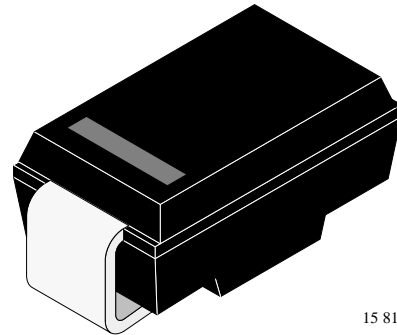


Silicon Z-Diodes

Features

- Glass passivated junction
- High reliability
- Voltage range 10V to 270V
- Fits onto 5 mm SMD footpads
- Wave and reflow solderable



15 811

Applications

Voltage stabilization

Order Instruction

Type	Ordering Code	Remarks
BZG03C10	BZG03C10-TR	Tape and Reel (1.500 pcs)
	BZG03C10-TR3	Tape and Reel (6.000 pcs)

Absolute Maximum Ratings

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

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$R_{thJA} < 25\text{K/W}$, $T_{amb} = 100^\circ\text{C}$		P_V	3	W
Power dissipation	$R_{thJA} < 100\text{K/W}$, $T_{amb} = 50^\circ\text{C}$		P_V	1.25	W
Non repetitive peak surge power dissipation	$t_p = 100\mu\text{s}$ sq.pulse, $T_j = 25^\circ\text{C}$ prior to surge		P_{ZSM}	600	W
Junction temperature			T_j	175	$^\circ\text{C}$
Storage temperature range			T_{stg}	-65...+150	$^\circ\text{C}$

Maximum Thermal Resistance

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

Parameter	Test Conditions	Symbol	Value	Unit
Junction lead		R_{thJL}	25	K/W
Junction ambient	mounted on epoxy-glass hard tissue, Fig. 1a	R_{thJA}	150	K/W
	mounted on epoxy-glass hard tissue, Fig. 1b	R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al_2O_3), Fig. 1b	R_{thJA}	100	K/W

Electrical Characteristics

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

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F = 0.5\text{A}$		V_F			1.2	V

Type	V_Z			r_{zj} and TK_{VZ} at I_Z				I_R at V_R		
	V	V	V	Ω	Ω	%/K	%/K	mA	μ A	V
BZG03C...	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.		Max.	
10	9.4	10	10.6	2	4	0.05	0.09	50	10	7.5
11	10.4	11	11.6	4	7	0.05	0.10	50	4	8.2
12	11.4	12	12.7	4	7	0.05	0.10	50	3	9.1
13	12.4	13	14.1	5	10	0.05	0.10	50	2	10
15	13.8	15	15.6	5	10	0.05	0.10	50	1	11
16	15.3	16	17.1	6	15	0.06	0.11	25	1	12
18	16.8	18	19.1	6	15	0.06	0.11	25	1	13
20	18.8	20	21.2	6	15	0.06	0.11	25	1	15
22	20.8	22	23.3	6	15	0.06	0.11	25	1	16
24	22.8	24	25.6	7	15	0.06	0.11	25	1	18
27	25.1	27	28.9	7	15	0.06	0.11	25	1	20
30	28	30	32	8	15	0.06	0.11	25	1	22
33	31	33	35	8	15	0.06	0.11	25	1	24
36	34	36	38	21	40	0.06	0.11	10	1	27
39	37	39	41	21	40	0.06	0.11	10	1	30
43	40	43	46	24	45	0.07	0.12	10	1	33
47	44	47	50	24	45	0.07	0.12	10	1	36
51	48	51	54	25	60	0.07	0.12	10	1	39
56	52	56	60	25	60	0.07	0.12	10	1	43
62	58	62	66	25	80	0.08	0.13	10	1	47
68	64	68	72	25	80	0.08	0.13	10	1	51
75	70	75	79	30	100	0.08	0.13	10	1	56
82	77	82	87	30	100	0.08	0.13	10	1	62
91	85	91	96	60	200	0.09	0.13	5	1	68
100	94	100	106	60	200	0.09	0.13	5	1	75
110	104	110	116	80	250	0.09	0.13	5	1	82
120	114	120	127	80	250	0.09	0.13	5	1	91
130	124	130	141	110	300	0.09	0.13	5	1	100
150	138	150	156	130	300	0.09	0.13	5	1	110
160	158	160	171	150	350	0.09	0.13	5	1	120
180	168	180	191	180	400	0.09	0.13	5	1	130
200	188	200	212	200	500	0.09	0.13	5	1	150
220	208	220	233	350	750	0.09	0.13	2	1	160
240	228	240	256	400	850	0.09	0.13	2	1	180
270	251	270	289	450	1000	0.09	0.13	2	1	200

