

FORWARD WAVE AMPLIFIER

LA9-3B

Application: Broadband low power amplifier.

Frequency: 'X' band.

Construction: Packaged, periodic permanent magnet focussed.

PRELIMINARY DATA

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS – MICROWAVE DEVICES: INTRODUCTION and FORWARD WAVE AMPLIFIERS which precede this section of the handbook.

CHARACTERISTICS

	Min. 7.0	to	Max. 11.5	Gc/s
Frequency band				
Gain (low power level)—over frequency band	20	—		dB
Noise factor	—		25	dB
Saturation power output	4.0	—		mW
Attenuation (at $I_k = 0\text{mA}$)	40	—		dB
Input match—broadband (v.s.w.r.)	—		3.5	
Output match—broadband (v.s.w.r.)	—		3.5	

CATHODE

Indirectly heated

V_h	6.3	V
I_h	500	mA
t_{h-k}	5.0	min

TYPICAL OPERATION

f	9.0	Gc/s
$V_{\text{collector}}$	1.4	kV
V_{helix}	1.3	kV
V_{g3}	135	V
V_{g2}	155	V
V_{g1}	-85	V
$I_{\text{collector}}$	550	μA
Gain	30	dB
Noise factor	20	dB
Power output	50	μW
Input match (v.s.w.r.)	3.0	
Output match (v.s.w.r.)	3.0	

ABSOLUTE MAXIMUM RATINGS

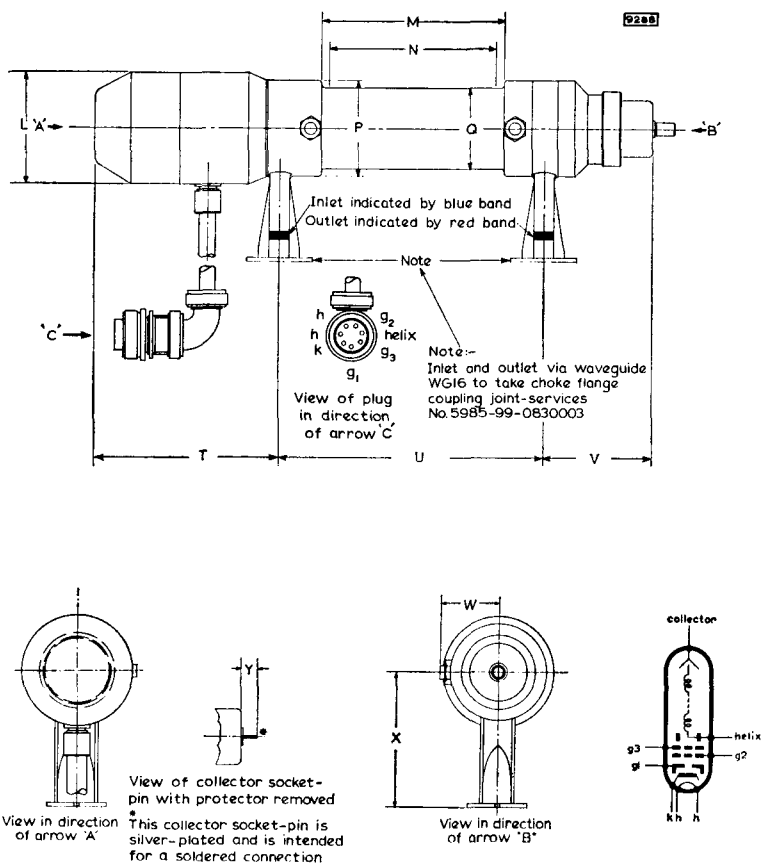
$V_{\text{collector max.}}$	1.55	kV
$I_{\text{collector max.}}$	600	μA
$P_{\text{collector max.}}$	900	mW
$V_{\text{helix max.}}$	1.45	kV
$I_{\text{helix max.}}$	50	μA
$V_{g3 \text{ max.}}$	400	V
$I_{g3 \text{ max.}}$	10	μA
$V_{g2 \text{ max.}}$	200	V
$I_{g2 \text{ max.}}$	10	μA
$-V_{g1 \text{ max.}}$	100	V
$I_{g1 \text{ max.}}$	10	μA
$P_{\text{in(signal) max.}}$	500	mW
$V_{h-k \text{ max.}}$	50	V

