

Zener diode

Features

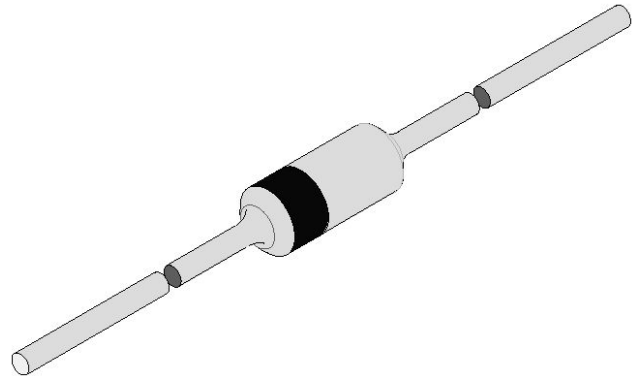
High reliability

Applications

Voltage stabilization

Construction

Silicon epitaxial planar



Absolute Maximum Ratings

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

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$I=4\text{mm } T_L \leq 25^{\circ}\text{C}$		P_V	500	mW
Z-current			I_Z	P_V/V_Z	mA
Junction temperature			T_j	175	$^{\circ}\text{C}$
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	$I=4\text{mm } T_L=\text{constant}$	R_{thJA}	350	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			1.5	V

Type	V _{Znom}	I _{ZT}	for V _{ZT} and	r _{zjT}	r _{zjk} at	I _{ZK}	I _R and	I _R at	V _R	TK _{VZ}
BZX55B	V	mA	V ¹⁾	Ω	Ω	mA	μ A	μ A ²⁾	V	%/K
2V4	2.4	5	2.35~2.44	<85	<600	1	<50	<100	1	-0.09~-0.06
2V7	2.7	5	2.6~2.8	<85	<600	1	<10	<50	1	-0.09~-0.06
3V0	3	5	2.9~3.1	<85	<600	1	<4	<40	1	-0.08~-0.05
3V3	3.3	5	3.2~3.4	<85	<600	1	<2	<40	1	-0.08~-0.05
3V6	3.6	5	3.5~3.7	<85	<600	1	<2	<40	1	-0.08~-0.05
3V9	3.9	5	3.8~4.0	<85	<600	1	<2	<40	1	-0.08~-0.05
4V3	4.3	5	4.2~4.4	<75	<600	1	<1	<20	1	-0.06~-0.03
4V7	4.7	5	4.6~4.8	<60	<600	1	<0.5	<10	1	-0.05~+0.02
5V1	5.1	5	5.0~5.2	<35	<550	1	<0.1	<2	1	-0.02~+0.02
5V6	5.6	5	5.5~5.7	<25	<450	1	<0.1	<2	1	-0.05~+0.05
6V2	6.2	5	6.1~6.3	<10	<200	1	<0.1	<2	2	0.03~0.06
6V8	6.8	5	6.7~6.9	<8	<150	1	<0.1	<2	3	0.03~0.07
7V5	7.5	5	7.4~7.7	<7	<50	1	<0.1	<2	5	0.03~0.07
8V2	8.2	5	8.0~8.4	<7	<50	1	<0.1	<2	6.2	0.03~0.08
9V1	9.1	5	8.9~9.3	<10	<50	1	<0.1	<2	6.8	0.03~0.09
10	10	5	9.8~10.2	<15	<70	1	<0.1	<2	7.5	0.03~0.1
11	11	5	10.8~11.2	<20	<70	1	<0.1	<2	8.2	0.03~0.11
12	12	5	11.8~12.2	<20	<90	1	<0.1	<2	9.1	0.03~0.11
13	13	5	12.7~13.3	<26	<110	1	<0.1	<2	10	0.03~0.11
15	15	5	14.7~15.3	<30	<110	1	<0.1	<2	11	0.03~0.11
16	16	5	15.7~16.3	<40	<170	1	<0.1	<2	12	0.03~0.11
18	18	5	17.6~18.4	<50	<170	1	<0.1	<2	13	0.03~0.11
20	20	5	19.6~20.4	<55	<220	1	<0.1	<2	15	0.03~0.11
22	22	5	21.6~22.4	<55	<220	1	<0.1	<2	16	0.04~0.12
24	24	5	23.5~24.5	<80	<220	1	<0.1	<2	18	0.04~0.12
27	27	5	26.5~27.5	<80	<220	1	<0.1	<2	20	0.04~0.12
30	30	5	29.4~30.6	<80	<220	1	<0.1	<2	22	0.04~0.12
33	33	5	32.3~33.7	<80	<220	1	<0.1	<2	24	0.04~0.12
36	36	5	35.3~36.7	<80	<220	1	<0.1	<2	27	0.04~0.12

