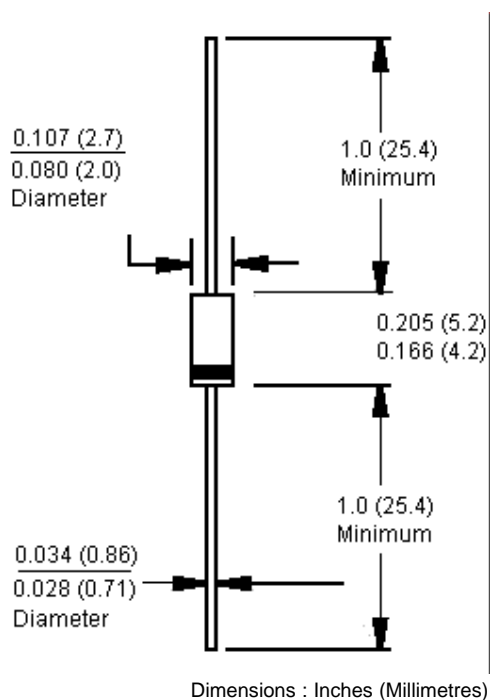




## Features:

- Low profile package.
- Built-in strain relief.
- Glass passivated junction.
- Low inductance.
- Typical  $I_R$  less than 5.0 $\mu$ A above 11V.
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Plastic package has underwriters laboratory flammability classification 94V-0

## DO-41



## Mechanical Data

Case	: Moulded plastic DO-41.
Lead	: Pure tin plated lead free, solderable per MIL-STD-202, Method 2025.
Polarity	: Color band denotes cathode end.
Mounting position	: Any.
Weight	: 0.012 ounces, 0.3 gram.

# 1N47- Series



## Maximum Ratings and Electrical Characteristics

Rating at 25°C Ambient Temperature Unless Otherwise Specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A = 50^\circ\text{C}$ , Derate above $50^\circ\text{C}$ (Note 1)	$P_D$	1.0 6.67	Watts mW/°C
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2)	$I_{FSM}$	10.0	Amps
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

- Notes : 1. Mounted on 5.0mm<sup>2</sup> (0.013mm thick) land areas.  
2. Measured on 8.3ms single half sine-wave or equivalent square wave,  
duty cycle = 4 pulses per minute maximum.

## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

$V_F = 1.2\text{V}$  maximum,  $I_F = 200\text{mA}$  for all types.

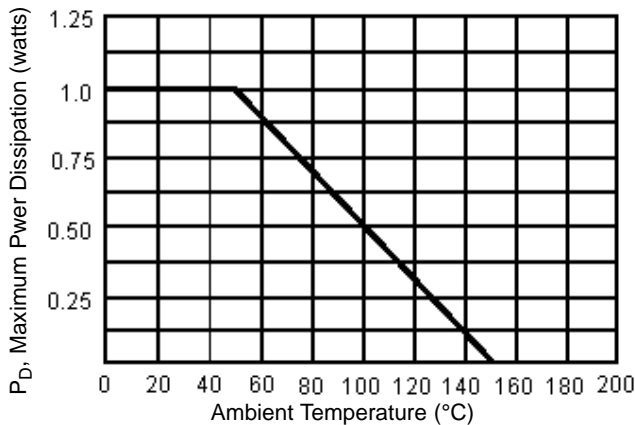
Power (Watt)	Zener Voltage $V_Z$ at $I_{ZT}$ Voltage			Test Current $I_{ZT}$ mA	Maximum Zener Impedance (Note 4)		Leakage Current		Surge Current at $T_A = 25^\circ\text{C}$ $I_r = \text{mA}$ (Note 5)	Part Number	
	Nom.	Minimum	Maximum		$Z_{ZT}$ at $I_{ZT}$ Ohms	$Z_{ZK}$ at $I_{ZK}$		$I_R @ V_R$			
	(Notes 2 & 3)					Ohms	mA	uA Maximum			Volts
1	12	11.40	12.60	21	9	700	0.25	5.0	9.1	380	1N4742A
	13	12.35	13.65	19	10				9.9	344	1N4743A
	15	14.25	15.75	17	14				11.4	3.4	1N4744A
	16	15.20	16.80	15.5	16				12.2	285	1N4745A
	18	17.10	18.90	14.0	20				13.7	250	1N4746A
	20	19.00	21.00	12.5	22				15.2	225	1N4747A
	22	20.90	23.10	11.5	23	750			16.7	205	1N4748A
	24	22.80	25.20	10.5	25				18.2	190	1N4749A
	27	25.65	28.35	9.5	35				20.6	170	1N4750A
	30	28.50	31.50	8.5	40	1000			22.8	150	1N4751A
	33	31.35	34.65	7.5	45				25.1	135	1N4752A
	36	34.20	37.80	7.0	50				27.4	125	1N4753A
	47	44.65	49.35	5.5	80	1500			35.8	95	1N4756A
	51	48.45	53.55	5.0	95				38.8	90	1N4757A
	56	53.20	58.80	4.5	110				42.6	80	1N4758A
	68	64.60	71.40	3.7	150	2000			51.7	65	1N4760A
	75	71.25	78.75	3.3	175				56.0	60	1N4761A
	100	95.00	105.0	2.5	350				76.0	45	1N4764A
						3000					



