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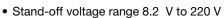
Vishay Semiconductors

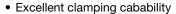
Zener Diodes with Surge Current Specification

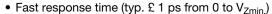


FEATURES









• AEC-Q101 qualified

 Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC





APPLICATIONS

• Protection from high voltage, high energy transients

PRIMARY CHARACTERISTICS						
PARAMETER	VALUE	UNIT				
V _Z range nom.	10 to 270	V				
Test current I _{ZT}	2 to 50	mA				
V _Z specification	Pulse current					
Int. construction	Single					

ORDERING INFORMATION							
DEVICE NAME	EVICE NAME ORDERING CODE		MINIMUM ORDER QUANTITY				
BZG04-series	BZG04-series-TR3	6000 per 13" reel	6000/box				
BZG04-series	BZG04-series-TR	1500 per 7" reel					

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	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	$t_p = 10/1000 \mu s \text{ sq.pulse},$ $T_j = 25 ^{\circ}\text{C} \text{ prior to surge}$	P _{ZSM}	300	W				
Peak forward surge current	10 ms single half sine wave	I _{FSM}	50	Α				
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 ₂ O ₃), fig. 1b	R_{thJA}	100	K/W				
Junction temperature		Tj	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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PART NUMBER	ZENER VOLTAGE RANGE Vz at IzT1 V NOM.	TEST CURRENT I _{ZT1} mA	STAND OFF VOLTAGE V _R at I _R		BREAKDOWN VOLTAGE V _(BR) at I _{ZT1}	CLAMPING VOLTAGE (1)		TEMPERATURE COEFFICIENT		JUNCTION CAPACITANCE
						V _{CL(R)} at I _{PP}	I _{PP}	TK _{VZ} at I _{ZT1}		C _j at V _R = 0 V, f = 1 MHZ
				μΑ	V MIN.	V MIN.	Α	%/K		pF
				MAX.				TYP.	MAX.	TYP.
BZG04-8V2	10	50	8.2	20	9.4	14.8	20.3	0.05	0.09	1200
BZG04-9V1	11	50	9.1	5	10.4	15.7	19.1	0.05	0.1	1100
BZG04-10	12	50	10	5	11.4	17	17.7	0.05	0.1	1000
BZG04-11	13	50	11	5	12.4	18.9	15.9	0.05	0.1	850
BZG04-12	15	50	12	5	13.8	20.9	14.4	0.05	0.1	815
BZG04-13	16	25	13	5	15.3	22.9	13.1	0.06	0.11	785
BZG04-15	18	25	15	5	16.8	25.6	11.7	0.06	0.11	710
BZG04-16	20	25	16	5	18.8	28.4	10.6	0.06	0.11	655
BZG04-18	22	25	18	5	20.8	31	9.7	0.06	0.11	610
BZG04-20	24	25	20	5	22.8	33.8	8.9	0.06	0.11	570
BZG04-22	27	25	22	5	25.1	38.1	7.9	0.06	0.11	545
BZG04-24	30	25	24	5	28	42.2	7.1	0.06	0.11	505
BZG04-27	33	25	27	5	31	46.2	6.5	0.06	0.11	475
BZG04-30	36	10	30	5	34	50.1	6	0.06	0.11	450
BZG04-33	39	10	33	5	37	54.1	5.5	0.06	0.11	420
BZG04-36	43	10	36	5	40	60.7	4.9	0.07	0.12	390
BZG04-39	47	10	39	5	44	65.5	4.6	0.07	0.12	370
BZG04-43	51	10	43	5	48	70.8	4.2	0.07	0.12	350
BZG04-47	56	10	47	5	52	78.6	3.8	0.07	0.12	330
BZG04-51	62	10	51	5	58	86.5	3.5	0.08	0.13	310
BZG04-56	68	10	56	5	64	94.4	3.2	0.08	0.13	291
BZG04-62	75	10	62	5	70	103.5	2.9	0.08	0.13	280
BZG04-68	82	10	68	5	77	114	2.6	0.08	0.13	275
BZG04-75	91	5	75	5	85	126	2.4	0.09	0.13	260
BZG04-82	100	5	82	5	94	139	2.2	0.09	0.13	250
BZG04-91	110	5	91	5	104	152	2	0.09	0.13	243
BZG04-100	120	5	100	5	114	167	1.8	0.09	0.13	170
BZG04-110	130	5	110	5	124	185	1.6	0.09	0.13	153
BZG04-120	150	5	120	5	138	204	1.5	0.09	0.13	150
BZG04-130	160	5	130	5	153	224	1.3	0.09	0.13	145
BZG04-150	180	5	150	5	168	249	1.2	0.09	0.13	140
BZG04-160	200	5	160	5	188	276	1.1	0.09	0.13	135
BZG04-180	220	2	180	5	208	305	1	0.09	0.13	131
BZG04-200	240	2	200	5	228	336	0.9	0.09	0.13	122
BZG04-220	270	2	220	5	251	380	0.8	0.09	0.13	120