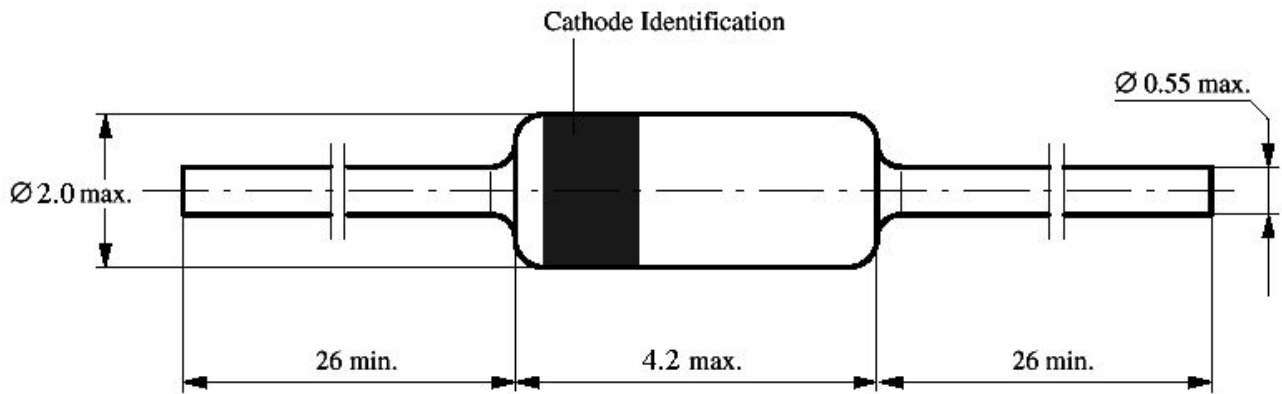
¹⁾ Tighter tolerances available request:

BZX55A... ±1% of V_{Znom}

BZX55B... ±2% of V_{Znom}

²⁾ at T_J=150°C

Dimensions in mm



Standard Glass Case
JEDEC DO 35

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

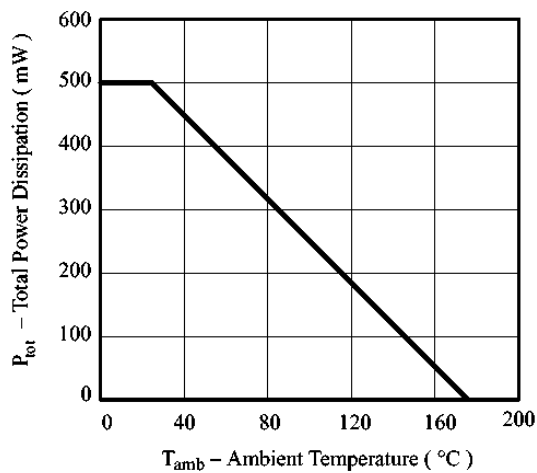


Figure 1. Total Power Dissipation vs. Ambient Temperature

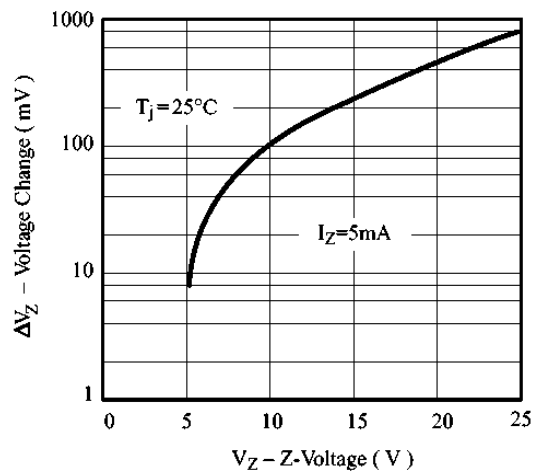


Figure 2. Typical Change of Working Voltage under Operating Conditions at $T_{amb}=25^\circ\text{C}$