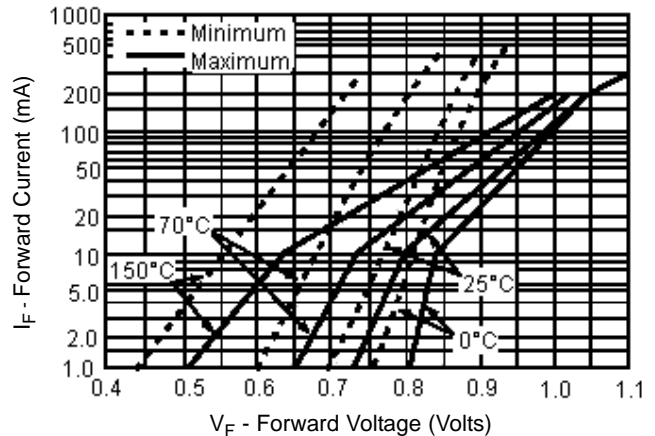
- Notes
- 1: Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
  - 2: Specials Available Include:
    - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
    - B. Matched sets.
  - 3: Zener Voltage (VZ) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (TL) at  $30\text{C} \pm 1\text{C}$ , from the diode body.
  - 4: Zener Impedance (ZZ) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an accurate having and rms value equal to 10% of the dc zener current (IZT or IZK) is superimposed on IZT or IZK.
  - 5: Surge Current (Ir) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, IZT, per JEDEC registration; however, actual device capability is as described.

