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Zener Diodes



FEATURES

- High reliability
- Voltage range 10 V to 270 V
- Fits onto 5 mm SMD footpads
- Wave and reflow solderable
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT

APPLICATIONS

- Voltage stabilization

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	10 to 270	V
Test current I_{ZT}	2 to 50	mA
V_{BR}	9.4 to 251	V
V_{WM}	8.2 to 220	V
P_{PPM}	300	W
T_J max.	150	°C
V_Z specification	Pulse current	
Int. construction	Single	
Polarity	Uni-directional	

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BZG03C-series	BZG03C-series-TR	1500 (7" reel)	
BZG03C-series	BZG03C-series-TR3	6000 (13" reel)	6000/box

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
DO-214AC	77 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	R_{thJA} < 25 K/W, T_{amb} = 100 °C	P_{tot}	3000	mW
	R_{thJA} < 100 K/W, T_{amb} = 50 °C	P_{tot}	1250	mW
Non repetitive peak surge power dissipation	t_p = 100 µs sq.pulse, T_j = 25 °C prior to surge	P_{ZSM}	600	W
Junction to lead		R_{thJL}	25	K/W
Junction to ambient air	Mounted on epoxy-glass hard tissue, fig. 1b	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
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Forward voltage (max.)	I_F = 0.5 A	V_F	1.2	V

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	ZENER VOLTAGE RANGE			TEST CURRENT	REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT OF ZENER VOLTAGE	
	V_Z at I_{ZT1}			I_{ZT1}	I_R at V_R		Z_Z at I_{ZT1}		TK_{VZ} at I_{ZT1}	
	V			mA	µA	V	Ω		%/K	
	MIN.	NOM.	MAX.		MAX.		TYP.	MAX.	MIN.	MAX.
BZG03C10	9.4	10	10.6	50	10	7.5	2	4	0.05	0.09
BZG03C11	10.4	11	11.6	50	4	8.2	4	7	0.05	0.1
BZG03C12	11.4	12	12.7	50	3	9.1	4	7	0.05	0.1
BZG03C13	12.4	13	14.1	50	2	10	5	10	0.05	0.1
BZG03C15	13.8	15	15.6	50	1	11	5	10	0.05	0.1
BZG03C16	15.3	16	17.1	25	1	12	6	15	0.06	0.11
BZG03C18	16.8	18	19.1	25	1	13	6	15	0.06	0.11
BZG03C20	18.8	20	21.2	25	1	15	6	15	0.06	0.11
BZG03C22	20.8	22	23.3	25	1	16	6	15	0.06	0.11
BZG03C24	22.8	24	25.6	25	1	18	7	15	0.06	0.11
BZG03C27	25.1	27	28.9	25	1	20	7	15	0.06	0.11
BZG03C30	28	30	32	25	1	22	8	15	0.06	0.11
BZG03C33	31	33	35	25	1	24	8	15	0.06	0.11
BZG03C36	34	36	38	10	1	27	21	40	0.06	0.11
BZG03C39	37	39	41	10	1	30	21	40	0.06	0.11
BZG03C43	40	43	46	10	1	33	24	45	0.07	0.12
BZG03C47	44	47	50	10	1	36	24	45	0.07	0.12
BZG03C51	48	51	54	10	1	39	25	60	0.07	0.12
BZG03C56	52	56	60	10	1	43	25	60	0.07	0.12
BZG03C62	58	62	66	10	1	47	25	80	0.08	0.13
BZG03C68	64	68	72	10	1	51	25	80	0.08	0.13
BZG03C75	70	75	79	10	1	56	30	100	0.08	0.13
BZG03C82	77	82	87	10	1	62	30	100	0.08	0.13
BZG03C91	85	91	96	5	1	68	60	200	0.09	0.13
BZG03C100	94	100	106	5	1	75	60	200	0.09	0.13
BZG03C110	104	110	116	5	1	82	80	250	0.09	0.13
BZG03C120	114	120	127	5	1	91	80	250	0.09	0.13
BZG03C130	124	130	141	5	1	100	110	300	0.09	0.13
BZG03C150	138	150	156	5	1	110	130	300	0.09	0.13
BZG03C160	158	160	171	5	1	120	150	350	0.09	0.13
BZG03C180	168	180	191	5	1	130	180	400	0.09	0.13
BZG03C200	188	200	212	5	1	150	200	500	0.09	0.13
BZG03C220	208	220	233	2	1	160	350	750	0.09	0.13
BZG03C240	228	240	256	2	1	180	400	850	0.09	0.13
BZG03C270	251	270	289	2	1	200	450	1000	0.09	0.13