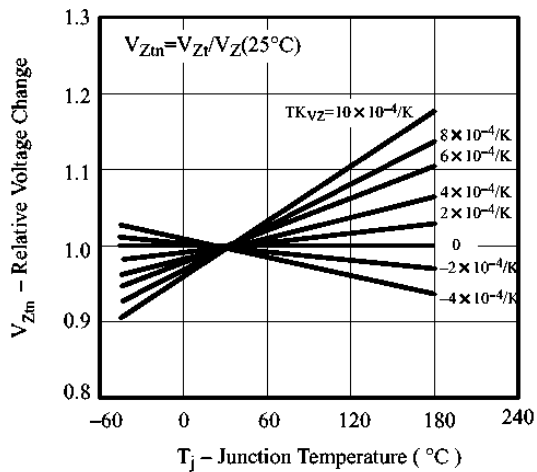


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

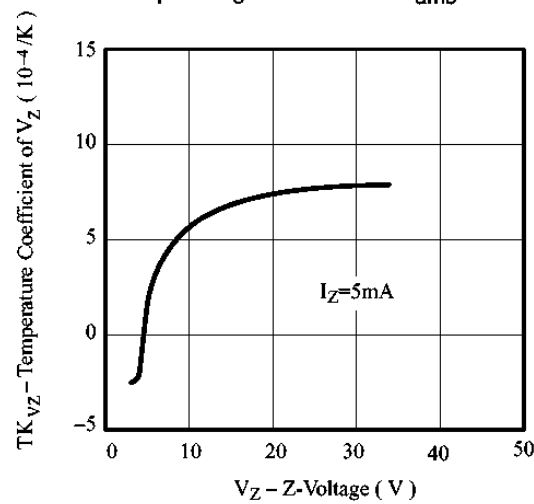


Figure 4. Temperature Coefficient of V_Z vs. Z-Voltage

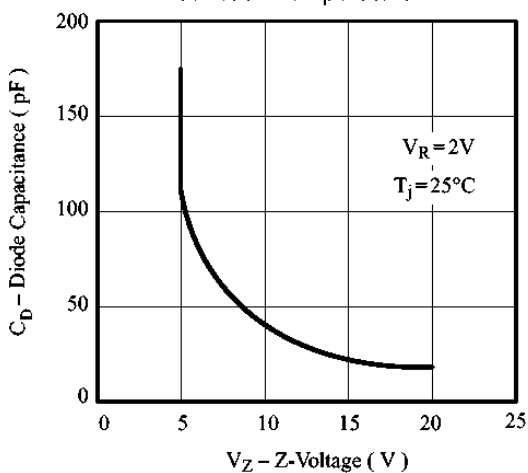


Figure 5. Diode Capacitance vs. Z-Voltage

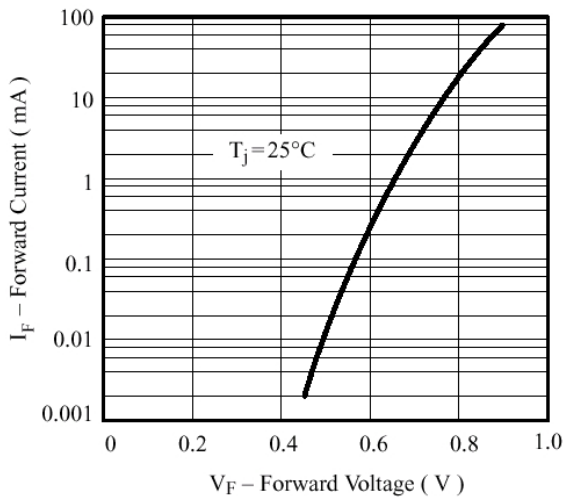


