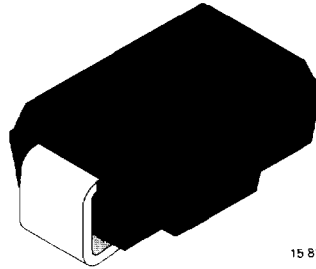


Silicon Transient Voltage Suppressors

Features

- Glass passivated junction
- High reliability
- Stand-off voltage range 8.2V to 220V
- Excellent clamping capability
- Fast response time (typ. $\leq 1\text{ps}$ from 0 to V_{Zmin})



15 811

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...+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	Standoff Voltage		Breakdown Voltage $V_{(BR)}$ at I_R		Clamping Voltage $V_{CL(R)}$ at I_{PP}	
	V_R V	I_R μ A	V	mA	V ^{*)}	A ^{*)}
BZG04...		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
220	220	5	251	2	380	0.8

^{*)} 10/1000 μ s pulse

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

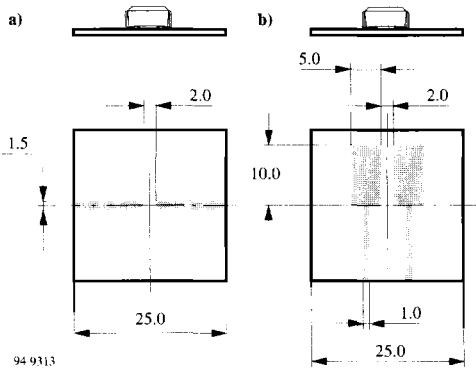


Figure 1. Boards for R_{thJA} definition (copper overlay 35μ)

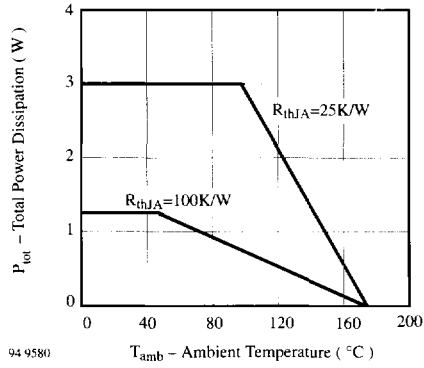


Figure 3. Total Power Dissipation vs. Ambient Temperature

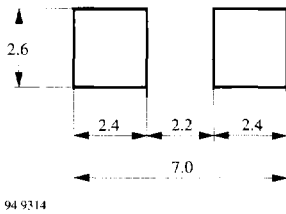


Figure 2. Recommended foot pads (in mm)

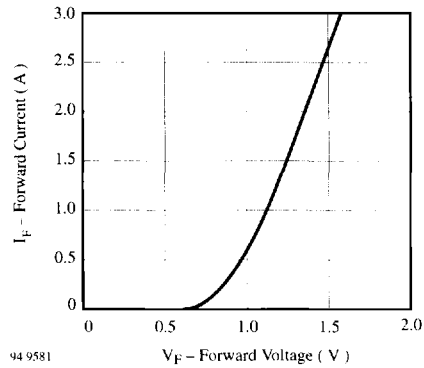
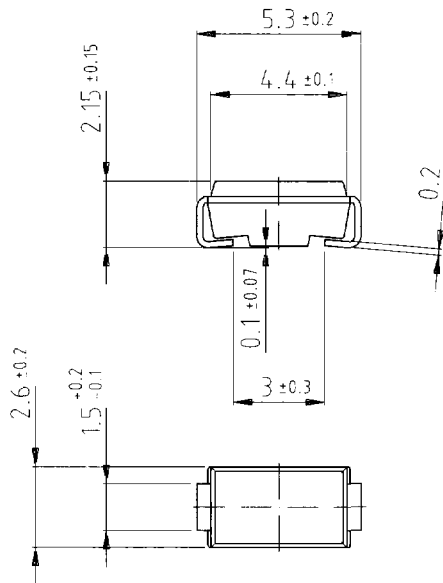
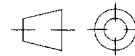


Figure 4. Forward Current vs. Forward Voltage

Dimensions in mm



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



Technical drawings
 according to DIN
 specifications

14275