

REFLEX KLYSTRON

Frequency: 'X' band, mechanical tuning

Output power: 37mW minimum

Construction: Metal, with integral external waveguide tuning

Application: Local oscillator

KS9-30

PRELIMINARY DATA

CHARACTERISTICS

	Min.	Max.	
Mechanical tuning range	8.5	9.6	Gc/s
Mechanical tuning rate	150	200	Mc/s per turn
Electronic tuning range, between half power points at any frequency in the mechanical tuning range	40	—	Mc/s
Output power at any frequency in the mechanical tuning range with reflector voltage optimised ($V_{\text{resonator}}=300\text{V}$)	30	—	mW
Reflector voltage range inclusive of electronic tuning range ($V_{\text{resonator}}=300\text{V}$)	-80	-165	V
Frequency change with temperature	—	-200	kc/s per °C rise
*Frequency modulation under vibration of 10g applied to flange (50 to 1000c/s)	—	1.0	Mc/s

*Typical figure 200kc/s.

CATHODE

Indirectly heated

V_h		6.3	V
I_h max.		500	mA

TYPICAL OPERATION

f	8.5	9.0	9.6	Gc/s
$V_{\text{resonator}}$	300	300	300	V
$I_{\text{resonator}}$	30	30	30	mA
$V_{\text{reflector}}$	-95	-117	-145	V
$\dagger I_{\text{reflector}}$	0	0	0	μA
Electronic tuning range between half power points	59	57.5	41	Mc/s
P_{out}	37	43	38	mW
Electronic tuning rate	3.3	3.1	1.5	Mc/s per V

\dagger The internal resistance of the reflector power supply should not exceed 1M Ω .

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COOLING

Natural

LIMITING VALUES (absolute ratings)

	Min.	Max.	
$V_{\text{resonator}}$	—	350	V
$I_{\text{resonator}}$	—	52	mA
$V_{\text{reflector}}$	0	-500	V
$I_{\text{reflector}}$	—	5.0	μA
T_{shell}	—	200	$^{\circ}\text{C}$

MOUNTING POSITION

Any

OPERATING NOTES

1. The mechanical tuning range is covered by five turns of the tuning screw.
2. To avoid damage to the klystron the reflector potential must never become positive with respect to the cathode. The resonator voltage should be applied only after the reflector connection has been made.

