



# Zener diode

## Features

- 1. High reliability
- 2. Very sharp reverse characteristic
- 3. Low reverse current level
- 4.  $V_Z$ -tolerance  $\pm 5\%$

## Applications

Voltage stabilization



## Absolute Maximum Ratings

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$T_{amb} \leq 50^\circ\text{C}$		$P_V$	1	W
Z-current			$I_Z$	$P_V/V_Z$	mA
Junction temperature			$T_j$	200	$^\circ\text{C}$
Storage temperature range			$T_{stg}$	-65~+175	$^\circ\text{C}$

## Maximum Thermal Resistance

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$l=9.5\text{mm}(3/8") T_L=\text{constant}$	$R_{thJA}$	100	K/W

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

## Electrical Characteristics

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=200\text{mA}$		$V_F$			1.2	V



Type	$V_{Znom}^{1)}$	$I_{ZT}$ mA	for	$r_{zjT}$ $\Omega$	$r_{zjK}$ at	$I_{ZK}$ mA	$I_R$ at	$V_R$ V
	V							
1N4728A	3.3	76		<10	<400	1	<100	1
1N4729A	3.6	69		<10	<400	1	<100	1
1N4730A	3.9	64		<9	<400	1	<50	1
1N4731A	4.3	58		<9	<400	1	<10	1
1N4732A	4.7	53		<8	<500	1	<10	1
1N4733A	5.1	49		<7	<550	1	<10	1
1N4734A	5.6	45		<5	<600	1	<10	2
1N4735A	6.2	41		<2	<700	1	<10	3
1N4736A	6.8	37		<3.5	<700	1	<10	4
1N4737A	7.5	34		<4.0	<700	0.5	<10	5
1N4738A	8.2	31		<4.5	<700	0.5	<10	6
1N4739A	9.1	28		<5.0	<700	0.5	<10	7
1N4740A	10	25		<7	<700	0.25	<10	7.6
1N4741A	11	23		<8	<700	0.25	<5	8.4
1N4742A	12	21		<9	<700	0.25	<5	9.1
1N4743A	13	19		<10	<700	0.25	<5	9.9
1N4744A	15	17		<14	<700	0.25	<5	11.4
1N4745A	16	15.5		<16	<700	0.25	<5	12.2
1N4746A	18	14		<20	<750	0.25	<5	13.7
1N4747A	20	12.5		<22	<750	0.25	<5	15.2
1N4748A	22	11.5		<23	<750	0.25	<5	16.7
1N4749A	24	10.5		<25	<750	0.25	<5	18.2
1N4750A	27	9.5		<35	<750	0.25	<5	20.6
1N4751A	30	8.5		<40	<1000	0.25	<5	22.8
1N4752A	33	7.5		<45	<1000	0.25	<5	25.1
1N4753A	36	7.0		<50	<1000	0.25	<5	27.4
1N4754A	39	6.5		<60	<1000	0.25	<5	29.7
1N4755A	43	6.0		<70	<1500	0.25	<5	32.7
1N4756A	47	5.5		<80	<1500	0.25	<5	35.8
1N4757A	51	5.0		<95	<1500	0.25	<5	38.8
1N4758A	56	4.5		<110	<2000	0.25	<5	42.6
1N4759A	62	4.0		<125	<2000	0.25	<5	47.1
1N4760A	68	3.7		<150	<2000	0.25	<5	51.7
1N4761A	75	3.3		<175	<2000	0.25	<5	56
1N4762A	82	3.0		<200	<3000	0.25	<5	62.2
1N4763A	91	2.8		<250	<3000	0.25	<5	69.2
1N4764A	100	2.5		<350	<3000	0.25	<5	76

1) Based on DC-measurement at thermal equilibrium while maintaining the lead temperature( $T_L$ )at 30°C, 9.5mm(3/8") from the diode body.



Characteristics ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Parameter
$V_Z$	Reverse zener voltage @ $I_{ZT}$
$I_{ZT}$	Reverse current
$Z_{ZT}$	Maximum zener impedance @ $I_{ZT}$
$I_{ZK}$	Reverse current
$Z_{ZK}$	Maximum zener impedance @ $I_{ZK}$
$I_R$	Reverse leakage current @ $V_R$
$V_R$	Breakdown voltage
$I_F$	Forward current
$V_F$	Forward voltage @ $I_F$

