

Voltage Stabilisation Diode

BZG03-C51

Z-Diode 51V / 3W

DATASHEET

OEM – Philips

Source: Philips Databook 1999

Voltage regulator diodes

BZG03 series

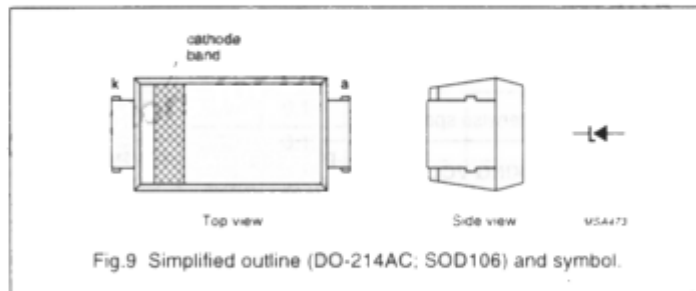
FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- UL 94V-O classified plastic package
- Zener working voltage range: 10 to 270 V for 35 types
- Supplied in 12 mm embossed tape.

DESCRIPTION

DO-214AC surface mountable package with glass passivated chip.

The well-defined void-free case is of a transfer-moulded thermo-setting plastic.



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
P_{tot}	total power dissipation	$T_{ip} = 100\text{ }^{\circ}\text{C}$; see Fig.10	–	3.00	W
P_{tot}	total power dissipation	$T_{amb} = 50\text{ }^{\circ}\text{C}$; see Fig.10; device mounted on an Al_2O_3 PCB (see Fig.13)	–	1.25	W
P_{ZSM}	non-repetitive peak reverse power dissipation	$t_p = 100\text{ }\mu\text{s}$; square pulse; $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge; see Fig.11	–	600	W
T_{stg}	storage temperature		–65	+175	$^{\circ}\text{C}$
T_j	junction temperature		–65	+175	$^{\circ}\text{C}$

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ELECTRICAL CHARACTERISTICS

Total series

$T_J = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 0.5\text{ A}$; see Fig.12	1.2	V

Per type

$T_J = 25\text{ }^\circ\text{C}$ unless otherwise specified.

TYPE No. SUFFIX (1)	WORKING VOLTAGE			DIFFERENTIAL RESISTANCE		TEMPERATURE COEFFICIENT		TEST CURRENT I_Z (mA)	REVERSE CURRENT at REVERSE VOLTAGE	
	V_Z (V) at I_Z			r_{diff} (Ω) at I_Z		S_Z (%/K) at I_Z			I_R (μA)	V_R (V)
	MIN.	NOM.	MAX.	TYP.	MAX.	MIN.	MAX.	MAX.		
C10	9.4	10	10.6	2	4	0.05	0.09	50	7	7.5
C11	10.4	11	11.6	4	7	0.05	0.10	50	4	8.2
C12	11.4	12	12.7	4	7	0.05	0.10	50	3	9.1
C13	12.4	13	14.1	5	10	0.05	0.10	50	2	10
C15	13.8	15	15.6	5	10	0.05	0.10	50	1	11
C16	15.3	16	17.1	6	15	0.06	0.11	25	1	12
C18	16.8	18	19.1	6	15	0.06	0.11	25	1	13
C20	18.8	20	21.2	6	15	0.06	0.11	25	1	15
C22	20.8	22	23.3	6	15	0.06	0.11	25	1	16
C24	22.8	24	25.6	7	15	0.06	0.11	25	1	18
C27	25.1	27	28.9	7	15	0.06	0.11	25	1	20
C30	28	30	32	8	15	0.06	0.11	25	1	22
C33	31	33	35	8	15	0.06	0.11	25	1	24
C36	34	36	38	21	40	0.06	0.11	10	1	27
C39	37	39	41	21	40	0.06	0.11	10	1	30
C43	40	43	46	24	45	0.07	0.12	10	1	33
C47	44	47	50	24	45	0.07	0.12	10	1	36
C51	48	51	54	25	60	0.07	0.12	10	1	39
C56	52	56	60	25	60	0.07	0.12	10	1	43
C62	58	62	66	25	80	0.08	0.13	10	1	47
C68	64	68	72	25	80	0.08	0.13	10	1	51
C75	70	75	79	30	100	0.08	0.13	10	1	56
C82	77	82	87	30	100	0.08	0.13	10	1	62
C91	85	91	96	60	200	0.09	0.13	5	1	68
C100	94	100	106	60	200	0.09	0.13	5	1	75
C110	104	110	116	80	250	0.09	0.13	5	1	82
C120	114	120	127	80	250	0.09	0.13	5	1	91

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BZG03 series

TYPE No. SUFFIX (1)	WORKING VOLTAGE			DIFFERENTIAL RESISTANCE		TEMPERATURE COEFFICIENT		TEST CURRENT I_Z (mA)	REVERSE CURRENT at REVERSE VOLTAGE	
	V_Z (V) at I_Z			r_{dif} (Ω) at I_Z		S_Z (%/K) at I_Z			I_R (μ A)	V_R (V)
	MIN.	NOM.	MAX.	TYP.	MAX.	MIN.	MAX.	MAX.		
C130	124	130	141	110	300	0.09	0.13	5	1	100
C150	138	150	156	130	300	0.09	0.13	5	1	110
C160	153	160	171	150	350	0.09	0.13	5	1	120
C180	168	180	191	180	400	0.09	0.13	5	1	130
C200	188	200	212	200	500	0.09	0.13	5	1	150
C220	208	220	233	350	750	0.09	0.13	2	1	160
C240	228	240	256	400	850	0.09	0.13	2	1	180
C270	251	270	289	450	1000	0.09	0.13	2	1	200

Note

- To complete the type number the suffix is added to the basic type number, e.g. BZG03-C130.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R_{th-jtp}	thermal resistance from junction to tie-point		25	K/W
R_{th-ja}	thermal resistance from junction to ambient	note 1	100	K/W
		note 2	150	K/W

Notes

- Device mounted on an Al_2O_3 printed-circuit board, 0.7 mm thick; thickness of Cu-layer $\geq 35 \mu m$, see Fig.13.
- Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer $\geq 40 \mu m$, see Fig.13. For more information please refer to the 'General Part of Handbook SC01'.

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GRAPHICAL DATA

