

Voltage regulator diodes

BZG03 series

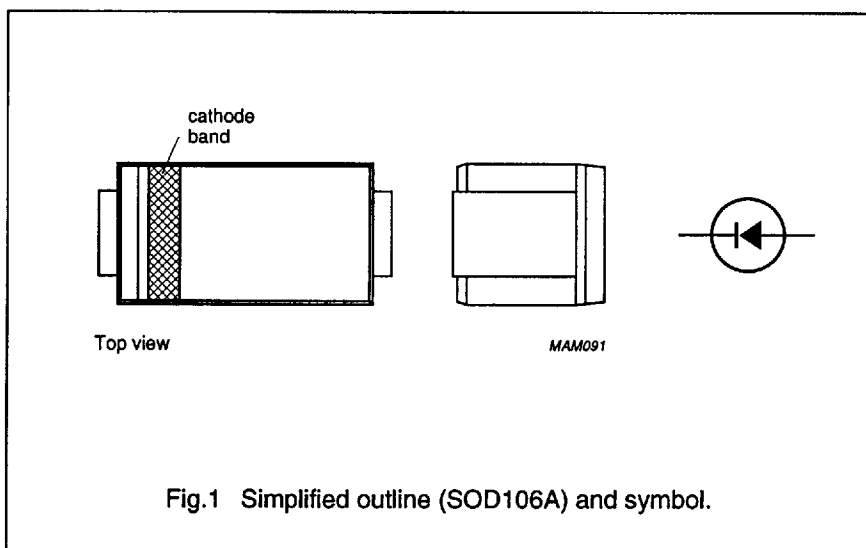
DESCRIPTION

High reliability glass-passivated diodes in a small rectangular SMD SOD106A envelope. The envelope dimensions meet JEDEC DO-214AC envelope specification. They are intended for use as medium power voltage regulator diodes, especially in automotive applications.

The series consists of BZG03-C10 to BZG03-C270 in the normalized E24 range.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	NOM.	MAX.	UNIT
V_Z	working voltage range	10 to 270	–	V
P_{tot}	total power dissipation	–	3	W
P_{ZSM}	non-repetitive peak reverse power dissipation	–	600	W



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
P_{tot}	total power dissipation	$T_{tp} = 100\text{ °C}$	–	3	W
		$T_{amb} = 50\text{ °C}$; PCB mounted; see Fig 2	–	1.25	W
P_{ZSM}	non-repetitive peak reverse power dissipation	$t_p = 100\text{ }\mu\text{s}$, square pulse; $T_j = 25\text{ °C}$ prior to surge	–	600	W
T_{stg}	storage temperature		–65	+175	°C
T_j	junction temperature		–65	+175	°C

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THERMAL RESISTANCE

SYMBOL	PARAMETER	CONDITIONS	THERMAL RESISTANCE
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		25 K/W
$R_{th\ j-amb}$	thermal resistance from junction to ambient	note (1)	100 K/W
		note (2)	150 K/W

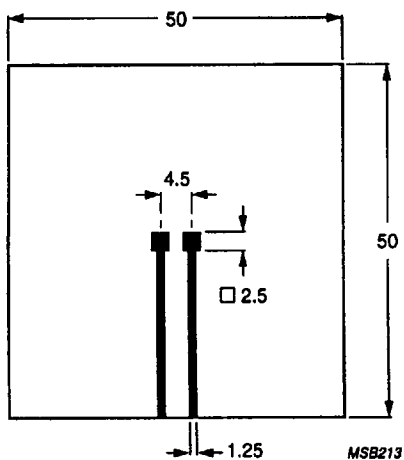
Note

1. Device mounted on a 0.7 mm thick Al_2O_3 printed-circuit board; thickness of copper $\geq 35\ \mu m$; see Fig 2.
2. Device mounted on a 1.5 mm thick epoxy glass printed-circuit board; thickness of copper $\geq 40\ \mu m$; see Fig 2

CHARACTERISTICS

$T_j = 25\ ^\circ C$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_F	forward voltage	$I_F = 0.5\ A$	—	1.2	V



Dimensions in mm.

Fig.2 Printed-circuit board for surface mounting.