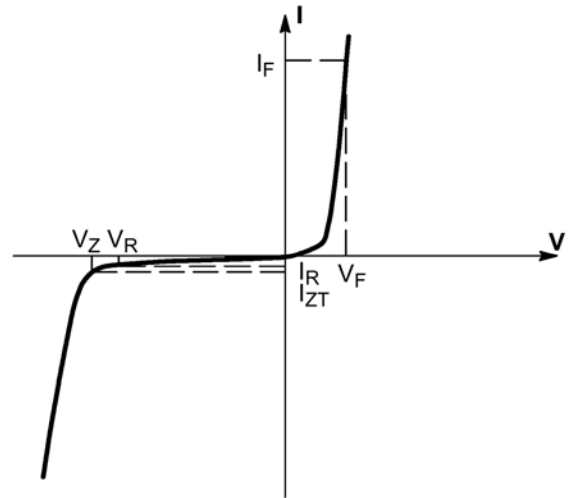


Figure 1. Zener voltage regulator

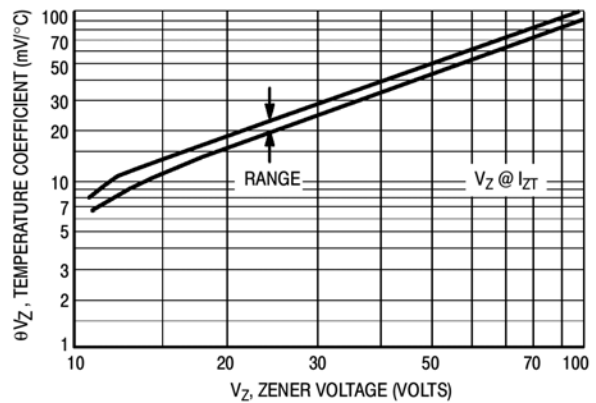
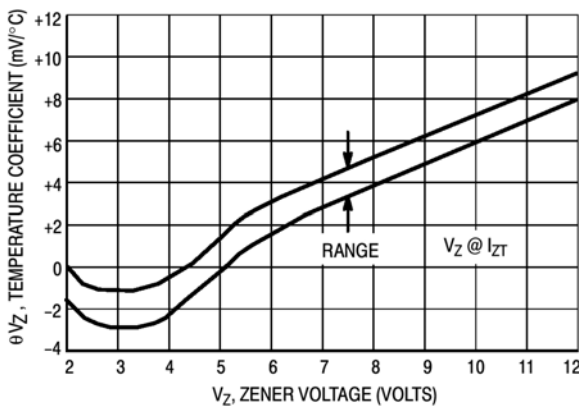


Figure 2. Temperature coefficients

( $-55^\circ\text{C}$  to  $+150^\circ\text{C}$  temperature range; 90% of the units are in the ranges indicated.)

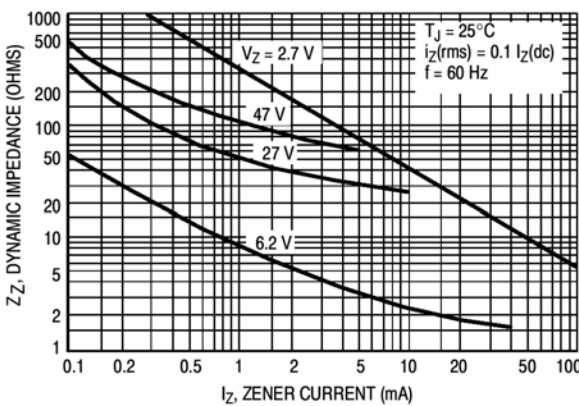


Figure 3. Effect of zener current on zener impedance

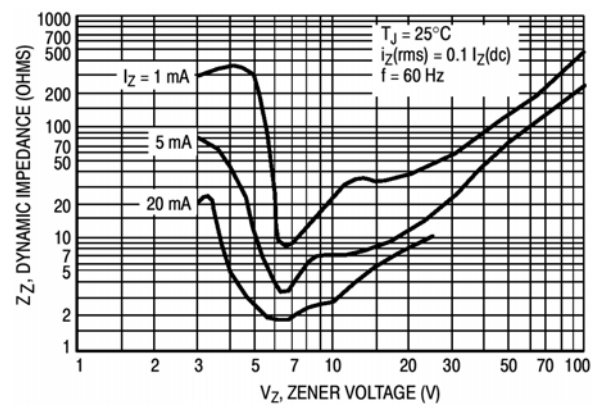
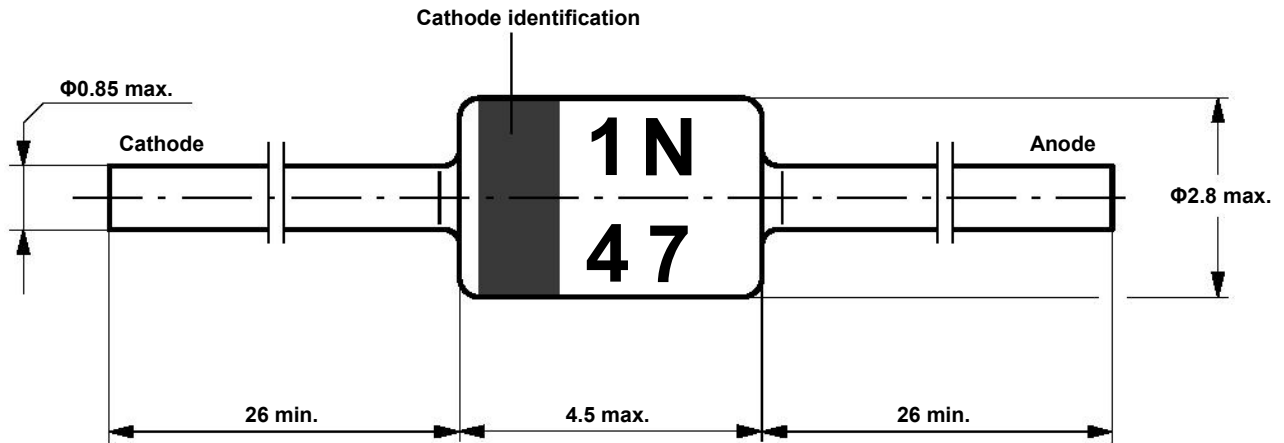


Figure 4. Effect of zener voltage on zener impedance



Dimensions in mm



Standard Glass Case  
JEDEC DO-41

Marking