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

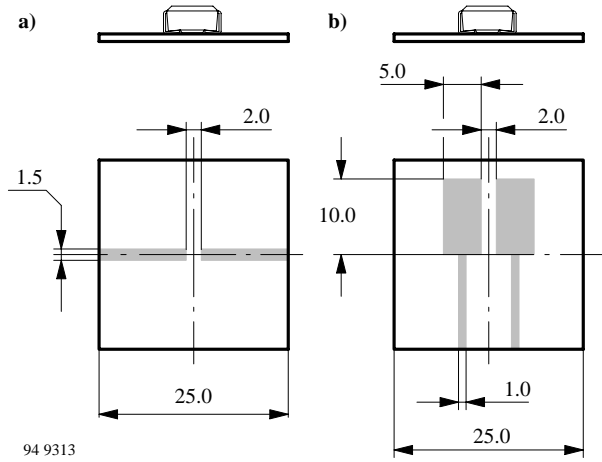


Figure 1. Boards for R_{thJA} definition (copper overlay 35μ)

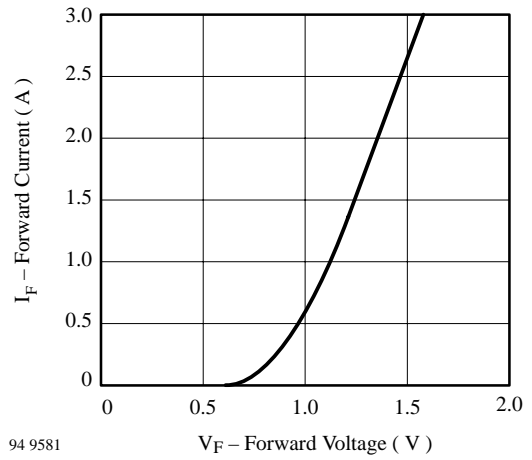


Figure 4. Forward Current vs. Forward Voltage

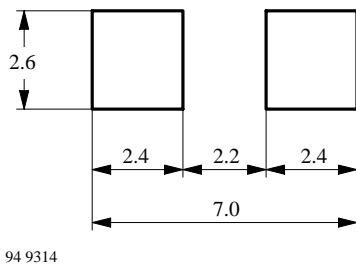


Figure 2. Recommended foot pads (in mm)