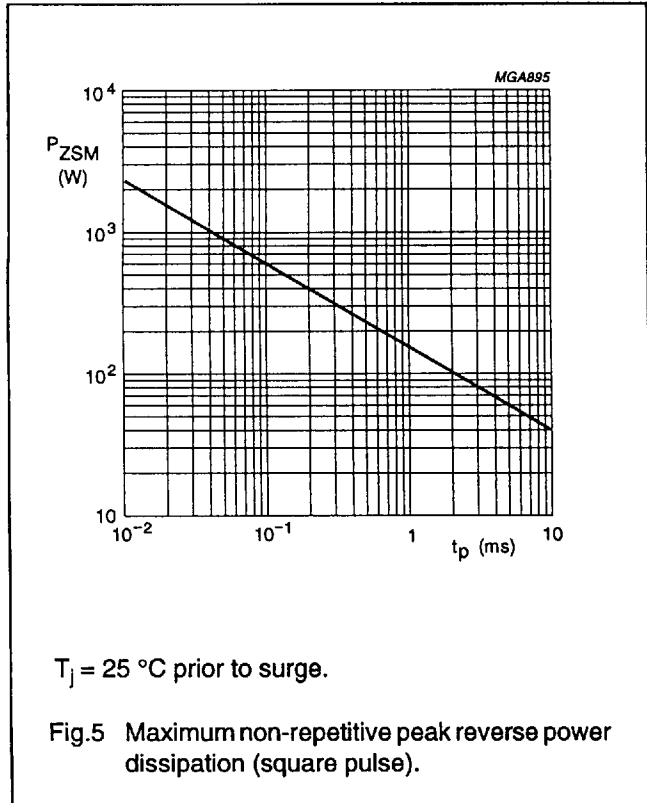
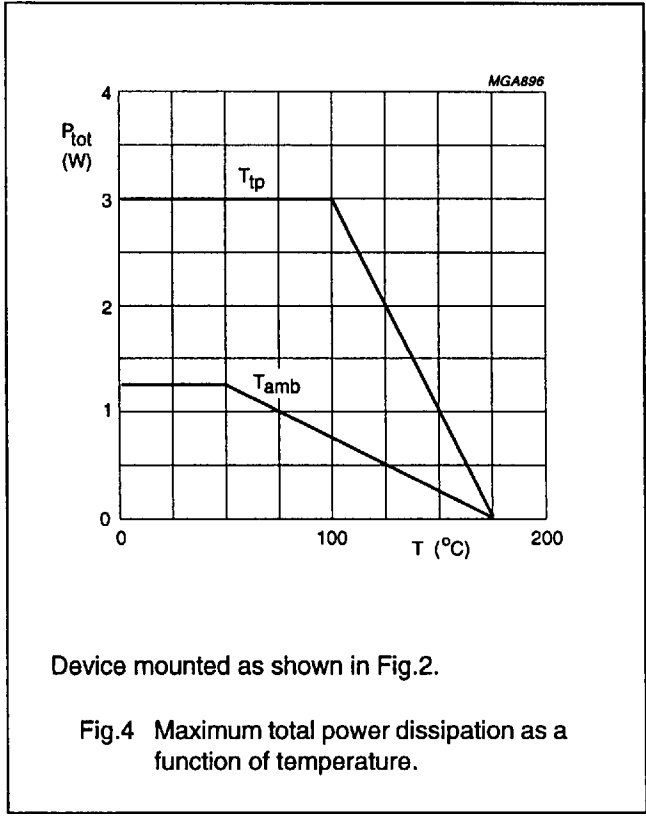
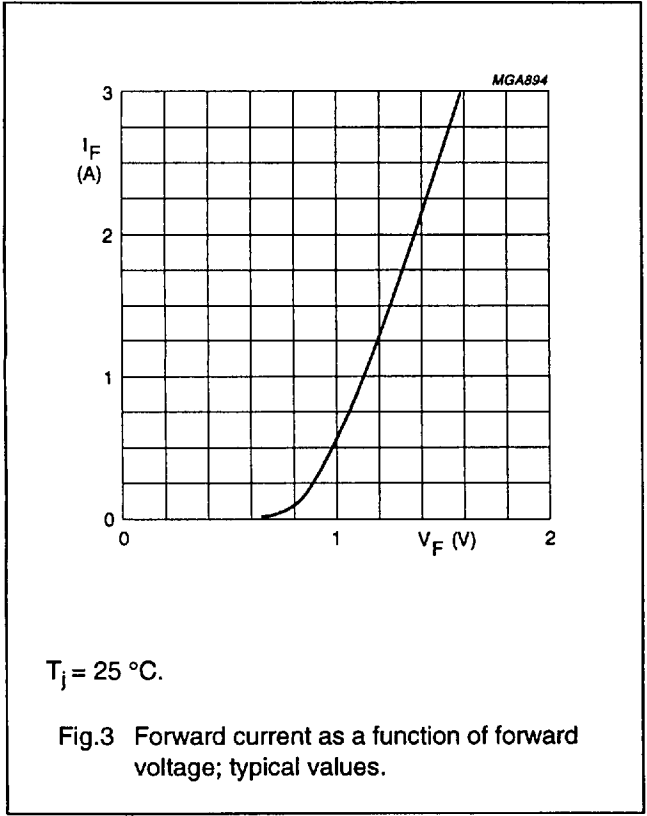
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BZG03 -XXXX	WORKING VOLTAGE			DIFFERENTIAL RESISTANCE		TEMPERATURE COEFFICIENT		TEST CURRENT	REVERSE CURRENT at REVERSE VOLTAGE	
	V _Z (V) at I _Z			r _{dif} (Ω) at I _Z		S _Z (%/K) at I _Z		I _Z (mA)	I _R (μA)	V _R (V)
	MIN.	NOM.	MAX.	TYP.	MAX.	MIN.	MAX.		MAX.	
C10	9.4	10	10.6	2	4	0.05	0.09	50	10	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
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

