

FORWARD WAVE AMPLIFIER

LB4-2

Application: Power amplifier
 Frequency: 4Gc/s band
 Construction: Unpackaged

PRELIMINARY DATA

CHARACTERISTICS

	Min.	Max.	
Frequency band	3.6 to 4.2		Gc/s
Gain			
Low power level	33	—	dB
$P_{out} = 2W$	30	—	dB
Noise factor	—	30	dB
Saturation power output	2.5	—	W
Attenuation (at $I_k = 0mA$)	60	—	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		6.3	V
I_h		1.4	A

TYPICAL OPERATION

As a power amplifier using a periodic permanent magnet system of approved design

f		3.9	Gc/s
$V_{collector}$		1.25	kV
V_{helix}		1.3	kV
V_{g2}		1.0	kV
V_{g1}		0	V
$I_{collector}$		25	mA
Gain		31	dB
Noise factor		29	dB
Power output		2.0	W
Cold input match in recommended mount with matching device adjusted			
At 3.9Gc/s	v.s.w.r.	1.02	
At $\pm 15Mc/s$ about 3.9Gc/s	v.s.w.r.	1.1	
Cold output match in recommended mount with matching device adjusted			
At 3.9Gc/s	v.s.w.r.	1.02	
At $\pm 15Mc/s$ about 3.9Gc/s	v.s.w.r.	1.1	

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LIMITING VALUES (absolute ratings)

$V_{\text{collector}}$ max.	2.0	kV
$I_{\text{collector}}$ max.	35	mA
$P_{\text{collector}}$ max.	40	W
V_{helix} max.	2.0	kV
I_{helix} (no signal) max.	2.0	mA
V_{g2} max.	2.0	kV
I_{g2} max.	1.0	mA
$-V_{g1}$ max.	150	V
P_{in} (signal) max.	1.0	W
$V_{\text{h-k}}$ max.	50	V

MOUNTING POSITION Horizontal, or vertical with convection duct

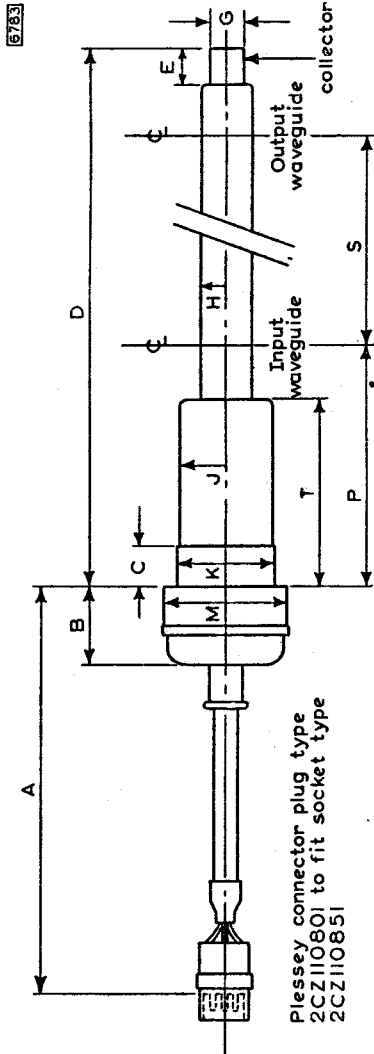
ACCESSORY

Mount Permanent magnet

P4L-3

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Waveguide dimensions 2.372 x 0.118 in., 60.25 x 3.00 mm.

	inches	mm
A	4.409 ± 0.197	112 ± 5
B	1.299	33
C	0.650	16.5
D	12.717	323
E	1.260 ± 0.004	32 ± 0.1
G	0.295 ± 0.004	7.5 ± 0.1
H	0.150	3.8
J	0.539	13.7
K	1.240	31.5
M	1.319	33.5
P	3.268	83
S	7.284 ± 0.008	185 ± 0.2
T	2.106	53.5