WEIGHT

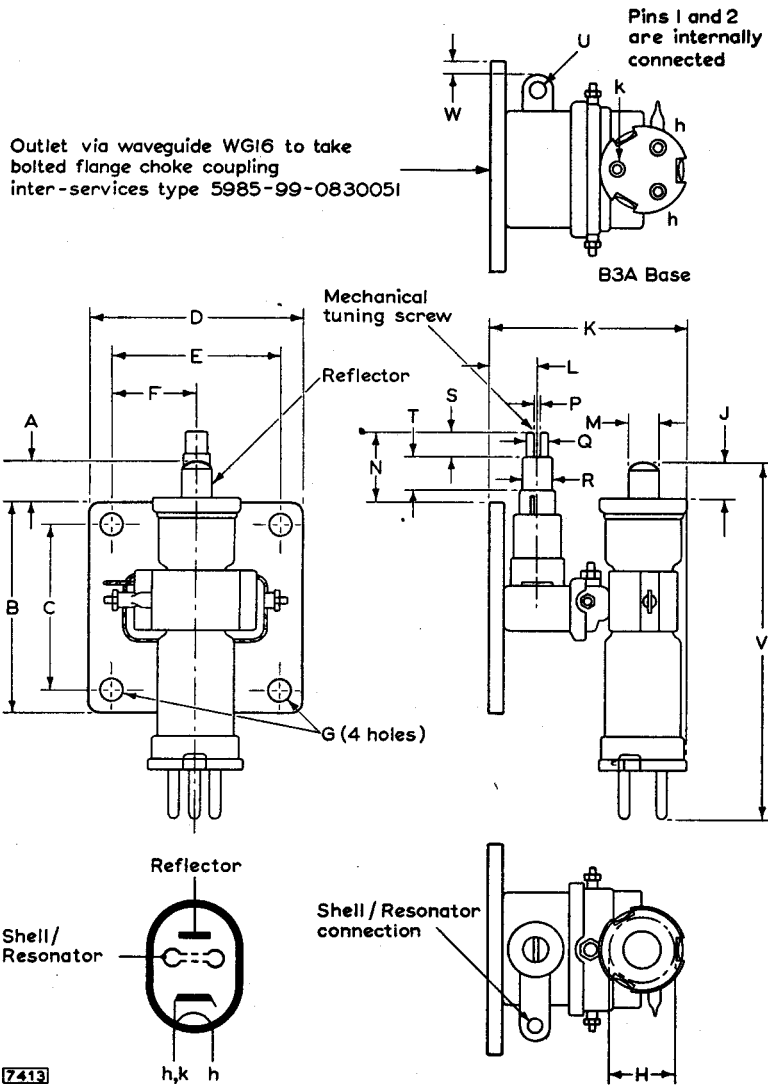
Weight of klystron

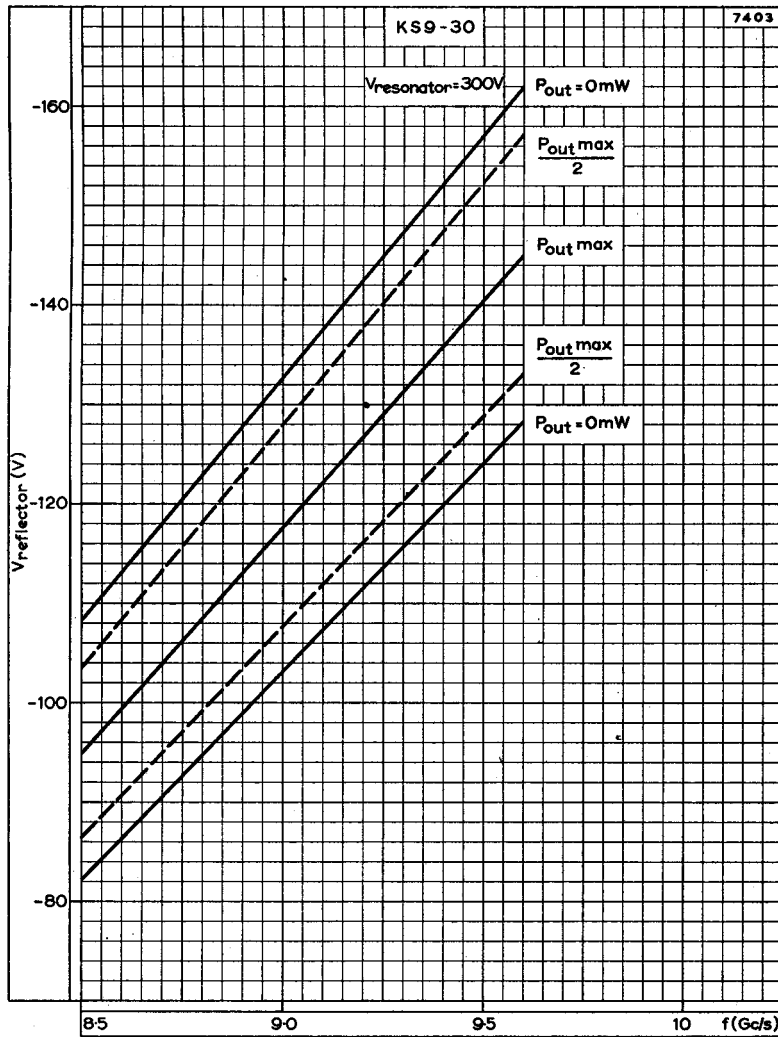
{ 5.0 oz
140 g

DIMENSIONS

	Inches	Millimetres	
A	0.449	11.4	max.
B	1.625 ± 0.010	41.28 ± 0.25	
C	1.280 ± 0.004	32.51 ± 0.10	
D	1.625 ± 0.010	41.28 ± 0.25	
E	1.220 ± 0.004	30.99 ± 0.10	
F	0.610 ± 0.024	15.5 ± 0.6	
G	0.219 ± 0.004	5.55 ± 0.10	
H	0.591	15	min.
J	0.303	7.7	max.
K	1.650	41.9	max.
L	0.402 ± 0.024	10.2 ± 0.6	
M	0.250 ± 0.005	6.35 ± 0.12	
N	0.673	17.1	max.
P	0.040 ± 0.010	1.02 ± 0.25	
Q	0.187 ± 0.010	4.75 ± 0.25	
R	0.248 ± 0.002	6.29 ± 0.06	
S	0.180 ± 0.020	4.57 ± 0.50	
T	0.250 ± 0.024	6.35 ± 0.60	
U	0.142 ± 0.007	3.60 ± 0.18	
V	3.000	76.2	max.
W	0.075 ± 0.024	1.9 ± 0.6	



