

Zener diode

Features

1. Low leakage
2. Low zener impedance
3. High reliability

Applications

Voltage stabilization



Absolute Maximum Ratings

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

Parameter	Symbol	Value	Unit
Power dissipation	P_d	500	mW
Junction temperature	T_j	175	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-55~+175	$^{\circ}\text{C}$

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

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

Type	Grade	Zener Voltage			Dynamic Resistance		Reverse Current	
		V_z (V)		Test Condition	r_d (Ω)	Test Condition	I_R (μA)	Test Condition
		Min	Max	I_z (mA)	Max	I_z (mA)	Max	V_R (V)
2	A1	1.6	1.8	5	100	5	25	0.5
	A2	1.7	1.9					
	A3	1.8	2.0					
	B1	1.9	2.1	5	100	5	5	0.5
	B2	2.0	2.2					
	B3	2.1	2.3					
	C1	2.2	2.4					
	C2	2.3	2.5					
	C3	2.4	2.6					

Type	Grade	Zener Voltage			Dynamic Resistance		Reverse Current	
		V _Z (V)		Test Condition	r _d (Ω)	Test Condition	I _R (μA)	Test Condition
		Min	Max	I _Z (mA)	Max	I _Z (mA)	Max	V _R (V)
3	A1	2.5	2.7	5	100	5	5	0.5
	A2	2.6	2.8					
	A3	2.7	2.9					
	B1	2.8	3.0					
	B2	2.9	3.1					
	B3	3.0	3.2					
	C1	3.1	3.3					
	C2	3.2	3.4					
	C3	3.3	3.5					
4	A1	3.4	3.6	5	100	5	5	1.0
	A2	3.5	3.7					
	A3	3.6	3.8					
	B1	3.7	3.9					
	B2	3.8	4.0					
	B3	3.9	4.1					
	C1	4.0	4.2					
	C2	4.1	4.3					
	C3	4.2	4.4					
5	A1	4.3	4.5	5	100	5	5	1.5
	A2	4.4	4.6					
	A3	4.5	4.7					
	B1	4.6	4.8					
	B2	4.7	4.9					
	B3	4.8	5.0					
	C1	4.9	5.1					
	C2	5.0	5.2					
	C3	5.1	5.3					
6	A1	5.2	5.5	5	40	5	5	2.0
	A2	5.3	5.6					
	A3	5.4	5.7					
	B1	5.5	5.8					
	B2	5.6	5.9					
	B3	5.7	6.0					
	C1	5.8	6.1					
	C2	6.0	6.3					
	C3	6.1	6.4					
7	A1	6.3	6.6	5	15	5	1	3.5
	A2	6.4	6.7					
	A3	6.6	6.9					
	B1	6.7	7.0					
	B2	6.9	7.2					
	B3	7.0	7.3					
	C1	7.2	7.6					
	C2	7.3	7.7					
	C3	7.5	7.9					

Type	Grade	Zener Voltage		Test Condition	Dynamic Resistance		Reverse Current	
		V _Z (V)			r _d (Ω)	Test Condition	I _R (μA)	Test Condition
		Min	Max	I _Z (mA)	Max	I _Z (mA)	Max	V _R (V)
9	A1	7.7	8.1	5	20	5	1	5.0
	A2	7.9	8.3					
	A3	8.1	8.5					
	B1	8.3	8.7					
	B2	8.5	8.9					
	B3	8.7	9.1					
	C1	8.9	9.3					
	C2	9.1	9.5					
	C3	9.3	9.7					
11	A1	9.5	9.9	5	25	5	1	7.5
	A2	9.7	10.1					
	A3	9.9	10.3					
	B1	10.2	10.6					
	B2	10.4	10.8					
	B3	10.7	11.1					
	C1	10.9	11.3					
	C2	11.1	11.6					
	C3	11.4	11.9					
12	A1	11.6	12.1	5	35	5	1	9.5
	A2	11.9	12.4					
	A3	12.2	12.7					
	B1	12.4	12.9					
	B2	12.6	13.1					
	B3	12.9	13.4					
	C1	13.2	13.7					
	C2	13.5	14.0					
	C3	13.8	14.3					
15	1	14.1	14.7	5	40	5	1	11.0
	2	14.5	15.1					
	3	14.9	15.5					
16	1	15.3	15.9	5	45	5	1	12.0
	2	15.7	16.5					
	3	16.3	17.1					
18	1	16.9	17.7	5	55	5	1	13.0
	2	17.5	18.3					
	3	18.1	19.0					
20	1	18.8	19.7	2	60	2	1	15.0
	2	19.5	20.4					
	3	20.2	21.1					
22	1	20.9	21.9	2	65	2	1	17.0
	2	21.6	22.6					
	3	22.3	23.3					
24	1	22.9	24.0	2	70	2	1	19.0
	2	23.6	24.7					
	3	24.3	25.5					