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BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

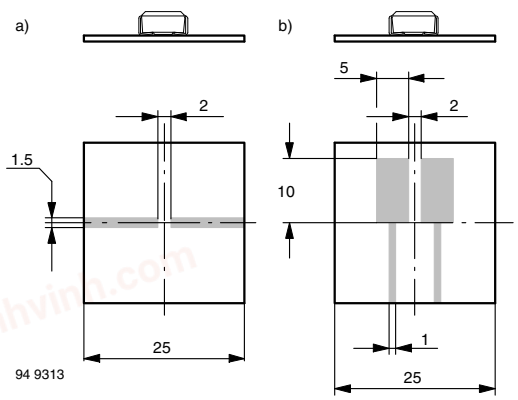


Fig. 1 - Boards for R_{thJA} Definition (Copper Overlay 35 µ)

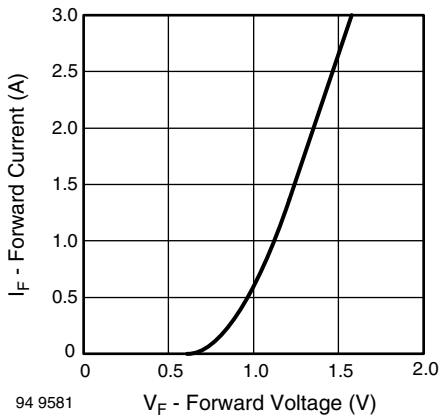


Fig. 3 - Forward Current vs. Forward Voltage

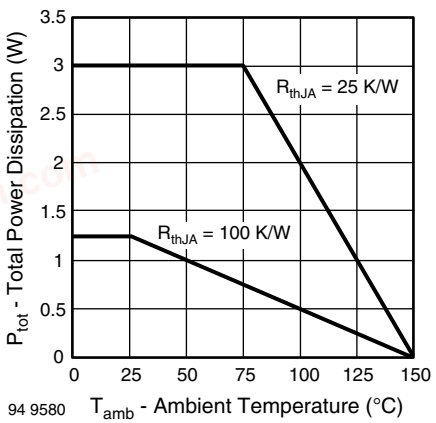


Fig. 2 - Total Power Dissipation vs. Ambient Temperature

