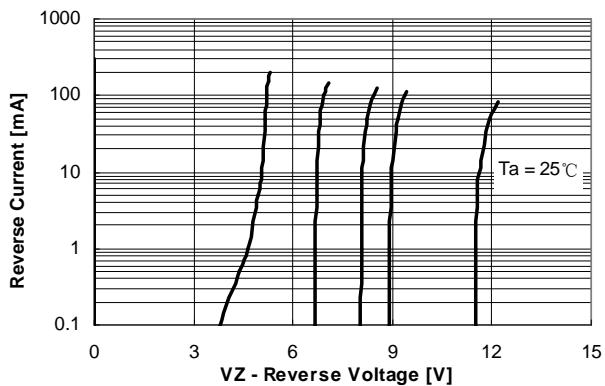
**Figure 2. Total Capacitance**



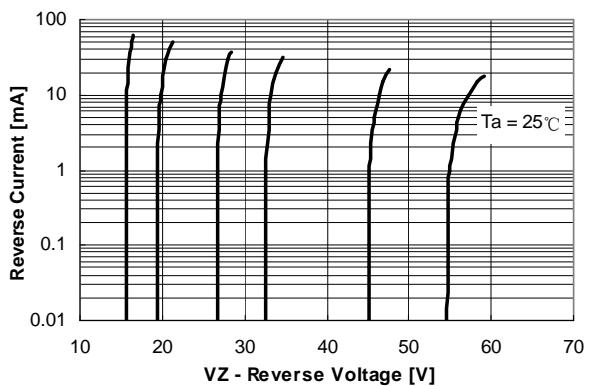
**Figure 3. Differential Impedance vs. Zener Voltage**



**Figure 4. Forward Current vs. Forward Voltage**

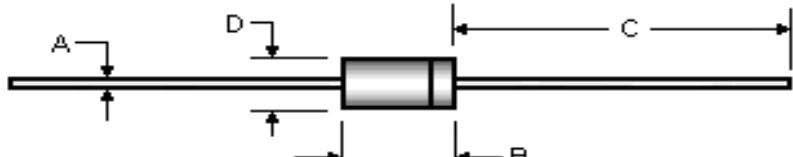


**Figure 5. Reverse Current vs. Reverse Voltage**



**Figure 6. Reverse Current vs. Reverse Voltage**

**Package Outline**

Package	Case Outline				
DO-41					
	<b>D0-41</b>				
	<b>DIM</b>	<b>Millimeters</b>		<b>Inches</b>	
		Min	Max	Min	Max
	A	0.68	0.81	0.027	0.032
	B	---	4.25	---	0.167
	C	25.40	---	1.000	---
	D	2.10	2.60	0.083	0.102

**Notes:**

1. DO41 polarity denoted by cathode band.

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[1N5221B](#) [1N5236B](#) [1N5241BTR](#) [1N5242BTR](#) [1N5350B](#) [1N5352B](#) [1N961BRR1](#) [1N964BRL](#) [RKZ5.1BKU#P6](#) [3SMAJ5946B-TP](#)  
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