Figure 6. Forward Current vs. Forward Voltage

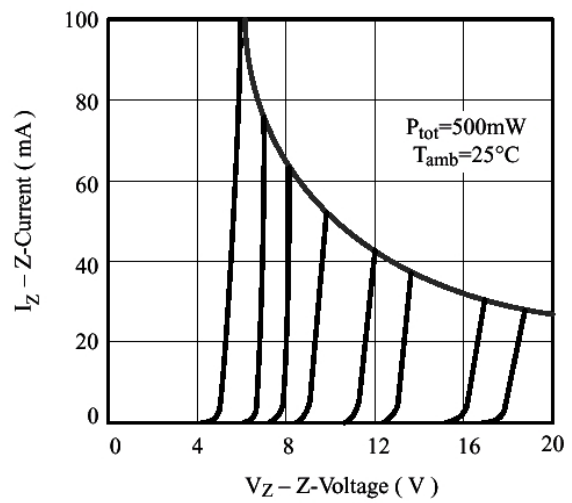


Figure 7. Z-Current vs. Z-Voltage

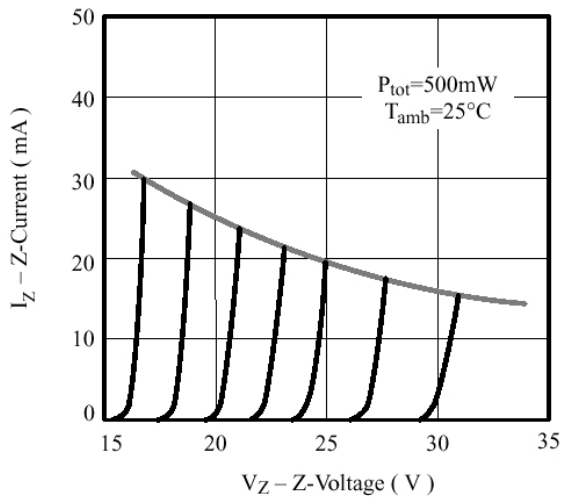


Figure 8. Z-Current vs. Z-Voltage

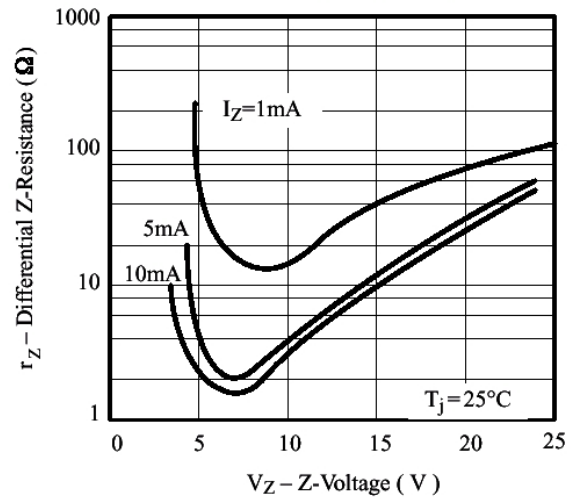


Figure 9. Differential Z-Resistance vs. Z-Voltage

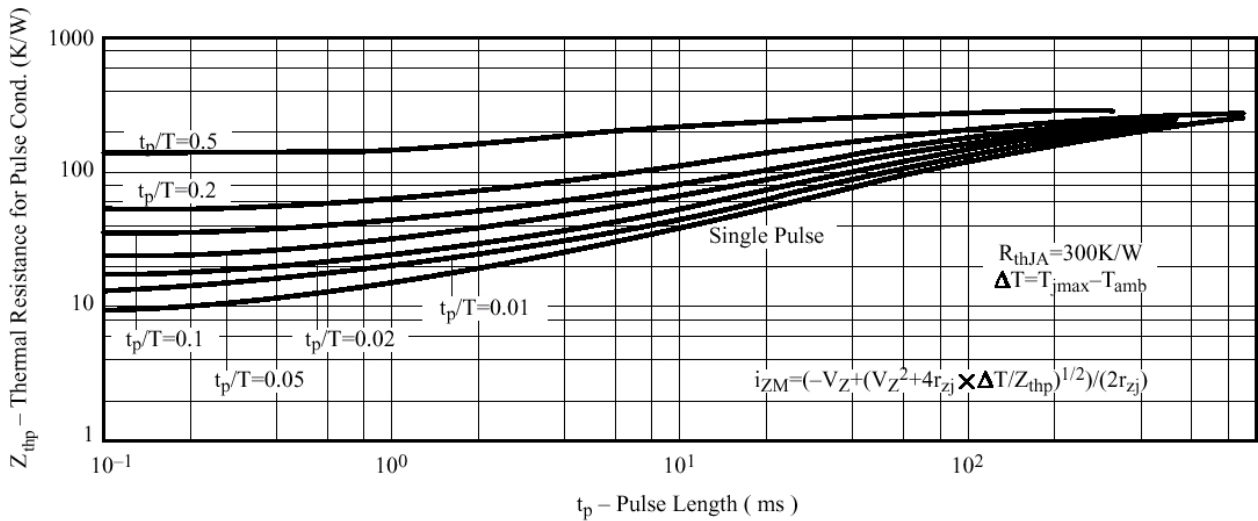


Figure 10. Thermal Response