

**Detail specification for
silicon voltage
regulator
diodes — 1.5 W, 6.8
to 200 V (5 %),
hermetically sealed —
General application
category C**

UDC 621.382.2:621.316.722

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 16 and a back cover.

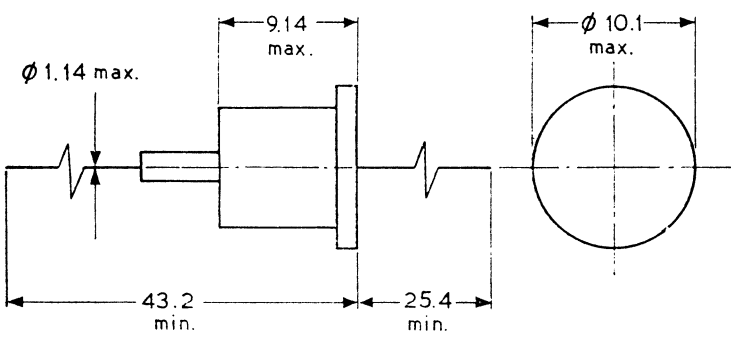
This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

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ELECTRONIC COMPONENT OF ASSESSED QUALITY: DETAIL SPECIFICATION	
Outline and dimensions (Third angle projection)  Flange end-cathode All dimensions in millimetres For detail dimensions see BS 3934 SO-16	VOLTAGE REGULATOR DIODE
	GENERAL APPLICATION CATEGORY Q
	MANUFACTURER'S TYPE NUMBER AS SHOWN IN BS 9002
	1.5 W 6.8 to 200 V (5 %) SILICON VOLTAGE REGULATOR DIODE HERMETICALLY SEALED

1 Limiting conditions of use (not for inspection purposes)

Absolute maximum values

Power rating

P_{tot}	Reverse power dissipation	1.5 W
	For derating curve of reverse power dissipation against T_{amb}	see Figure 1

Thermal ratings

T_{amb}	Operating temperature range	– 55 °C to 150 °C
T_{stg}	Storage temperature range	– 55 °C to 150 °C

2 Characteristics (not for inspection purposes) (at 25 °C unless otherwise stated)

V_{z1}	Working voltage at I_{z1} as Table 1, col. 4	see Table 1, cols. 1, 2, 3
V_{z2}	Minimum working voltage at I_{z2} as Table 1, col. 11	see Table 1, col. 13
I_{R5}	Maximum reverse current at V_R as Table 1, col. 8	see Table 1, col. 9
I_{R6}	Maximum reverse current at $T_{\text{amb}} = 100$ °C and V_R as Table 1, col. 8	see Table 1, col. 10
r_{z1}	Maximum differential resistance at I_{z1} as Table 1, col. 4	see Table 1, col. 5
r_{z2}	Maximum differential resistance at I_{z2} as Table 1, col. 11	see Table 1, col. 12
S_z	Temperature coefficient of V_{z1} over temperature range $T_{\text{amb}} = 25$ °C to $T_{\text{amb}} = 60$ °C and at I_{z1} as Table 1, col. 4	see Table 1, cols. 6, 7

3 Marking

- 1) Each diode shall bear the following markings:
 - a) Cathode terminal shall be identified.
 - b) The manufacturer's type designation.
- 2) Each package containing one or more of these diodes shall bear marking b) above and in addition:
 - c) The factory identification code (from BS 9002).
 - d) The date code.
 - e) The number of this detail specification, i.e. BS 9305 N042, Issue 1.

4 Related documents

This specification shall be read in conjunction with the following British Standards:

BS 9000, “*General requirements for electronic components of assessed quality*”.

BS 9300, “*Semiconductor devices of assessed quality: Generic data and methods of test*”.

It is written in accordance with:

BS 9305, “*Rules for the preparation of detail specifications for semiconductor devices of assessed quality — voltage regulator diodes*”.

Other related documents are:

BS 9001, “*Sampling procedures and tables for inspection by attributes for electronic parts of assessed quality*”.

BS 3934, “*Dimensions of semiconductor devices*”.

5 Ordering information

Orders for this diode shall contain the following minimum information:

.... (Qty). Voltage regulator diode type...: Nominal voltage V_{z1}

Conforming to BS 9305 N042, Issue 1, dated March 1972.

