

## 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	$T_{\text{amb}} \leq 50^\circ\text{C}$		$P_V$	1	W
Z-current			$I_Z$	$P_V/V_Z$	mA
Junction temperature			$T_j$	200	$^\circ\text{C}$
Storage temperature range			$T_{\text{stg}}$	-65~+175	$^\circ\text{C}$

### Maximum Thermal Resistance

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

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

### Electrical Characteristics

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

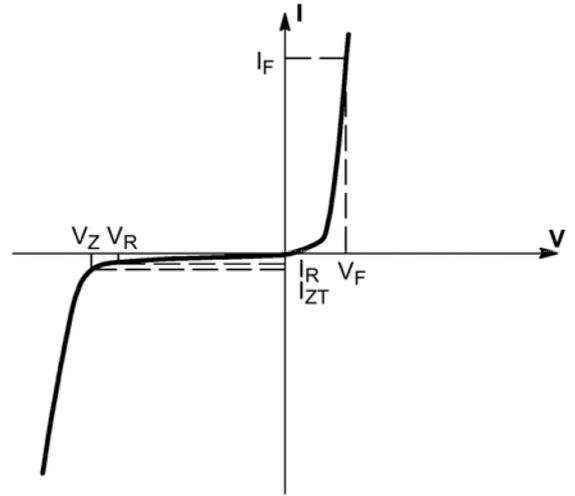
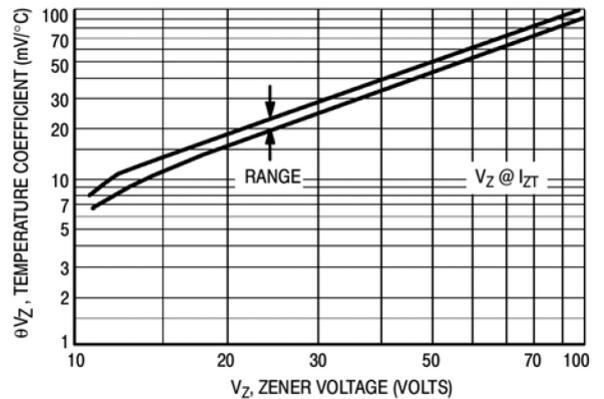
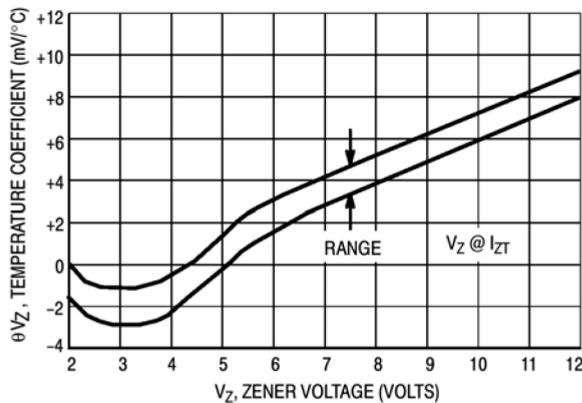
Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=200\text{mA}$		$V_F$			1.2	V

Type	V <sub>Znom</sub> <sup>1)</sup>	I <sub>ZT</sub> for	r <sub>ZT</sub>	r <sub>ZK</sub> at	I <sub>ZK</sub>	I <sub>R</sub> at	V <sub>R</sub>
	V	mA	Ω	Ω	mA	μ A	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

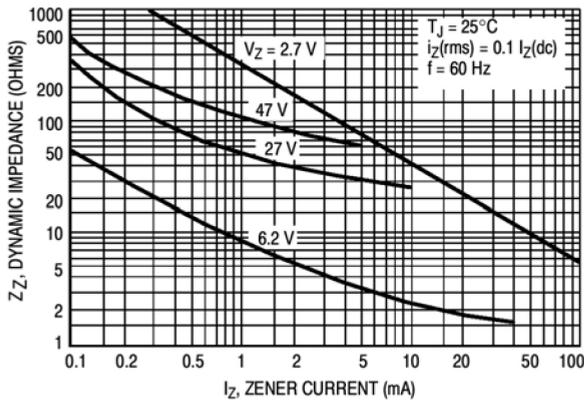
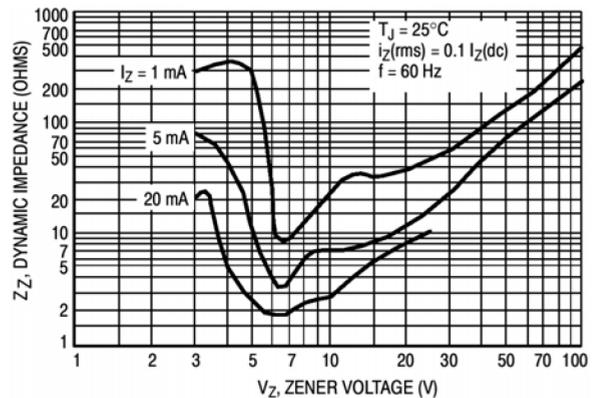
1) Based on DC-measurement at thermal equilibrium while maintaining the lead temperature(T<sub>L</sub>)at 30°C, 9.5mm(3/8") from the diode body.

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

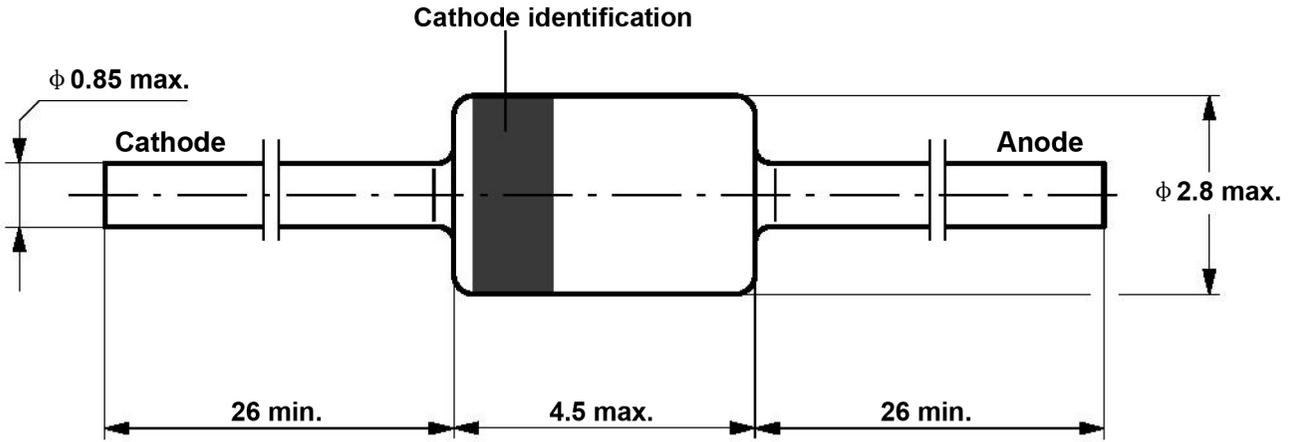
Symbol	Parameter
$V_Z$	Reverse zener voltage @ $I_{ZT}$
$I_{ZT}$	Reverse current
$Z_{ZT}$	Maximum zener impedance @ $I_{ZT}$
$I_{ZK}$	Reverse current
$Z_{ZK}$	Maximum zener impedance @ $I_{ZK}$
$I_R$	Reverse leakage current @ $V_R$
$V_R$	Breakdown voltage
$I_F$	Forward current
$V_F$	Forward voltage @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


**Figure 1. Zener voltage regulator**

**Figure 2. Temperature coefficients**

(-55°C to +150°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