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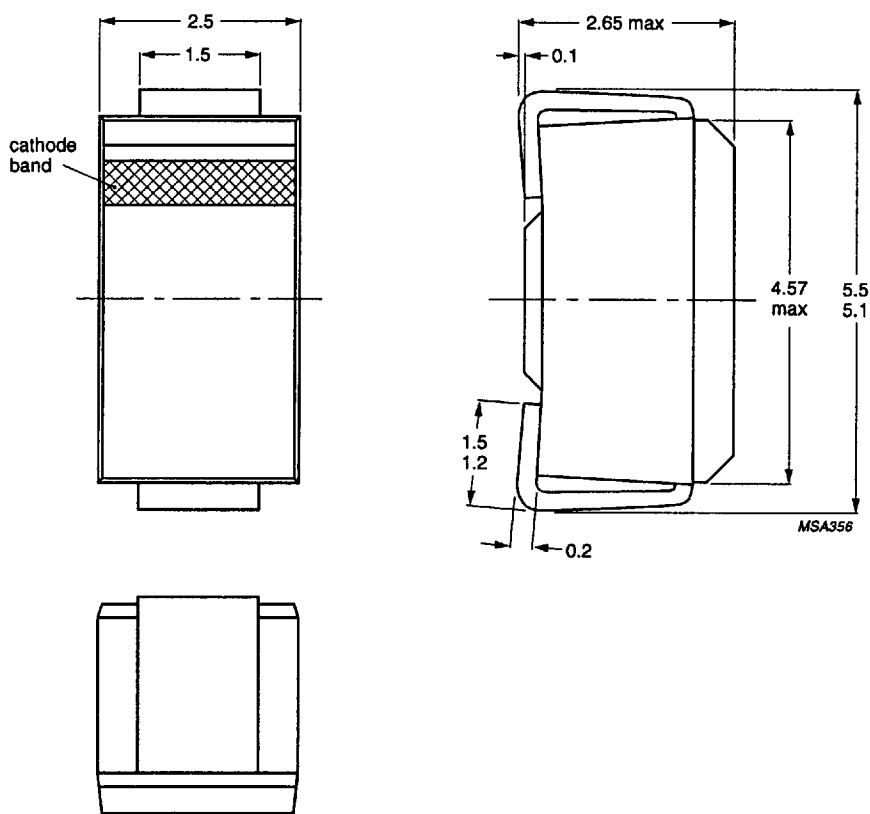
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PACKAGE OUTLINE



Dimensions in mm.

Fig.8 SOD106A.

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DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.