## Ratings and Characteristics Curves ( 1N4742A thru 1N4753A, 1N4756A thru 1N4758A, 1N4760A, 1N4761A and 1N4764A

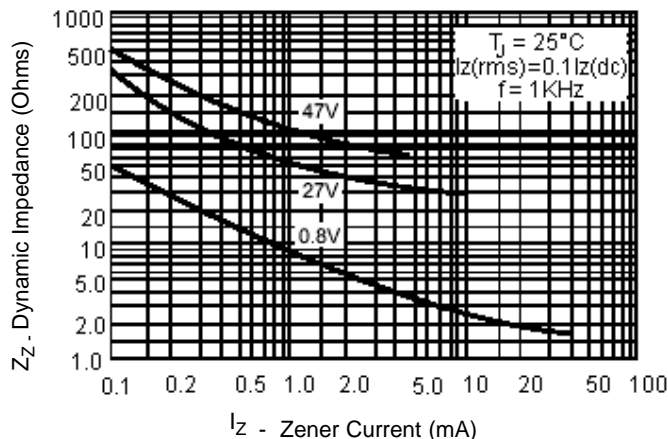
Power Temperature Derating Curve



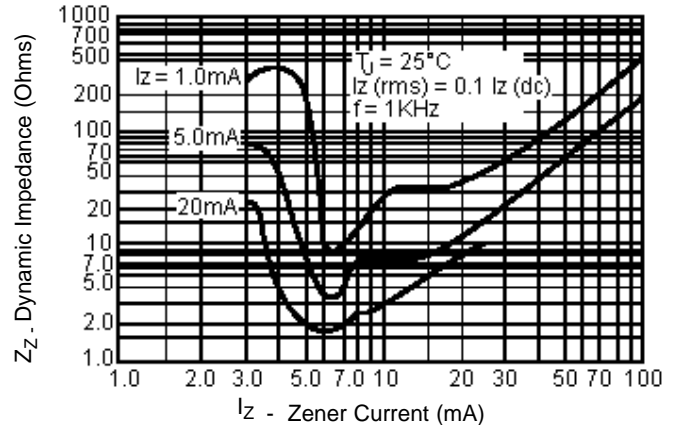
Typical Forward Characteristics



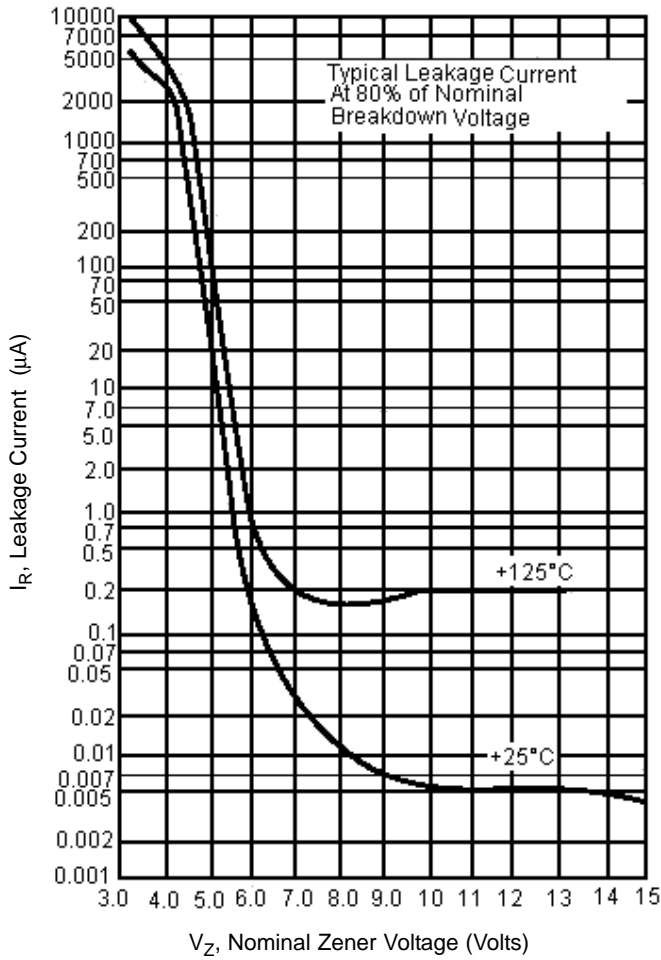
Effect of Zener Current on Zener Impedance



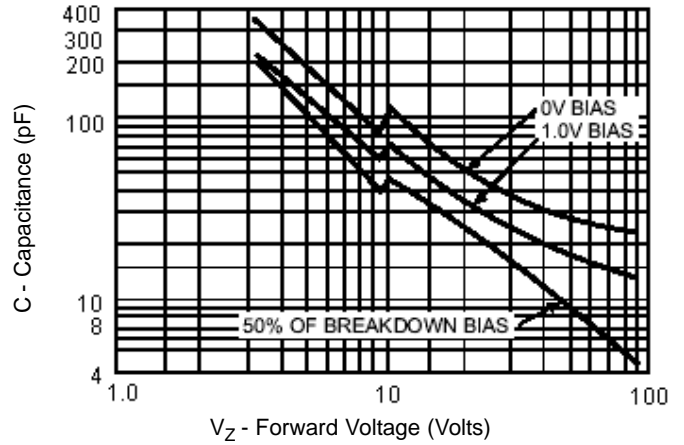
Effect of Zener Voltage on Zener Impedance



