



Triode Type ACT 27

UHF AMPLIFIER AND OSCILLATOR

General. The ACT 27 is a forced-air-cooled transmitting triode, fitted with an indirectly heated cathode, suitable for use in common-grid co-axial line circuits as an oscillator, at frequencies up to 400 Mc/s and as an amplifier up to 600 Mc/s.

Cooling. The flow of air required for cooling the anode is 150 cu. ft. per minute at a pressure equal to 3-in. water gauge.

The external grid seal also requires air cooling. The volume of air necessary is approximately 20 cu. ft. per minute.

All cooling supplies must be in operation before applying any voltage to the valve and should continue for at least 2 minutes after removal of all voltages.

HT Switching. The heater must be on for at least four minutes before the application of the HT voltage.

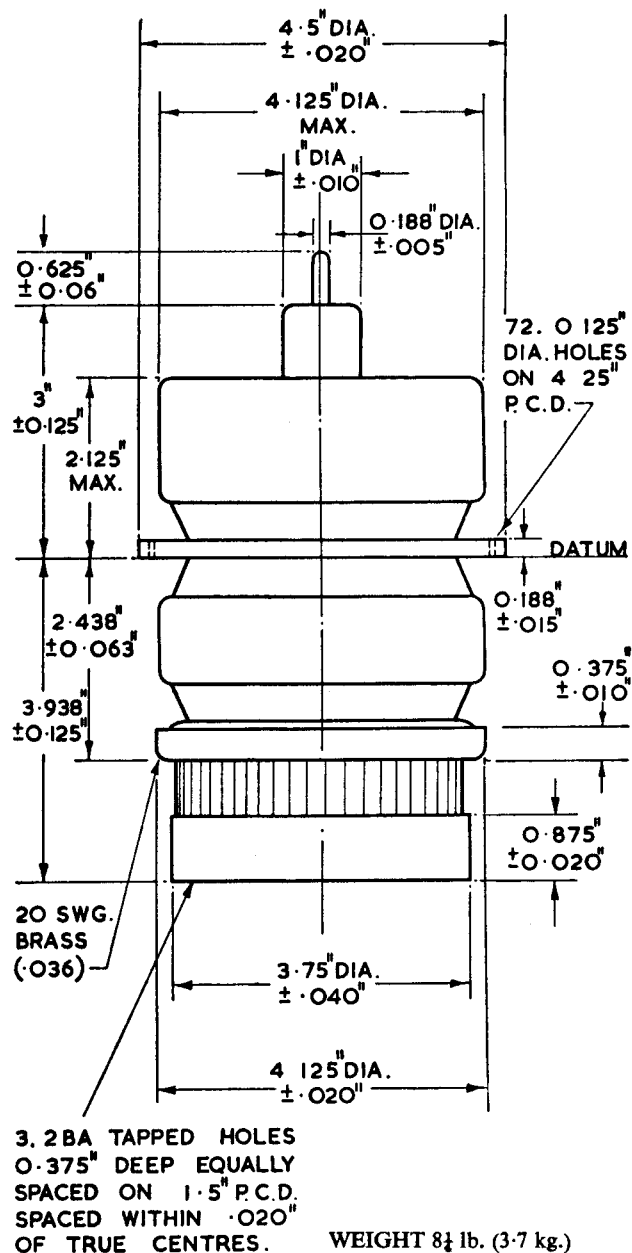
Mounting. The valve should be mounted in a vertical position. Rigid connections may be made to one electrode only.

The holes in the grid ring are provided for cooling and must not be used for fixing purposes.

Frequency. At frequencies above 350 Mc/s, the anode voltage must be reduced in accordance with the performance characteristics.

Dimensions of Circuit Elements. The following information about the dimensions of the circuits used to obtain the amplifier performance quoted overleaf, is given as a guide to designers.