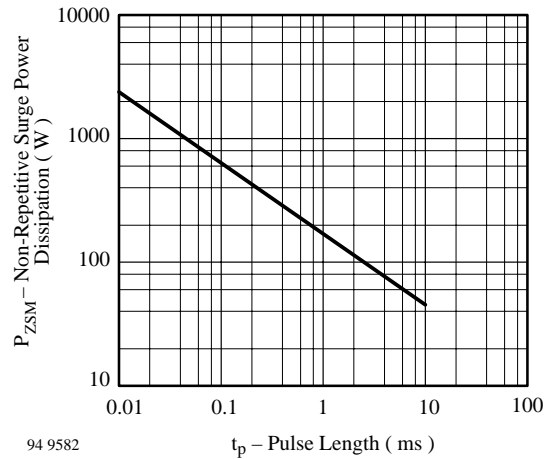


Figure 5. Non Repetitive Surge Power Dissipation vs. Pulse Length

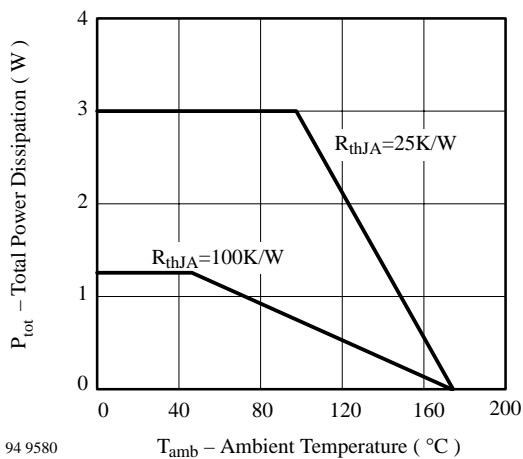


Figure 3. Total Power Dissipation vs. Ambient Temperature

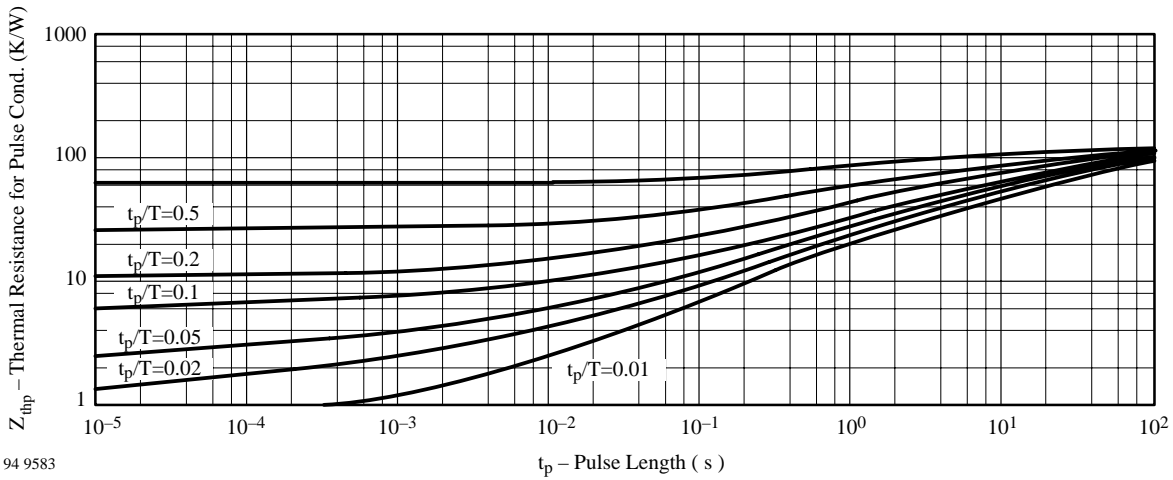
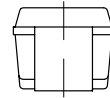
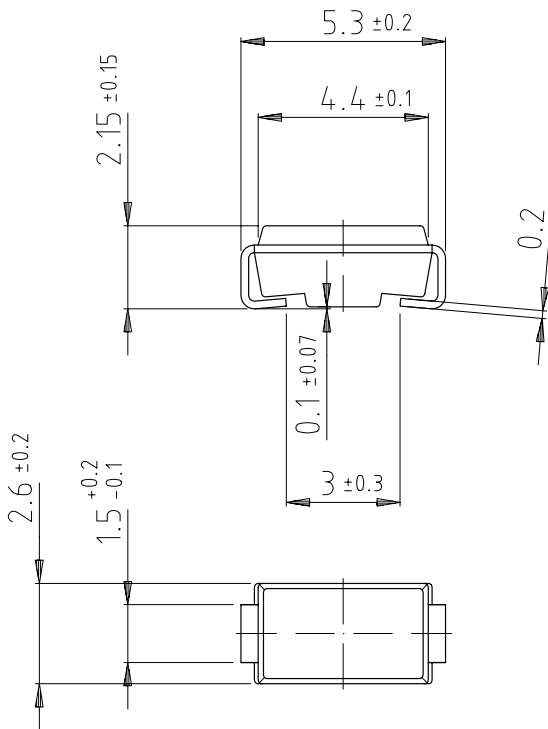
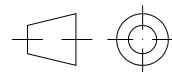


Figure 6. Thermal Response

Dimensions in mm



Plastic case JEDEC DO 214
similar to SMA
Cathode indicated by a band



14275
technical drawings
according to DIN
specifications



Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay-Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay-Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany
Telephone: 49 (0)7131 67 2831, Fax number: 49 (0)7131 67 2423