

FORWARD WAVE AMPLIFIER

LA4-250

Application: Intermediate amplifier.
 Frequency: 4 Gc/s band.
 Construction: Unpackaged.

PRELIMINARY DATA

CHARACTERISTICS

	Min.	Max.	
Frequency band	3.6 to	4.2	Gc/s
Gain (low power level)	30	—	dB
Noise factor	—	25	dB
Saturation power output	200	—	mW
Attenuation (at $I_k = 0$ mA)	50	—	dB
Input match in recommended mount			
Over any 30Mc/s in band with matching device adjusted	v.s.w.r.	—	1.10
Over 3.6 to 4.2Gc/s without matching device	v.s.w.r.	—	2.0
Output match in recommended mount			
Over any 30Mc/s in band with matching device adjusted	v.s.w.r.	—	1.10
Over 3.6 to 4.2Gc/s without matching device	v.s.w.r.	—	2.0

CATHODE

Indirectly heated			
V_h		6.3	V
I_h		750	mA

TYPICAL OPERATION

As an intermediate amplifier using a periodic permanent-magnet system of approved design.

f		3.9	Gc/s
$V_{collector}$		1.15	kV ←
V_{helix}		1.2	kV
V_{g2}		1.1	kV ←
V_{g1}		250	V ←
$I_{collector}$		4.5	mA ←
Gain		31	dB
Noise factor		24	dB
Power output		30	mW
Input match in recommended mount with matching device adjusted			
At 3.9Gc/s	v.s.w.r.		1.02
At ±15Mc/s about 3.9Gc/s	v.s.w.r.		1.10
Output match in recommended mount with matching device adjusted			
At 3.9Gc/s	v.s.w.r.		1.02
At ±15Mc/s about 3.9Gc/s	v.s.w.r.		1.10

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LIMITING VALUES (absolute ratings)

$V_{\text{collector max.}}$	1.5	kV
$I_{\text{collector max.}}$	6.0	mA ←
$P_{\text{collector max.}}$	7.5	W
$V_{\text{helix max.}}$	1.5	kV
$I_{\text{helix max.}}$	500	μA
$V_{\text{g2 max.}}$	1.6	kV
$I_{\text{g2 max.}}$	100	μA
$V_{\text{g1 max.}}$	500	V
$I_{\text{g1 max.}}$	50	μA
$V_{\text{h-k max.}}$	50	V
$P_{\text{in(signal) max.}}$	1.0	W

MOUNTING POSITION

Any

ACCESSORY

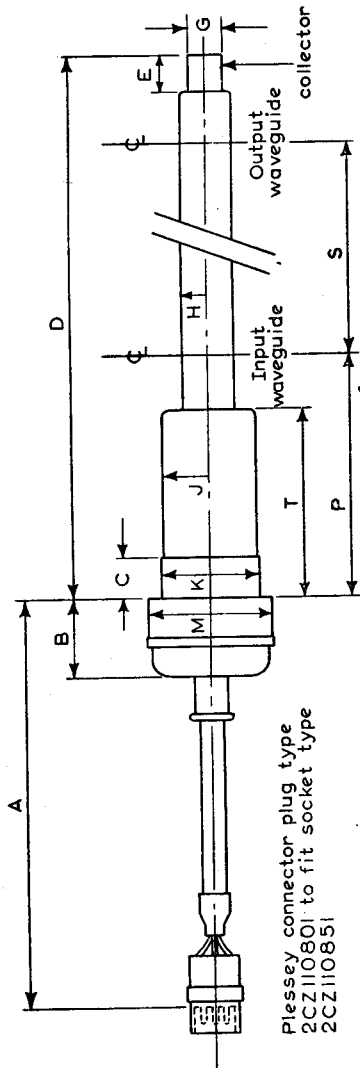
Mount Permanent magnet

P4L-2

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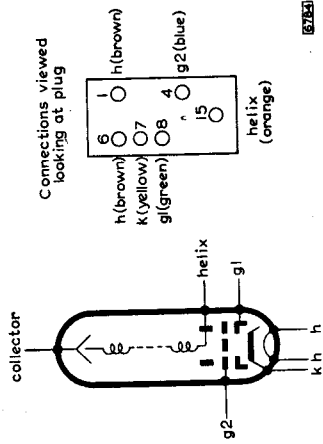
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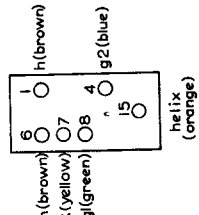
Plessey connector plug type
2CZ110801 to fit socket type
2CZ110851

Waveguide dimensions 2.372 x 0.197 inches, 60.25 x 5.00 millimetres.

	Inches	Millimetres
A	4.409 ± 0.917	112 ± 5
B	1.299	33
C	0.650	16.5
D	14.528	369
E	0.787 ± 0.118	20 ± 3
G	0.276 ± 0.004	7.0 ± 0.1
H	0.150	3.8
J	0.465	11.8
K	1.063	27
M	1.260	32
P	3.071 ± 0.008	78.0 ± 0.2
S	9.055 ± 0.008	229.9 ± 0.2
T	2.047	52



Connections viewed looking at plug



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