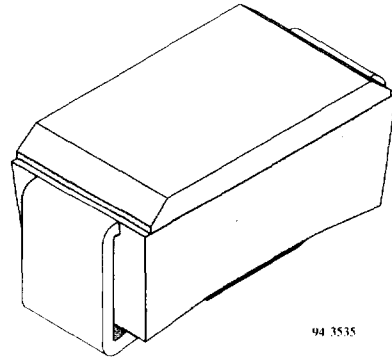


Silicon Transient Voltage Suppressors

Features

- Glass passivated junction
- High reliability
- Stand-off voltage range 8.2V to 430V
- Excellent clamping capability
- Fast response time (typ. $\leq 1\text{ps}$ from 0 to V_{Zmin})



94 3535

Applications

Protection from high voltage, high energy transients

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
	$R_{thJA} < 100\text{K/W}$, $T_{amb} = 50^\circ\text{C}$		P_V	1.25	W
Non repetitive peak surge power dissipation	$t_p = 10/1000\mu\text{s}$ sq.pulse, $T_j = 25^\circ\text{C}$ prior to surge		P_{ZSM}	300	W
Peak forward surge current	10ms single half sine wave		I_{FSM}	50	A
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 lead		R_{thJL}	25	K/W
Junction ambient	mounted on epoxy-glass hard issue, Fig. 1a	R_{thJA}	150	K/W
	mounted on epoxy-glass hard issue, Fig. 1b	R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al_2O_3), Fig. 1b	R_{thJA}	100	K/W

Characteristics

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

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

Type BZG04...	Stand-off voltage		Breakdown voltage		Clamping voltage	
	V_R	I_R	$V_{(BR)}$ at I_R		$V_{CL(R)}$ at $I_{PP}^*)$	
	V	μA	V	mA	V	A
		Max.	Min.		Max.	
8V2	8.2	20	9.4	50	14.8	20.3
9V1	9.1	5	10.4	50	15.7	19.1
10	10	5	11.4	50	17.0	17.7
11	11	5	12.4	50	18.9	15.9
12	12	5	13.8	50	20.9	14.4
13	13	5	15.3	25	22.9	13.1
15	15	5	16.8	25	25.6	11.7
16	16	5	18.8	25	28.4	10.6
18	18	5	20.8	25	31.0	9.7
20	20	5	22.8	25	33.8	8.9
22	22	5	25.1	25	38.1	7.9
24	24	5	28	25	42.2	7.1
27	27	5	31	25	46.2	6.5
30	30	5	34	10	50.1	6.0
33	33	5	37	10	54.1	5.5
36	36	5	40	10	60.7	4.9
39	39	5	44	10	65.5	4.6
43	43	5	48	10	70.8	4.2
47	47	5	52	10	78.6	3.8
51	51	5	58	10	86.5	3.5
56	56	5	64	10	94.4	3.2
62	62	5	70	10	103.5	2.9
68	68	5	77	10	114	2.6
75	75	5	85	5	126	2.4
82	82	5	94	5	139	2.2
91	91	5	104	5	152	2.0
100	100	5	114	5	167	1.8
110	110	5	124	5	185	1.6
120	120	5	138	5	204	1.5
130	130	5	153	5	224	1.3
150	150	5	168	5	249	1.2
160	160	5	188	5	276	1.1
180	180	5	208	2	305	1.0
200	200	5	228	2	336	0.9

*) 10/1000 μs pulse

Type BZG04...	Stand-off voltage		Breakdown voltage		Clamping voltage	
	V_R	I_R	$V_{(BR)}$ at I_R		$V_{CL(R)}$ at $I_{PP}^*)$	
	V	μA	V	mA	V	A
		Max.	Min.		Max.	
220	220	5	251	2	380	0.8
240	240	5	280	2	419	0.72
270	270	5	310	2	459	0.65
300	330	5	340	1	498	0.60
330	330	5	370	1	537	0.56
360	360	5	400	1	603	0.50
390	390	5	440	1	655	0.45
430	430	5	480	1	707	0.42