Type	Grade	Zener Voltage			Dynamic Resistance		Reverse Current	
		V _Z (V)		Test Condition	r _d (Ω)	Test Condition	I _R (μA)	Test Condition
		Min	Max	I _Z (mA)	Max	I _Z (mA)	Max	V _R (V)
27	1	25.2	26.6	2	80	2	1	21.0
	2	26.2	27.6					
	3	27.2	28.6					
30	1	28.2	29.6	2	100	2	1	23.0
	2	29.2	30.6					
	3	30.2	31.6					
33	1	31.2	32.6	2	120	2	1	25.0
	2	32.2	33.6					
	3	33.2	34.6					
36	1	34.2	35.7	2	140	2	1	27.0
	2	35.3	36.8					
	3	36.4	38.0					

Note: 1. Tested with DC.

2. Type No. is as follows: 2A1, 2A2, 36-3.

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

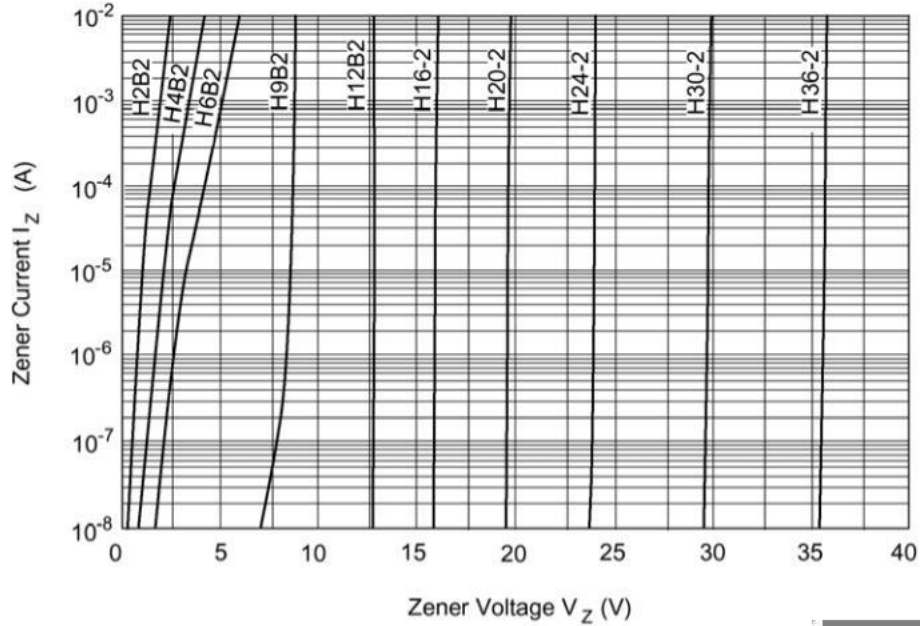


Figure 1. Zener current vs. zener voltage

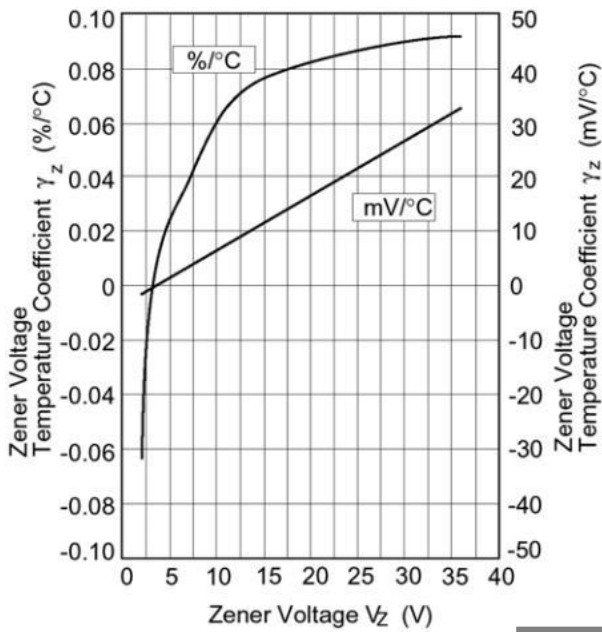


Figure 2. Temperature coefficient vs. zener voltage

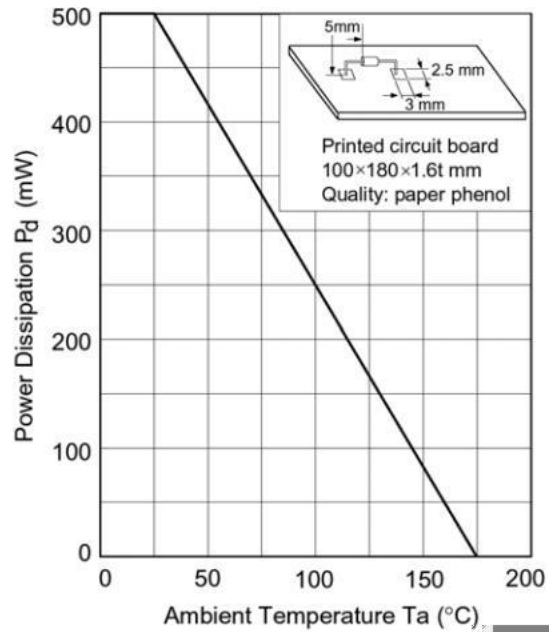
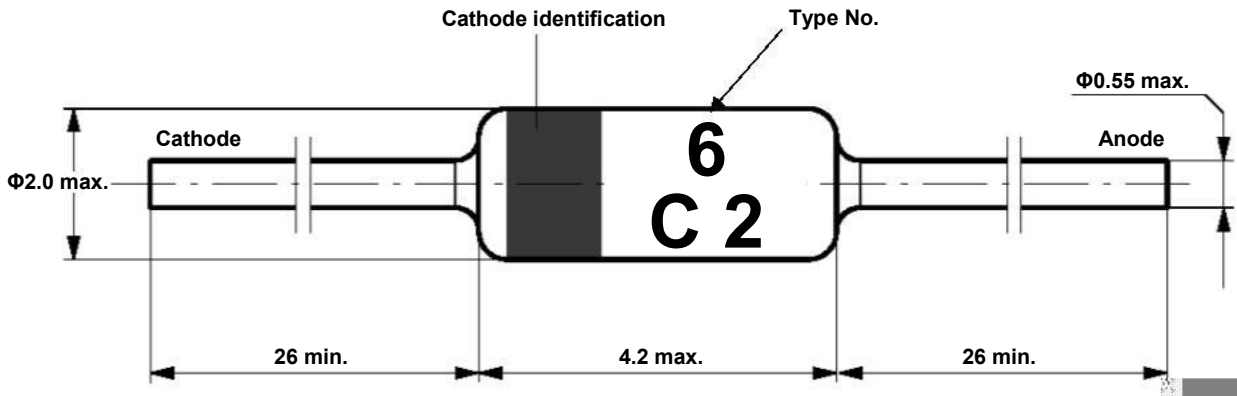


Figure 3. Power Dissipation vs. ambient temperature

Dimensions in mm



Standard Glass Case
JEDEC DO-35

Marking

