

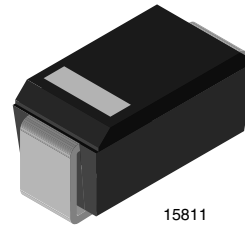
## Zener Diodes

### Features

- High reliability
- Voltage range 3.3 V to 100 V
- Fits onto 5 mm SMD footpads
- Wave and reflow solderable
- AEC-101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT



15811

### Applications

- Voltage stabilization

### Mechanical Data

**Case:** DO-214AC

**Weight:** approx. 77 mg

**Packaging codes/options:**

TR/1.5K 7" reel

TR3/6K 13" reel 6K/box

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	$R_{thJA} < 30\text{ K/W}$ , $T_{amb} = 60\text{ }^{\circ}\text{C}$	$P_{diss}$	3	W
	$R_{thJA} < 100\text{ K/W}$ , $T_{amb} = 25\text{ }^{\circ}\text{C}$	$P_{diss}$	1.25	W
Non repetitive peak surge power dissipation	$t_p = 100\text{ }\mu\text{s sq.pulse}$ , $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge	$P_{ZSM}$	60	W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 150	$^{\circ}\text{C}$

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction lead		$R_{thJL}$	30	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 ( $\text{Al}_2\text{O}_3$ ), fig. 1b	$R_{thJA}$	100	K/W

### Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 0.2\text{ A}$	$V_F$			1.2	V

### Electrical Characteristics

Part number	Zener voltage			Maximum dynamic resistance		Test current	Temp. coefficient of zener voltage		Test current	Max. reverse leakage current	Reverse voltage
	$V_Z$ at $I_{ZT}$			$r_{zT}$ at $I_{ZT}$	$r_{zK}$ at $I_{ZK}$	$I_{ZT}$	at $I_{ZT}$		$I_{ZK}$	$I_R$	$V_R$
	V			$\Omega$		mA	% / K		mA	$\mu$ A	V
	min.	typ.	max.				min.	max.			
BZG05C3V3	3.1	3.3	3.5	20	400	80	- 0.08	- 0.05	1	40	1
BZG05C3V6	3.4	3.6	3.8	20	500	60	- 0.08	- 0.05	1	20	1
BZG05C3V9	3.7	3.9	4.1	15	500	60	- 0.07	- 0.02	1	10	1
BZG05C4V3	4.0	4.3	4.6	13	500	50	- 0.07	- 0.01	1	3	1
BZG05C4V7	4.4	4.7	5.0	13	600	45	- 0.03	0.04	1	3	1
BZG05C5V1	4.8	5.1	5.4	10	500	45	- 0.01	0.04	1	1	1.5
BZG05C5V6	5.2	5.6	6.0	7	400	45	0	0.045	1	1	2
BZG05C6V2	5.8	6.2	6.6	4	300	35	0.01	0.055	1	1	3
BZG05C6V8	6.4	6.8	7.2	3.5	300	35	0.015	0.06	1	1	4
BZG05C7V5	7.0	7.5	7.9	3	200	35	0.02	0.065	0.5	1	4.5
BZG05C8V2	7.7	8.2	8.7	5	200	25	0.03	0.07	0.5	1	6.2
BZG05C9V1	8.5	9.1	9.6	5	200	25	0.035	0.075	0.5	1	6.8
BZG05C10	9.4	10	10.6	7	200	25	0.04	0.08	0.5	0.5	7
BZG05C11	10.4	11	11.6	8	300	20	0.045	0.08	0.5	0.5	8.2
BZG05C12	11.4	12	12.7	9	350	20	0.045	0.085	0.5	0.5	9.1
BZG05C13	12.4	13	14.1	10	400	20	0.05	0.085	0.5	0.5	10
BZG05C15	13.8	15	15.6	15	500	15	0.055	0.09	0.5	0.5	11
BZG05C16	15.3	16	17.1	15	500	15	0.055	0.09	0.5	0.5	12
BZG05C18	16.8	18	19.1	20	500	15	0.06	0.09	0.5	0.5	13
BZG05C20	18.8	20	21.2	24	600	10	0.06	0.09	0.5	0.5	15
BZG05C22	20.8	22	23.3	25	600	10	0.06	0.095	0.5	0.5	16
BZG05C24	22.8	24	25.6	25	600	10	0.06	0.095	0.5	0.5	18
BZG05C27	25.1	27	28.9	30	750	8	0.06	0.095	0.25	0.5	20
BZG05C30	28	30	32	30	1000	8	0.06	0.095	0.25	0.5	22
BZG05C33	31	33	35	35	1000	8	0.06	0.095	0.25	0.5	24
BZG05C36	34	36	38	40	1000	8	0.06	0.095	0.25	0.5	27
BZG05C39	37	39	41	50	1000	6	0.06	0.095	0.25	0.5	30
BZG05C43	40	43	46	50	1000	6	0.06	0.095	0.25	0.5	33
BZG05C47	44	47	50	90	1500	4	0.06	0.095	0.25	0.5	36
BZG05C51	48	51	54	115	1500	4	0.06	0.095	0.25	0.5	39
BZG05C56	52	56	60	120	2000	4	0.06	0.095	0.25	0.5	43
BZG05C62	58	62	66	125	2000	4	0.06	0.095	0.25	0.5	47
BZG05C68	64	68	72	130	2000	4	0.06	0.095	0.25	0.5	51
BZG05C75	70	75	79	135	2000	4	0.06	0.095	0.25	0.5	56
BZG05C82	77	82	87	200	3000	2.7	0.06	0.095	0.25	0.5	62
BZG05C91	85	91	96	250	3000	2.7	0.06	0.095	0.25	0.5	68
BZG05C100	95	100	106	350	3000	2.7	0.06	0.095	0.25	0.5	75

## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

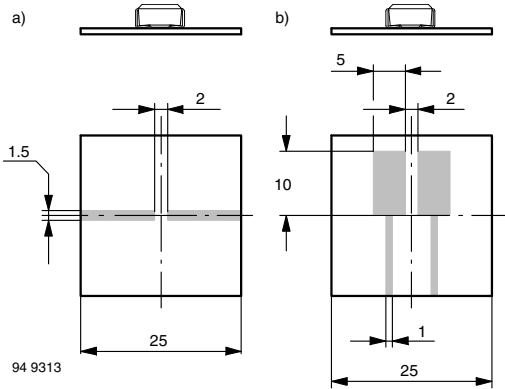


Figure 1. Boards for  $R_{thJA}$  Definition (Copper Overlay  $35\text{ }\mu$ )

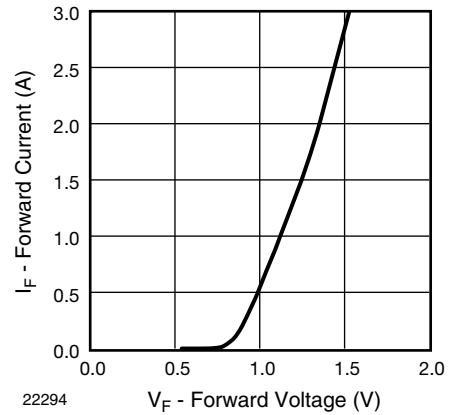


Figure 3. Forward Current vs. Forward Voltage

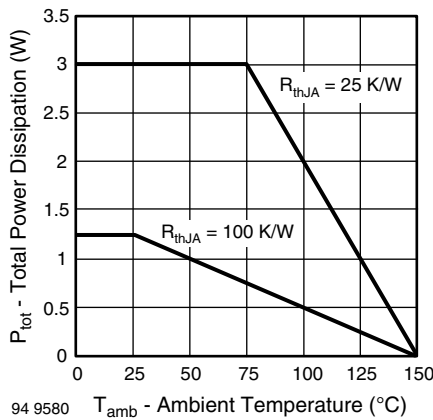


Figure 2. Typ. Total Power Dissipation vs. Ambient Temperature

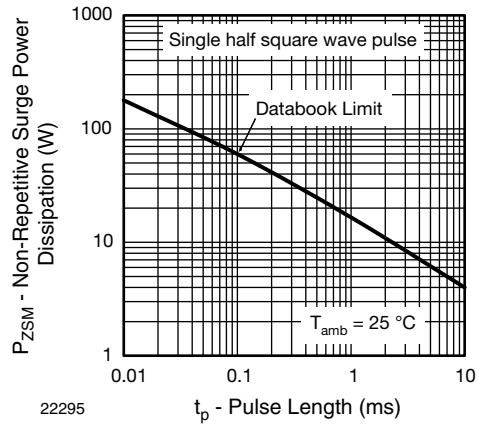