*) 10/1000 μs pulse

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

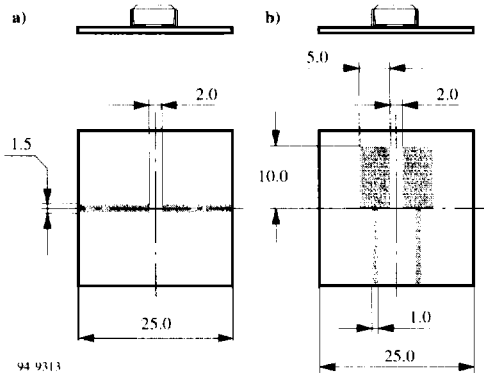


Figure 1 : Boards for R_{thJA} definition (copper overlay 35μ)

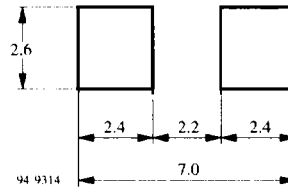


Figure 2 : Recommended foot pads

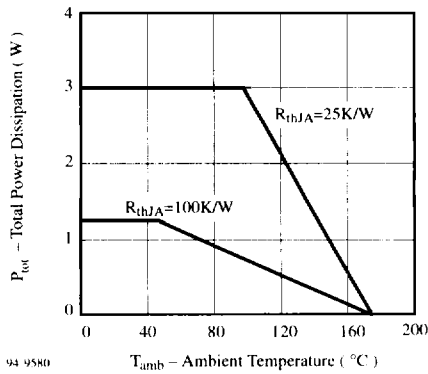


Figure 3 : Total Power Dissipation vs. Ambient Temperature

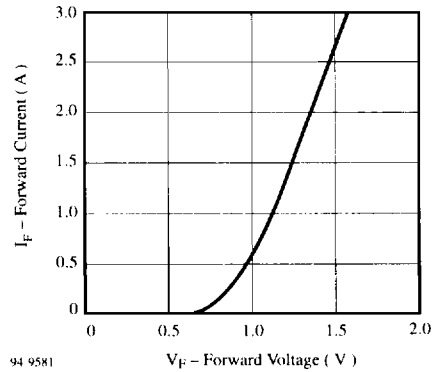
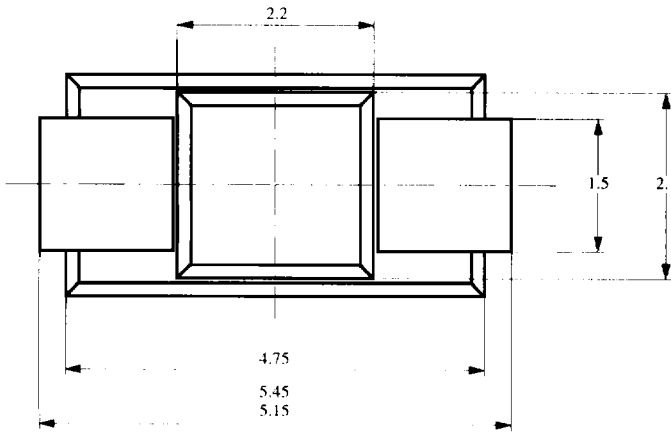


Figure 4 : Forward Current vs. Forward Voltage

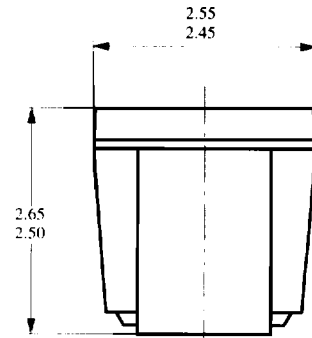
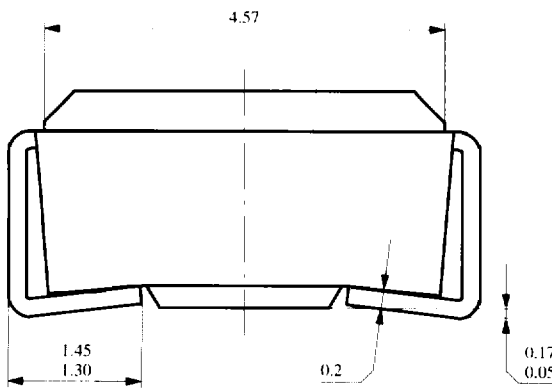
Dimensions in mm



 technical drawings according to DIN specifications

Plastic Case
JEDEC DO 214 AC
SOD 106 A

Cathode indicated by a Band



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