



S-BAND MONITOR DIODE

Service Type CV6107

The data should be read in conjunction with the Monitor Diode Preamble.

DESCRIPTION

The BS510 is a monitor diode operating in the frequency range 2.5 to 6.5GHz. The diode may be used in a suitable mount at any frequency within this range, the bandwidth and v.s.w.r. depending on the design of the mount. The following table gives brief details of the range of mounts currently available for use with the BS510; full data on each are available separately.

Type	Frequency Range (GHz)	V.S.W.R. (max)	Waveguide Flange NATO Stock No.	Notes
BS514	2.6 to 3.2	1.3:1	5985-99-083-0010	Tunable
BS524			-0009	
BS534			-0058	
BS516	2.8 to 3.2	1.5:1	5985-99-083-0009	Fixed-tuned,
BS522			-0058	screened load
BS530	2.7 to 2.95	1.3:1	5985-99-083-0058	Fixed-tuned
BS532	2.95 to 3.2	1.3:1	5985-99-083-0058	Fixed-tuned

GENERAL DATA

Mechanical

Overall dimensions	see outline drawing
Mounting position	see note 1
Ambient temperature	70 °C max

Electrical

Frequency range	2.5 to 6.5	GHz
V.S.W.R.	1.5:1	max
Heater voltage (pre-heat)	6.3 ± 0.5	V
Heater voltage (operating)		see note 2
Heater current at 6.3V	1.2 ± 0.1	A
Load resistance	68 ± 1%	Ω
Power sensitivity		see note 3

MAXIMUM RATINGS

Input power (peak)	20	kW
Input power (mean)	18	W
Pulse length (see note 4)	15	μ s

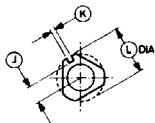
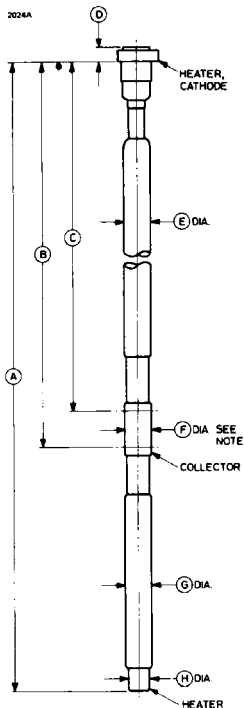
NOTES

1. The diode and mount may be mounted in any position provided there is free convection of the surrounding air.
2. The maximum diode life will be obtained if the heater voltage is reduced when the diode is operating with r.f. power input. The reduced voltage should be 10% to 20% above the value at which the amplitude of the diode output voltage begins to decrease.
3. The diode is tested for sensitivity under the following conditions:

Pulse length	10 ± 1	μ s
Pulse repetition rate	250	p.p.s.
Load resistance	$68 \pm 1\%$	Ω
Output voltage (peak)	$9 \pm 1\%$	V
Mount type	BS530	BS532
Frequency	2.8	3.1 GHz
Input power (peak)	235 to 290	250 to 305 W
4. English Electric Valve Company Ltd. should be consulted if operation at pulse lengths exceeding 15μ s is required.

OUTLINE

2024A



Ref	Inches	Millimetres
A	15.600 ± 0.150	396.2 ± 3.8
B	11.400 min	289.6 min
C	10.750 max	273.1 max
D	0.250 max	6.35 max
E	0.187 min	4.75 min
F	0.428 max	10.87 max
G	0.435 $\begin{smallmatrix} +0.001 \\ -0.004 \end{smallmatrix}$	11.049 $\begin{smallmatrix} +0.025 \\ -0.102 \end{smallmatrix}$
H	0.428 max	10.87 max
I	0.364	9.25
J	0.280 max	7.11 max
K	0.063 ± 0.003	1.600 ± 0.076
L	0.750 ± 0.005	19.05 ± 0.13

Millimetre dimensions have been derived from inches.

Note Diameter F will be maintained between dimensions B and C.