Figure 4. Non Repetitive Surge Power Dissipation vs. Pulse Length

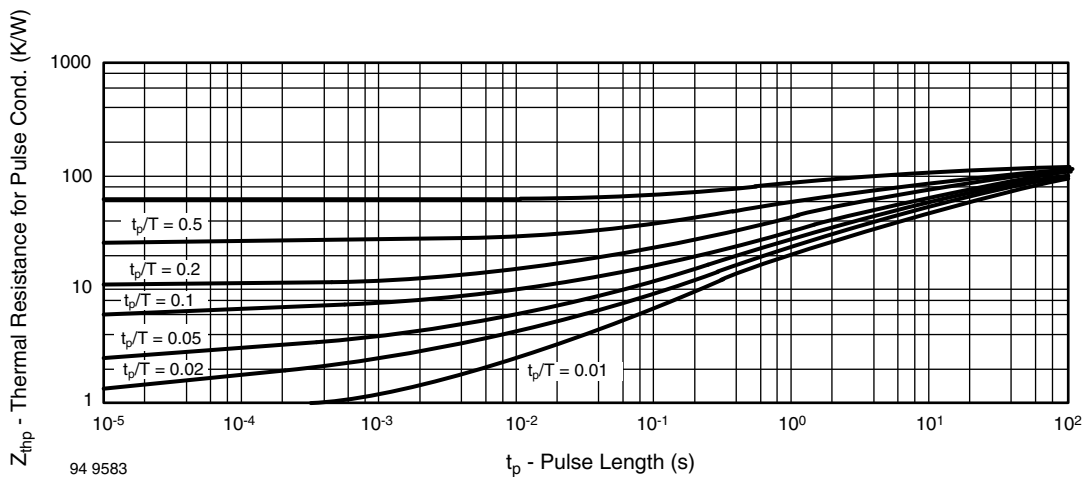


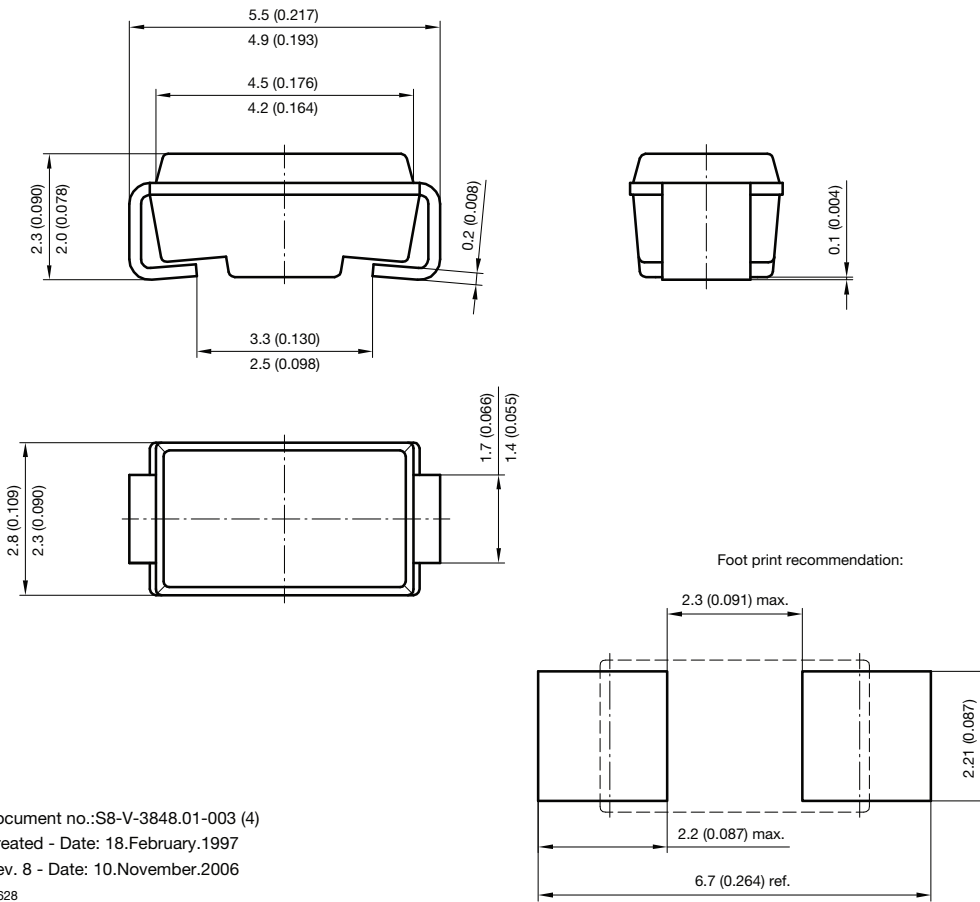
Figure 5. Thermal Response

# BZG05C-Series

Vishay Semiconductors



## Package Dimensions in millimeters (inches): DO-214AC



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19628



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