Typical Leakage Current

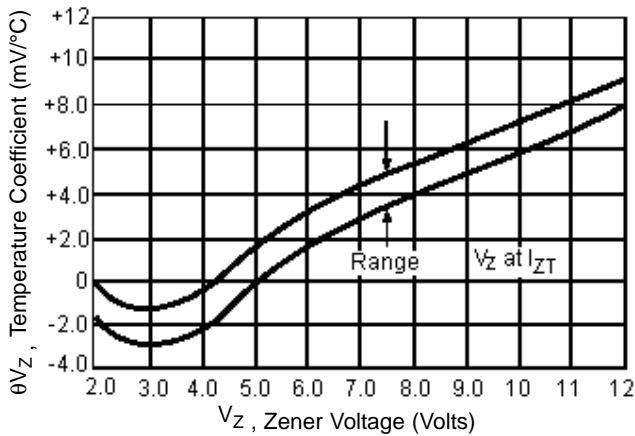


Typical Capacitance versus  $V_Z$



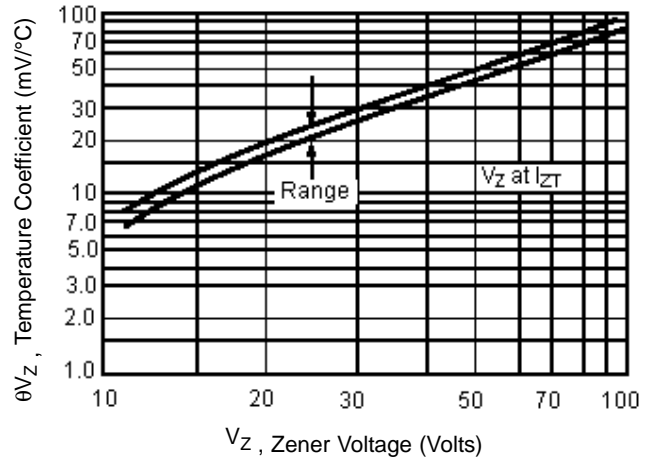
Temperature Coefficients

a - Range for Units to 12 Volts

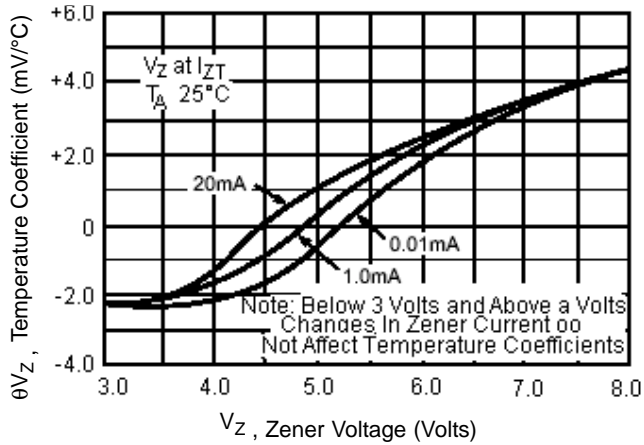


Temperature Coefficients

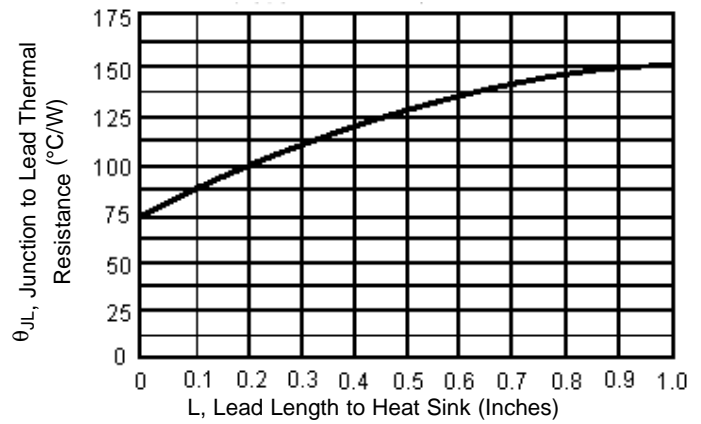
b - Range for Units to 12 to 100 Volts



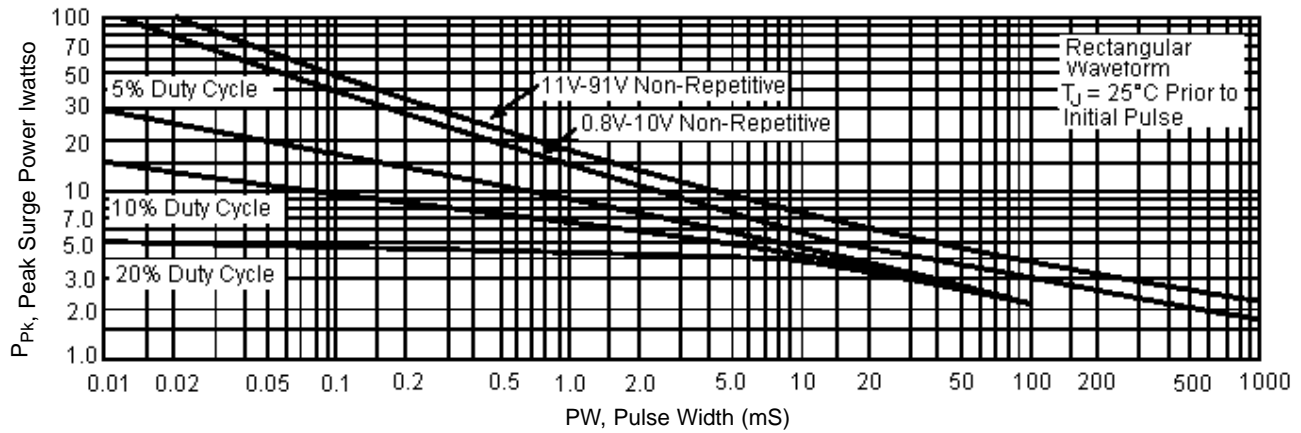
Effect of Zener Current



Typical Thermal Resistance versus Lead Length



Maximum Surge Power



## Notes:

## International Sales Offices:

 <b>AUSTRALIA - Farnell</b> Tel No: ++61 1300 361 005 Fax No: ++61 1300 361 225	 <b>FINLAND - Farnell</b> Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411	 <b>ITALY - Farnell</b> Tel No: ++ 39 02 93 995 200 Fax No: ++ 39 02 93 995 300	 <b>SPAIN - Farnell</b> Tel No: 901 20 20 80 Fax No: 901 20 20 90
 <b>AUSTRIA - Farnell</b> Tel No: ++ 43 662 2180 680 Fax No: ++ 43 662 2180 670	 <b>FRANCE - Farnell</b> Tel No: ++ 33 474 68 99 99 Fax No: ++ 33 474 68 99 90	 <b>MALAYSIA - Farnell-Newark</b> Tel No: ++ 60 3 7873 8000 Fax No: ++ 60 3 7873 7000	 <b>SWEDEN - Farnell</b> Tel No: ++ 46 8 730 50 00 Fax No: ++ 46 8 83 52 62
 <b>BELGIUM - Farnell</b> Tel No: ++ 32 3 475 2810 Fax No: ++ 32 3 227 3648	 <b>GERMANY - Farnell</b> Tel No: ++ 49 89 61 39 39 39 Fax No: ++ 49 89 613 59 01	 <b>NETHERLANDS - Farnell</b> Tel No: ++ 31 30 241 7373 Fax No: ++ 31 30 241 7333	 <b>SWITZERLAND - Farnell</b> Tel No: ++ 44 204 64 64 Fax No: ++ 44 204 64 54
 <b>BRAZIL - Farnell-Newark</b> Tel No: ++ 55 11 4066 9400 Fax No: ++ 55 11 4066 9410	 <b>HONG KONG - Farnell-Newark</b> Tel No: ++ 852 2268 9888 Fax No: ++ 852 2268 9899	 <b>NEW ZEALAND - Farnell</b> Tel No: 0800 90 80 80 Fax No: 0800 90 80 81	 <b>UK - Farnell</b> Tel No: ++ 44 8701 200 200 Fax No: ++ 44 8701 200 201