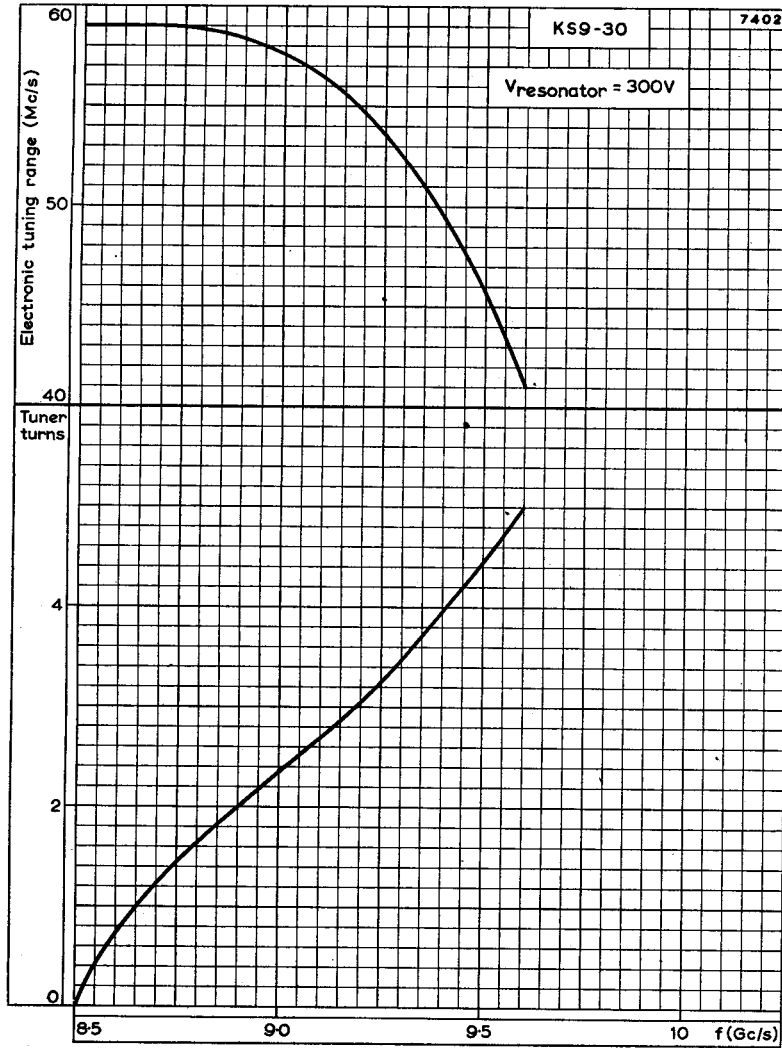




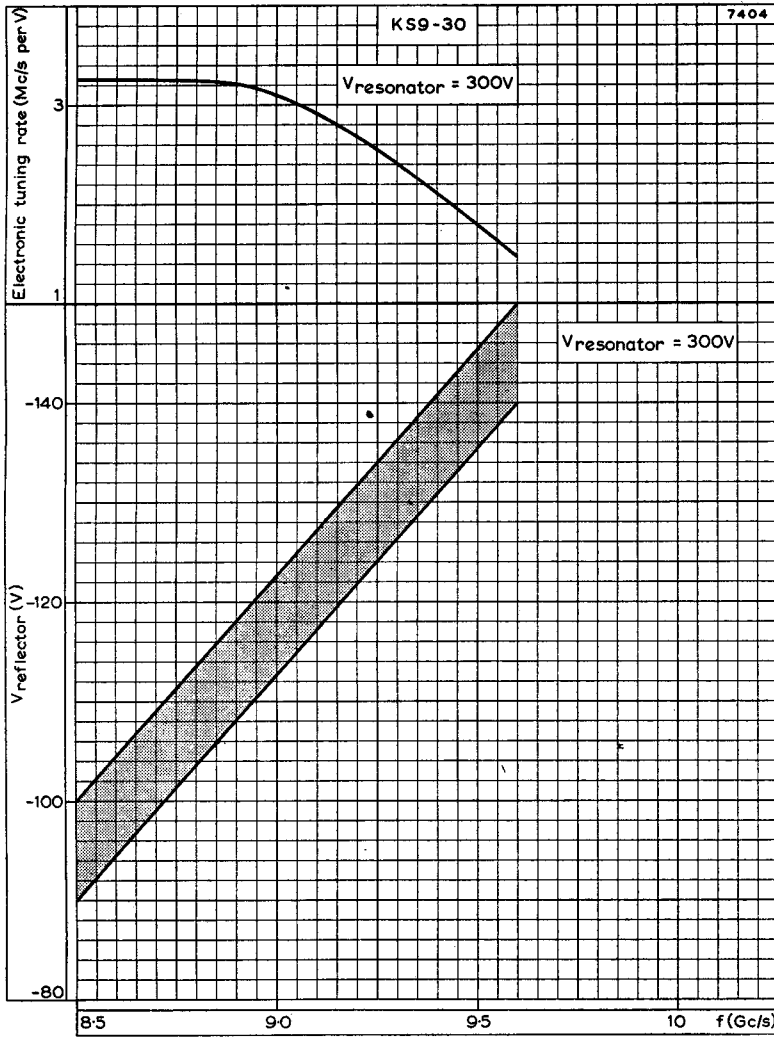
REFLECTOR VOLTAGE PLOTTED AGAINST FREQUENCY

KS9-30

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ELECTRONIC TUNING RANGE AND TUNER TURNS PLOTTED AGAINST FREQUENCY



ELECTRONIC TUNING RATE AND REFLECTOR VOLTAGE RANGE FOR MAXIMUM OUTPUT POWER PLOTTED AGAINST FREQUENCY