Inside diameter of anode line	4½ in.			
Outside diameter of grid line	4 in.			
Characteristic impedance	10.5 Ω			
Frequency	200	400	400	600
	Mc/s.			
Line Length	34	14	46	37.5
	cm.			
Mode	λ	λ	3λ	3λ
	4	4	4	4



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APPROXIMATE DATA

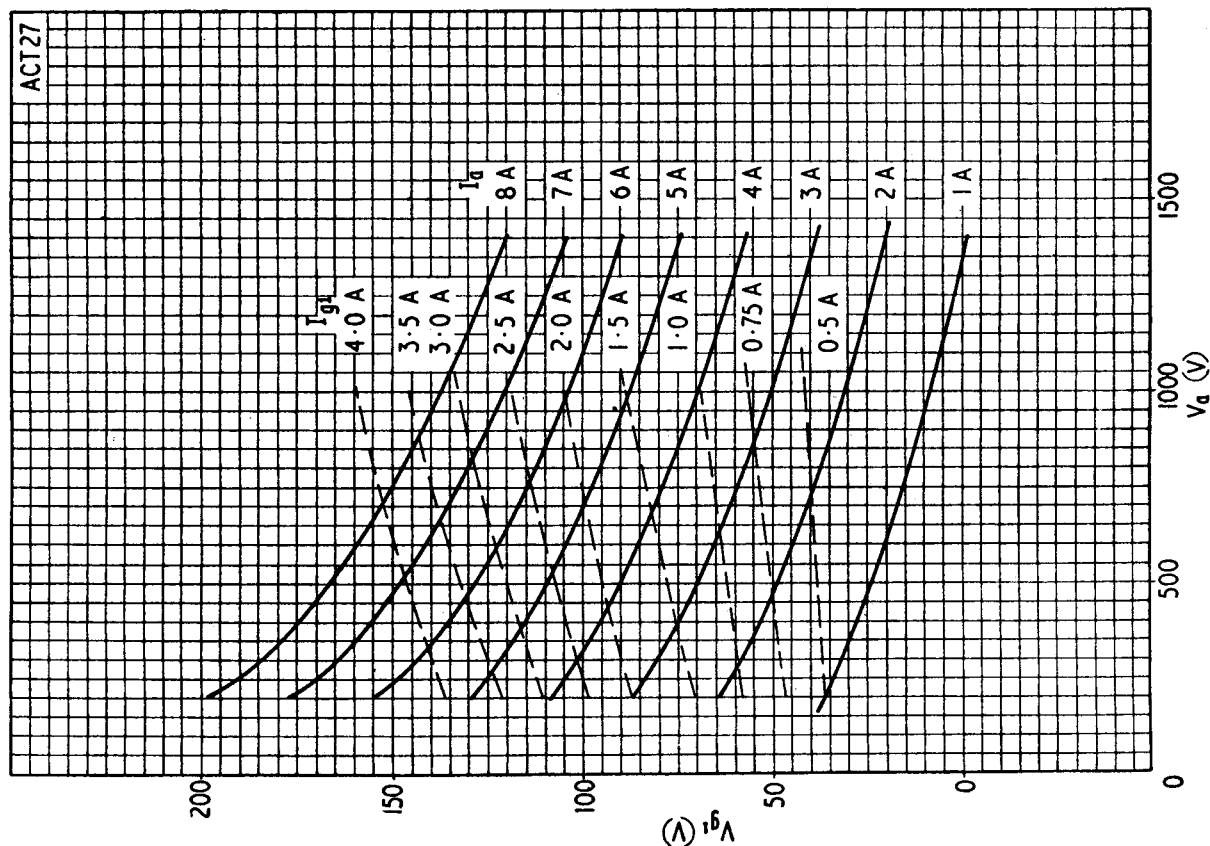
V_h	16	V
I_h (approx)	6.7	A
V_a (max)	1.5	kV
P_a (max)	1.5	kW
I_a (max)*	1.5	A
μ	} taken at V_a 1.5 kV {	50
g_m		40 mA/V
C_{a-g1}	28	pF
C_{a-k}	0.5	pF
C_{g1-k}	30	pF

*With Television waveforms the value of I_a may reach 2A under peak white conditions.