 <b>CHINA - Farnell-Newark</b> Tel No: ++86 10 6238 5152 Fax No: ++86 10 6238 5022	 <b>HUNGARY - Farnell</b> Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209	 <b>NORWAY - Farnell</b> Tel No: 800 146 70 Fax No: 800 146 76	 <b>UK - CPC</b> ++ 44 8701 202 530 ++ 44 8701 202 531
 <b>CZECH REPUBLIC - Farnell</b> Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209	 <b>INDIA - Farnell</b> Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209	 <b>PORTUGAL - Farnell</b> Tel No: ++ 34 93 475 8804 Fax No: ++ 34 93 474 5288	 <b>USA - Newark</b> Tel No: 800 463 9275
 <b>DENMARK - Farnell</b> Tel No: ++ 45 44 53 66 44 Fax No: ++ 45 44 53 66 06	 <b>IRELAND - Farnell</b> Tel No: ++ 353 1 830 9277 Fax No: ++ 353 1 830 9016	 <b>RUSSIA - Farnell</b> Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209	 <b>EXPORT - Farnell</b> Tel No: ++ 44 8701 200 208 Fax No: ++ 44 8701 200 209 <b>For enquiries from all other markets</b>
 <b>ESTONIA - Farnell</b> Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411	 <b>ISRAEL - Farnell</b> Tel No: ++ 180 937 0015 Fax No: ++ 180 937 0014	 <b>SINGAPORE - Farnell-Newark</b> Tel No: ++ 65 6788 0200 Fax No: ++ 65 6788 0300	<a href="http://www.farnell.com">http://www.farnell.com</a> <a href="http://www.newark.com">http://www.newark.com</a> <a href="http://www.cpc.co.uk">http://www.cpc.co.uk</a>

**Disclaimer** This data sheet and its contents (the "Information") belong to the Premier Farnell Group (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. SPC Multicomp is the registered trademark of the Group. © Premier Farnell plc 2008.