



Triode Type B 142

HF AMPLIFIER, OSCILLATOR AND MODULATOR

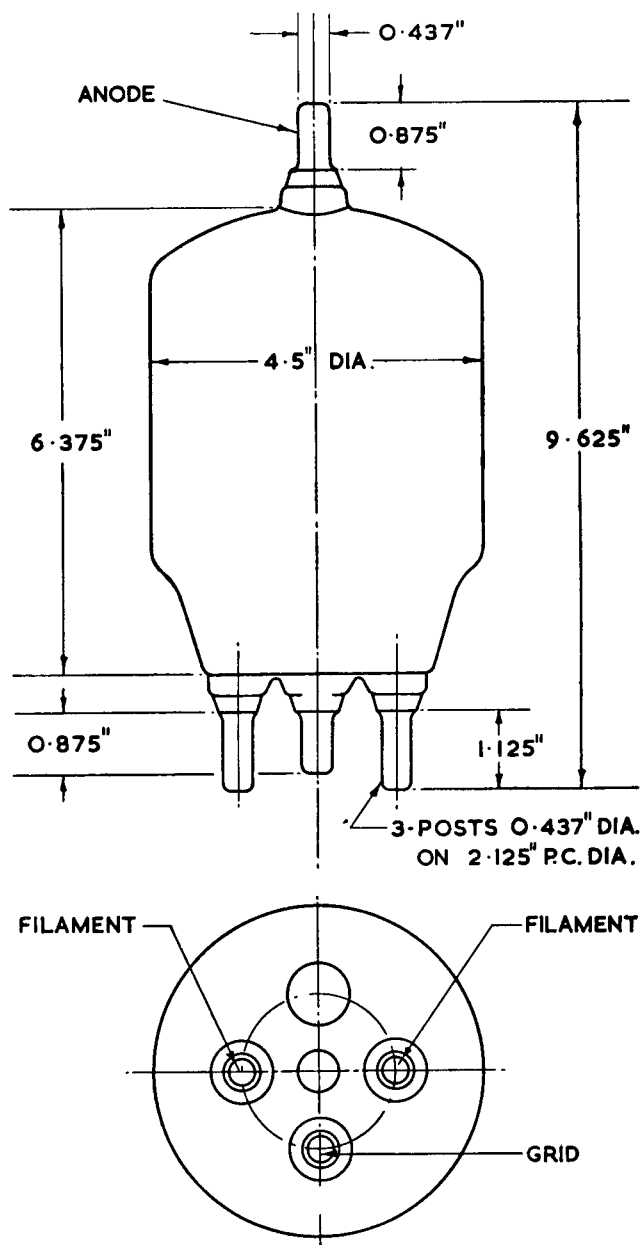
General. The valve type B 142 is a transmitting triode fitted with a thoriated tungsten filament. It is designed for use as high-frequency amplifier, oscillator, and Class B modulator.

Cooling. Requirements are indicated under Maximum Ratings for each class of service. Natural cooling means that adequate free circulation of air around the valve is necessary. When forced-air cooling is required, an air flow of 40 cu. ft. per minute from a 2-in. diameter nozzle directed vertically downwards on the anode seal is necessary. With forced-air cooling, bulb temperature in the vicinity of the anode seal must not exceed 145°C.

Mounting. Vertical. Filament posts up or down. Horizontal operation is permissible with the plane of electrodes vertical.

APPROXIMATE DATA

V_f	10	V
I_f	10	A
μ	35	
$f_{(max)}$ (at full ratings; natural cooling)	30	Mc/s
$f_{(max)}$ (at full ratings; forced cooling)	20	Mc/s
$f_{(max)}$ (at reduced rating, natural or forced cooling)	75	Mc/s
C_{a-g1}	5.6	pF
C_{a-k}	8.8	pF
C_{g1-k}	14	pF



WEIGHT $1\frac{1}{2}$ lb. (0.7 kg.)