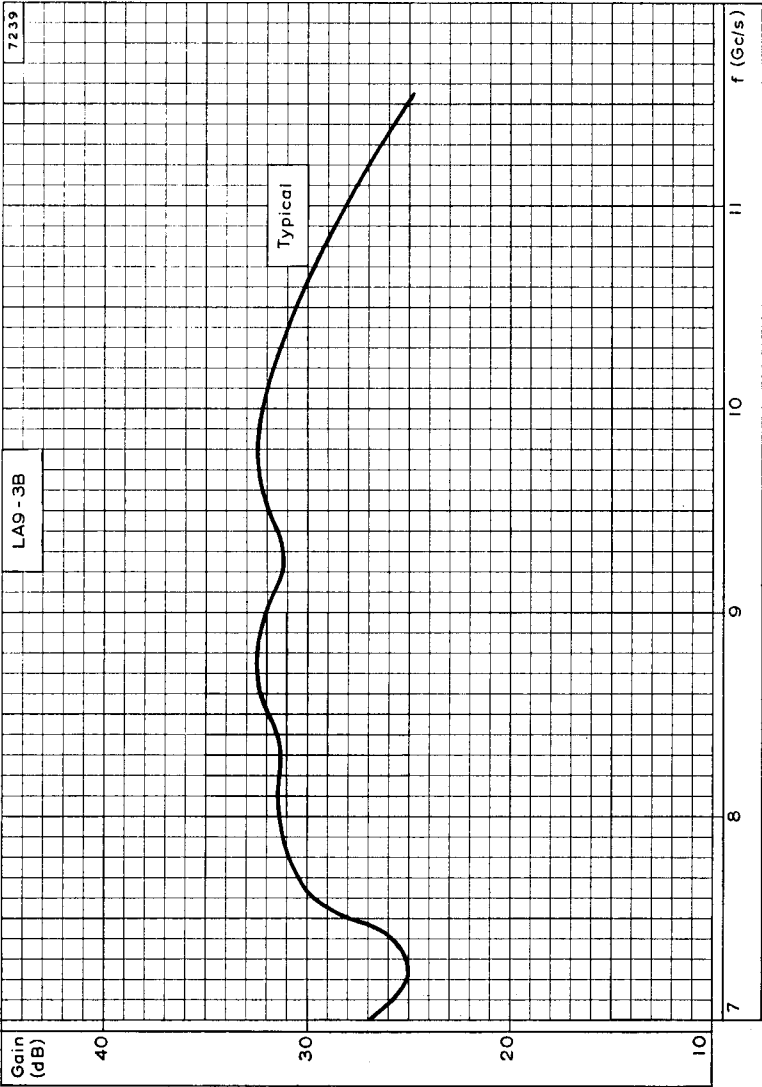
MOUNTING POSITION

Any

DIMENSIONS

	<i>Inches</i>	<i>Millimetres</i>	
L	2.39	86	max.
M	5.275 ± 0.039	134 ± 1	
N	5.00	127	min.
P	2.795 ± 0.039	71 ± 1	
Q	2.401 ± 0.008	61 ± 0.2	
T	5.40 ± 0.12	137 ± 3	
U	7.828 ± 0.008	198.84 ± 0.2	
V	3.11 ± 0.08	79 ± 2	
W	1.77	45	max.
X	3.976 ± 0.020	101 ± 0.5	
Y	0.398 ± 0.08	10 ± 2	

