

FORWARD WAVE AMPLIFIER

LA4-2

Application: Amplifier, low noise factor
 Frequency: 4Gc/s band
 Construction: Unpackaged

PRELIMINARY DATA

CHARACTERISTICS

	Min.	Max.	
Frequency band	3.6	to 4.2	Gc/s
Gain (low power level)	26	—	dB
Noise factor	—	8.5	dB
Saturation power output	2.0	—	mW
Attenuation (at $I_k = 0$ mA)	45	—	dB
Cold input match in recommended mount			
Over any 30Mc/s in band with matching device adjusted	v.s.w.r.	—	1.1
Over 3.6 to 4.2Gc/s without matching device	v.s.w.r.	—	2.0
Cold output match in recommended mount			
Over any 30Mc/s in band with matching device adjusted	v.s.w.r.	—	1.1
Over 3.6 to 4.2Gc/s without matching device	v.s.w.r.	—	2.0

CATHODE

Indirectly heated

V_h	6.0 to 9.0	V
I_h (at $V_h = 6.3$ V)	300	mA

The operating heater voltage of the tube will be within the range 6.0V to 9.0V and will be specified for each tube. Operating the tube at the stated voltage will result in a minimum noise factor.

TYPICAL OPERATION

As an input amplifier using a reversed field permanent magnet system of approved design.

	Specified value	
V_h	3.9	Gc/s
f	500	V
$V_{collector}$	550	V
V_{helix}	500	V
V_{g3}	150	V
V_{g2}	40	V
V_{g1}	200	μ A
$I_{collector}$	27	dB
Gain (low power level)	8.0	dB
Noise factor	100	μ W
Power output		
Cold input match in recommended mount with matching device adjusted		
At 3.9Gc/s	v.s.w.r.	1.04
At ± 15 Mc/s about 3.9Gc/s	v.s.w.r.	1.09
Cold output match in recommended mount with matching device adjusted		
At 3.9Gc/s	v.s.w.r.	1.04
At ± 15 Mc/s about 3.9Gc/s	v.s.w.r.	1.14



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LIMITING VALUES (absolute ratings)

$V_{\text{collector max.}}$	800	V
$I_{\text{collector max.}}$	350	μA
$P_{\text{collector max.}}$	300	mW
$V_{\text{helix max.}}$	800	V
$I_{\text{helix max.}}$	50	μA
$V_{g2 \text{ max.}}$	800	V
$V_{g3 \text{ max.}}$	800	V
$V_{g1 \text{ max.}}$	100	V
$I_{g1+g2+g3 \text{ max.}}$	50	μA
$P_{\text{in (signal) max.}}$	100	mW
$V_{h-k \text{ max.}}$	50	V

MOUNTING POSITION

Any

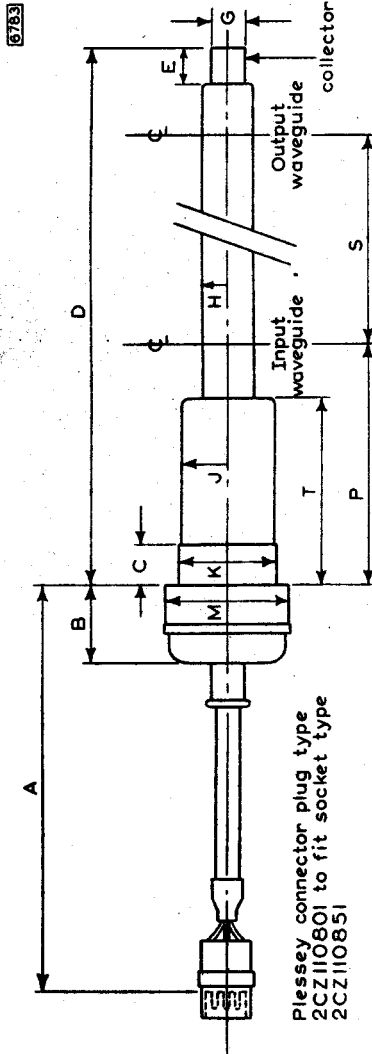
ACCESSORY

Mount Permanent magnet

P4L-1

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Plessey connector plug type
2CZ110801 to fit socket type
2CZ110851

Waveguide dimensions 2.372 x 0.197 in., 60.25 x 5.00 mm.

	Inches	mm
A	4.409 ± 0.197	112 ± 5
B	1.299	33
C	0.650	16.5
D	13.701	348
E	0.394	10
G	0.311 ± 0.004	7.9 ± 0.1
H	0.201	5.1
J	0.464	11.8
K	1.063	27
M	1.259	32
P	3.130	79.5
S	8.819	224
T	2.244	57