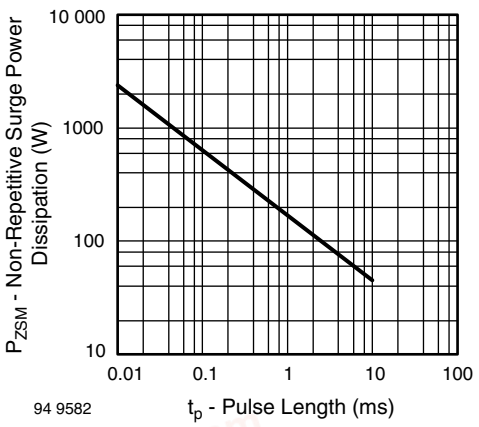


Fig. 4 - Non Repetitive Surge Power Dissipation vs. Pulse Length

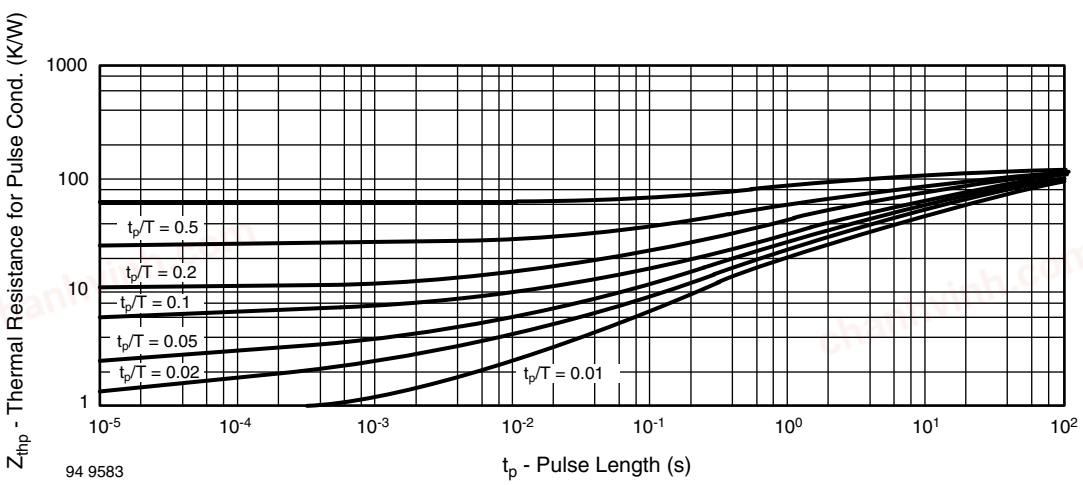
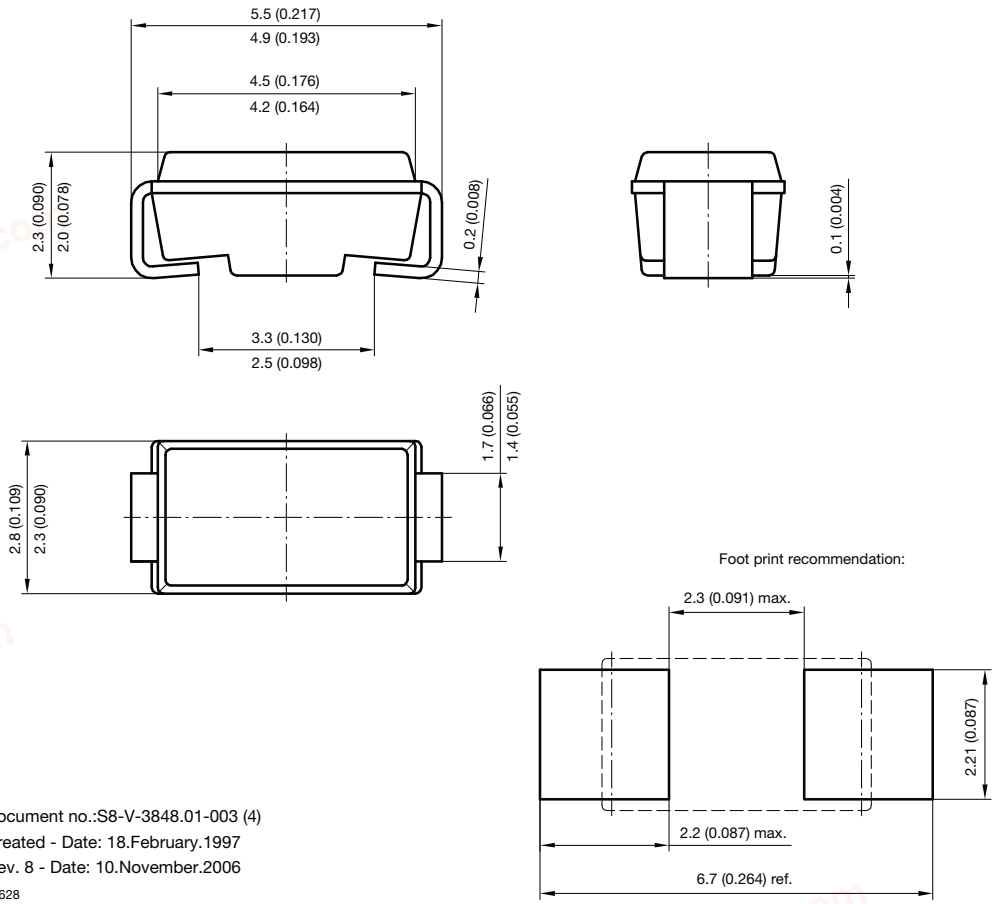


Fig. 5 - Thermal Response

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PACKAGE DIMENSIONS in millimeters (inches): **DO-214AC**



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