Typical Operation

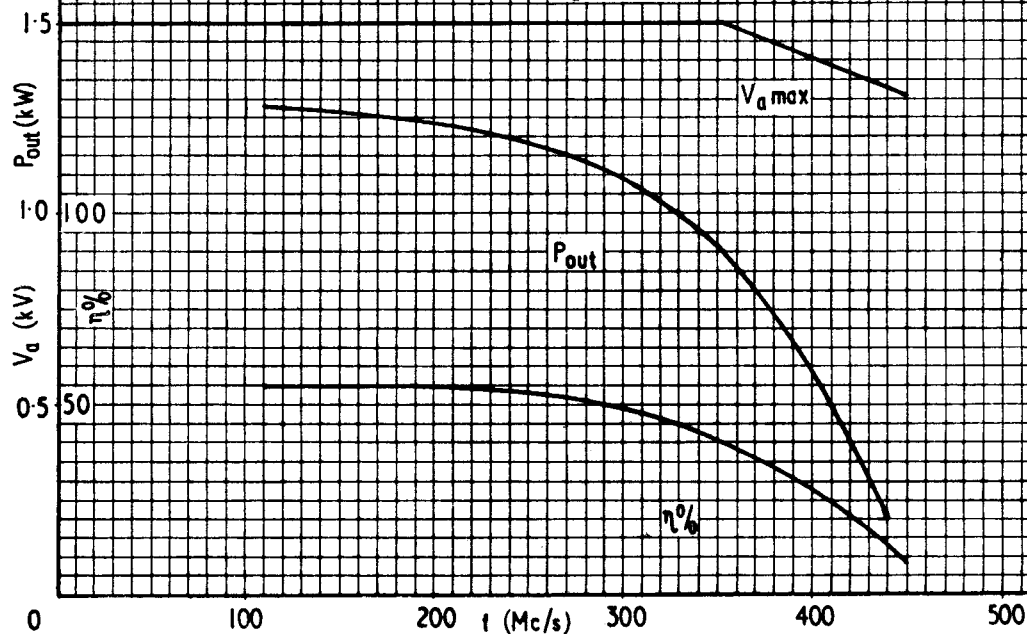
RF Power Amplifier. CW operation

f	200	400	Mc/s
V_a	1.5	1.4	kV
I_a	1.5	1.5	A
V_{g1}	-50	-25	V
I_{g1}	0.75	0.75	A
P_{out}	1.2	0.9	kW



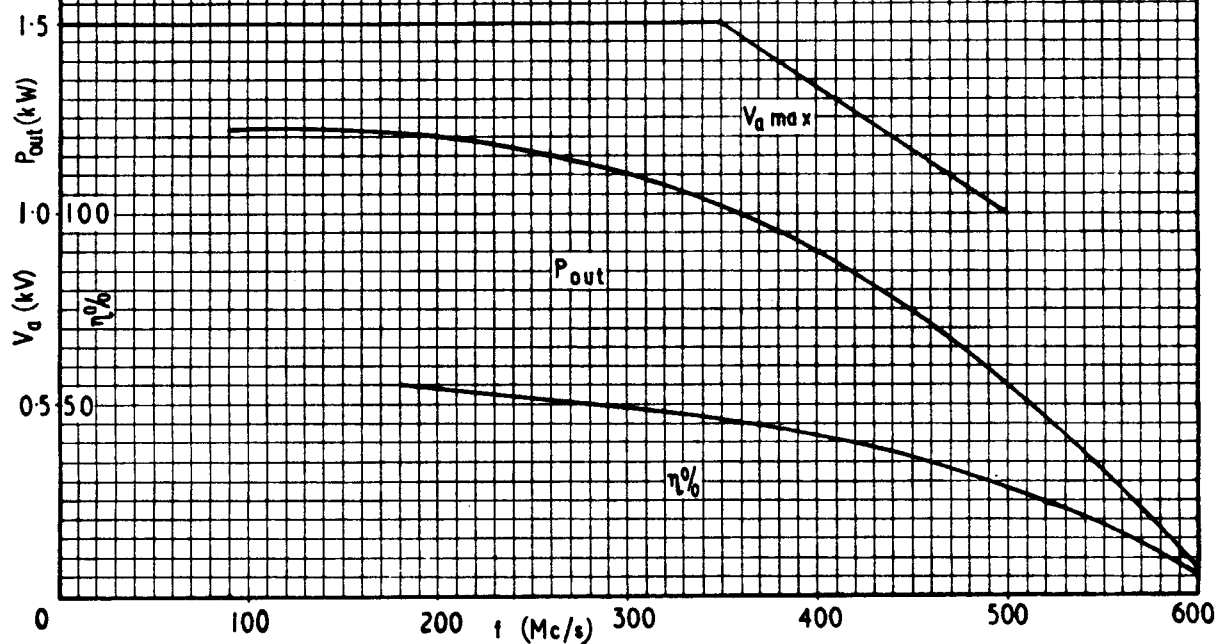
OSCILLATOR PERFORMANCE IN COMMON GRID CO-AXIAL CIRCUIT

(I_a max 1.5A)



AMPLIFIER PERFORMANCE IN COMMON GRID CO-AXIAL CIRCUIT

(I_a max 1.5A)





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