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**(1) HF POWER AMPLIFIER AND OSCILLATOR
CLASS C TELEGRAPHY**

(Unmodulated, one valve, key down conditions)

Maximum permissible ratings

	Natural Cooling	Forced-Air Cooling	
V_a	3,000	4,000	V
V_{g1}	-500	-500	V
I_a	500	500	mA
I_{g1}	100	100	mA
P_a	1,250	1,800	W
p_a	300	400	W

Typical Operation

V_a	3,000	4,000	V
V_{g1}	(i) from a fixed supply of -200	-200	V
	(ii) via R_{g1}	3,500	2,650 Ω
	(iii) via R_{g1-k}	425	380 Ω
V_{g1} (pk)	360	375	V
I_a	415	450	mA
I_{g1} (approx)*	55	75	mA
P_{dr} (approx)*	20	26	W
P_{out} (approx)*	1,000	1,440	W

**(2) HF POWER AMPLIFIER
CLASS C**

*(Anode modulated, one valve, carrier conditions,
permissible modulation 100%)*

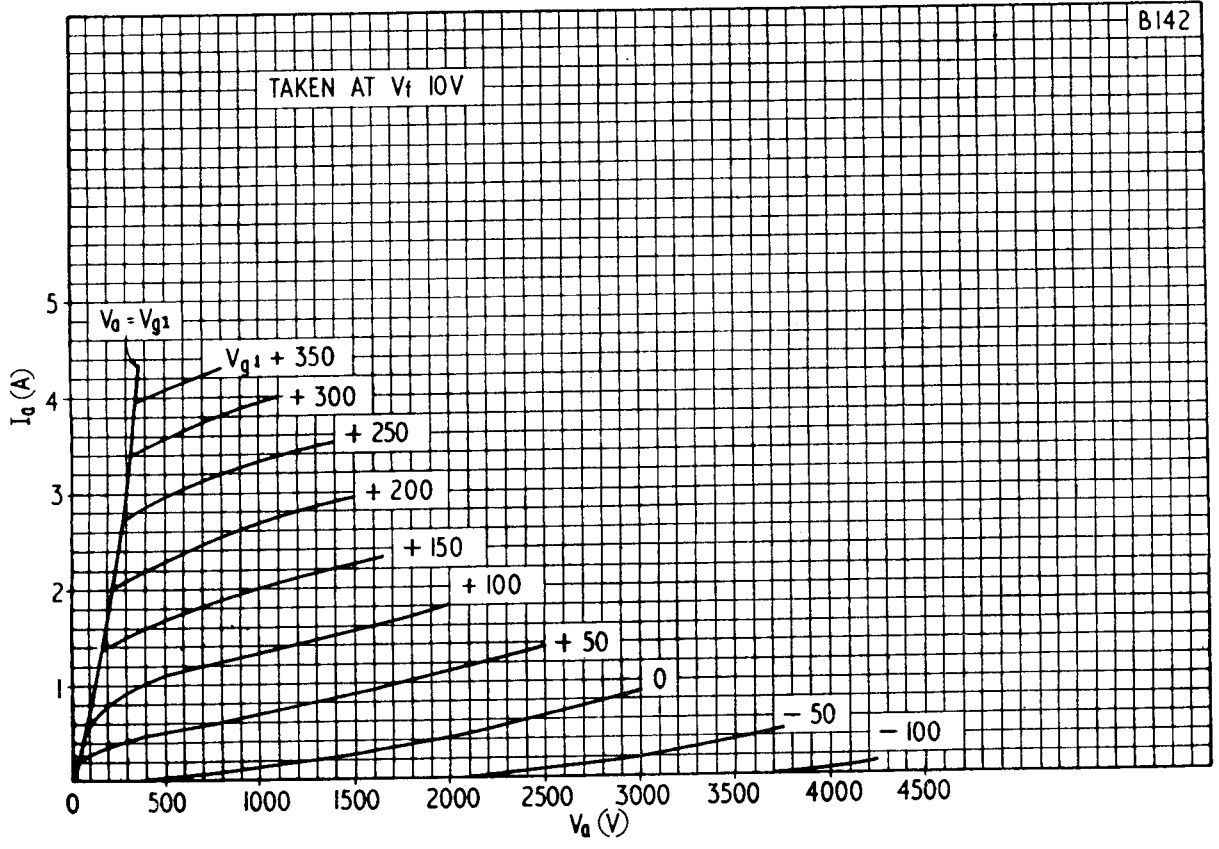
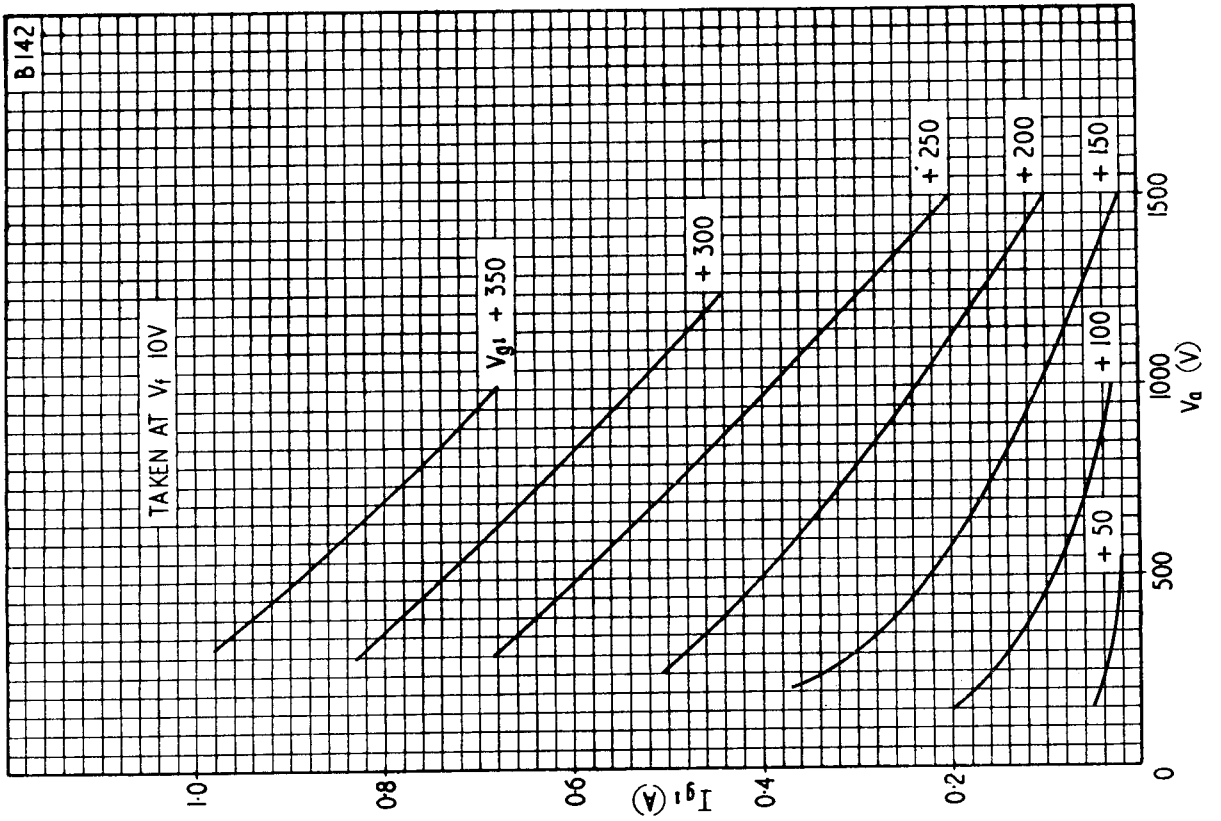
Maximum permissible ratings

	Natural Cooling	Forced-Air Cooling	
V_a	2,500	3,000	V
V_{g1}	-500	-500	V
I_a	400	450	mA
I_{g1}	100	100	mA
P_a	835	1,250	W
p_a	200	270	W

Typical Operation

V_a	2,500	3,000	V
V_{g1}	(i) from a fixed supply of -300	-300	V
	(ii) via R_{g1}	4,000	3,600 Ω
V_{g1} (pk)	460	490	V
I_a	335	415	mA
I_{g1} (approx)*	75	85	mA
P_{dr} (approx)*	30	37	W
P_{out} (approx)*	635	1,000	W

* Subject to wide variations depending on the impedance of the load circuit.





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