Table 1 — Characteristics

1	2	3	4	5	6	7	8	9	10	11	12	13
V_{z1} nom.	V_{z1} min.	V_{z1} max.	I_{z1}	r_{z1} max.	S_z min.	S_z max.	V_R	I_{R5} max.	I_{R6} max.	I_{z2}	r_{z2} max.	V_{z2} min.
V	V	V	mA	Ω	%/°C	%/°C	V	μ A	mA	mA	Ω	V
6.8	6.4	7.2	20	4.0	0.005	0.075	5.1	200	0.5	2	160	5.8
7.5	7.0	7.9	20	4.0	0.015	0.085	5.6	100	0.2	2	150	6.4
8.2	7.7	8.7	20	4.0	0.015	0.085	6.2	50	0.1	2	140	7.0
9.1	8.5	9.6	20	4.0	0.020	0.090	6.8	15	0.1	2	130	7.7
10.0	9.4	10.6	20	4.3	0.020	0.090	7.5	10	0.1	2	120	8.5
11.0	10.4	11.6	20	5.5	0.025	0.095	8.2	10	0.1	2	110	9.4
12.0	11.4	12.7	20	7.0	0.025	0.095	9.1	10	0.1	2	100	10.4
13.0	12.4	14.1	20	10.0	0.030	0.100	10.0	10	0.1	2	100	11.4
15.0	13.8	15.6	10	16.0	0.030	0.100	11.0	10	0.1	1	100	12.4
16.0	15.3	17.1	10	18.0	0.035	0.105	12.0	10	0.1	1	115	13.8
18.0	16.8	19.1	10	21.0	0.035	0.105	13.0	10	0.1	1	140	15.3
20.0	18.8	21.2	10	26.0	0.040	0.110	15.0	10	0.1	1	155	16.8
22.0	20.8	23.3	10	30.0	0.040	0.110	16.0	10	0.1	1	170	18.8
24.0	22.7	25.9	10	33.0	0.045	0.115	18.0	10	0.1	1	185	20.8
27.0	25.1	28.9	10	39.0	0.045	0.115	20.0	10	0.1	1	200	22.7
30.0	28.0	32.0	10	44.0	0.050	0.120	22.0	10	0.1	1	220	25.1
33.0	31.0	35.0	10	49.0	0.050	0.120	24.0	10	0.1	1	240	28.0
36.0	34.0	38.0	10	55.0	0.050	0.130	27.0	10	0.1	1	260	31.0
39.0	37.0	41.0	10	60.0	0.050	0.130	30.0	10	0.1	1	275	34.0
43.0	40.0	46.0	10	65.0	0.050	0.130	33.0	10	0.1	1	300	37.0
47.0	44.0	50.0	10	70.0	0.050	0.140	36.0	10	0.1	1	320	40.0
51.0	48.0	54.0	10	75.0	0.050	0.140	39.0	10	0.1	1	345	44.0
56.0	52.0	60.0	10	85.0	0.050	0.140	43.0	10	0.1	1	375	48.0
62.0	58.0	66.0	10	95.0	0.050	0.140	47.0	10	0.1	1	415	52.0
68.0	64.0	72.0	10	110.0	0.050	0.150	51.0	10	0.1	1	458	58.0
75.0	70.0	79.0	10	120.0	0.050	0.150	56.0	10	0.1	1	500	64.0
82.0	77.0	87.0	5	140.0	0.050	0.150	62.0	10	0.1	0.5	700	70.0
91.0	85.0	96.0	5	160.0	0.050	0.150	68.0	10	0.1	0.5	920	77.0
100.0	94.0	106.0	5	180.0	0.050	0.150	75.0	10	0.1	0.5	1 150	85.0
110.0	104.0	116.0	5	220.0	0.050	0.150	82.0	10	0.1	0.5	1 400	94.0
120.0	114.0	127.0	5	260.0	0.050	0.150	91.0	10	0.1	0.5	1 700	104.0
130.0	124.0	141.0	5	360.0	0.050	0.150	100.0	10	0.1	0.5	2 000	114.0
150.0	138.0	156.0	2	450.0	0.050	0.150	110.0	10	0.1	0.2	3 000	124.0
160.0	153.0	171.0	2	550.0	0.050	0.150	120.0	10	0.1	0.2	3 600	138.0
180.0	168.0	191.0	2	800.0	0.050	0.150	130.0	10	0.1	0.2	5 000	153.0
200.0	188.0	212.0	2	1 200.0	0.050	0.150	150.0	10	0.1	0.2	7 000	168.0