Note

 $^{(1)}$ 10/1000 μs pulse

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

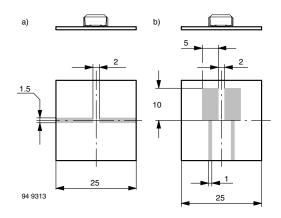


Fig. 1 - Boards for R_{thJA} Definition (Copper Overlay 35 μ)

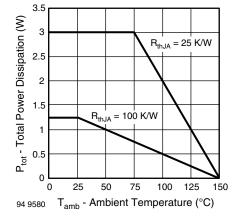


Fig. 2 - Typ. Total Power Dissipation vs. Ambient Temperature

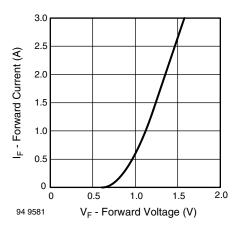


Fig. 3 - Forward Current vs. Forward Voltage

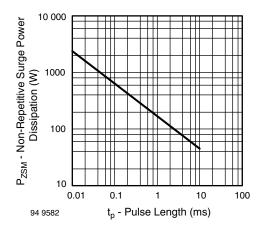


Fig. 4 - Non Repetitive Surge Power Dissipation vs. Pulse Length

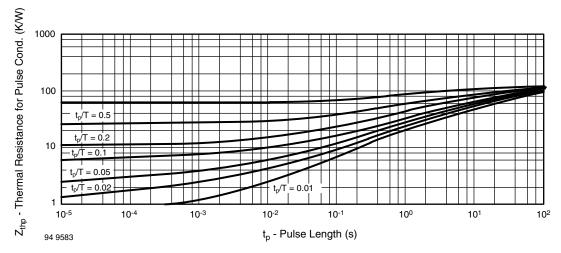
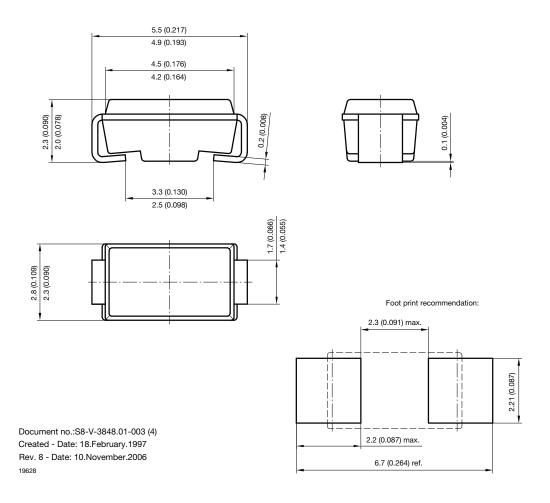


Fig. 5 - Thermal Response



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





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