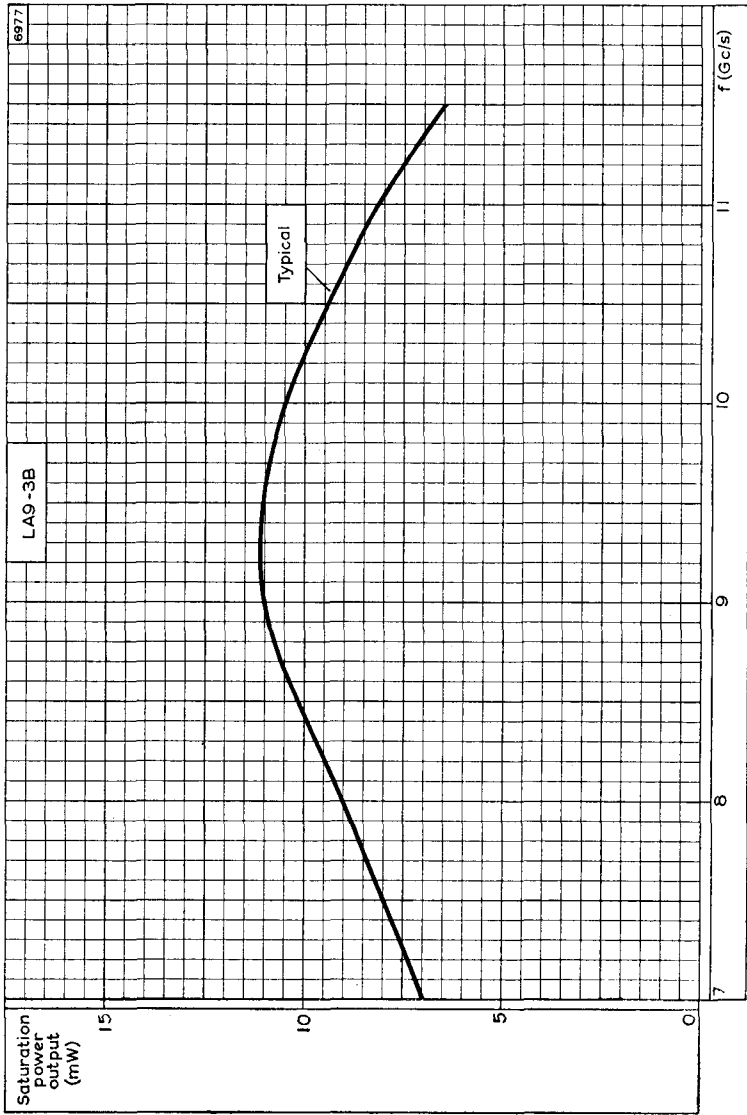




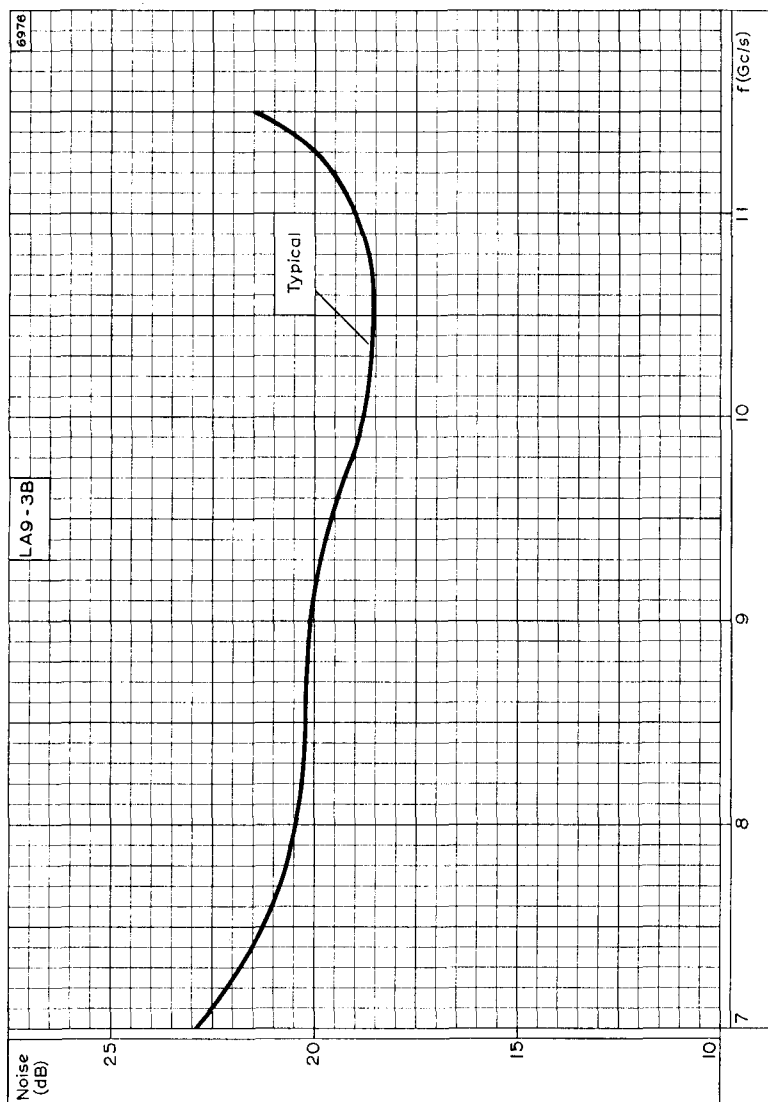
TYPICAL GAIN PLOTTED AGAINST FREQUENCY

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SATURATION POWER OUTPUT PLOTTED AGAINST FREQUENCY



TYPICAL NOISE FACTOR PLOTTED AGAINST FREQUENCY