GENERAL ELECTRIC

Pliotron PT-841 - - Instructions

U.S. Army Signal Corps Tube Type VT-51

The 841 is a three-electrode high-vacuum tube particularly designed for use as a Class A voltage amplifier although it may also be used as a Class B or C amplifier.

TECHNICAL INFORMATION

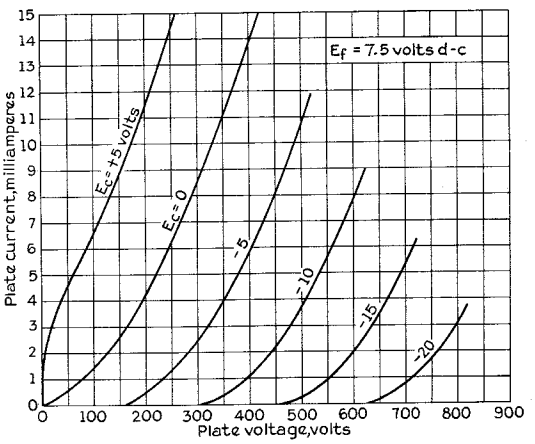
GENERAL CHARACTERISTICS:	
Filament Voltage, v	7.5
Filament Current, amp	1.25
Amplification Factor	30
Grid-plate Transconductance, mmhos, I_b = 2.2 ma	750
Direct Interelectrode Capacitances, μμf	
Grid-plate	7
Input	4
Output	3
Base or Terminal Description	Medium 4-pin Bayonet

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

	Typical Operation		Max Ratings
CLASS A A-F AMPLIFIER AND MODULATOR:			
D-c Plate Voltage, v	-	-	425
D-c Supply Voltage, v	425	1000	1250
Plate Dissipation, w	-	-	12
D-c Grid Voltage, v	-6	-9	-
Peak Grid Swing, approx v	6	9	-
D-c Plate Current, ma	0.7	2.2	-
Plate Resistance, ohms	63000	40000	-
Load Resistance, ohms	250000	250000	-
Voltage Output (5% second harmonic), v	126	225	-
CLASS B A-F POWER AMPLIFIER (TWO TUBES):			
D-c Plate Voltage, v	350	425	425
Max Signal Plate Current (per tube)§, ma	-	-	60
D-c Max Signal Plate Input (per tube)§, w	-	-	25
Plate Dissipation (per tube)§, w	-	-	15
D-c Grid Voltage, v	-5	-5	-
Peak A-f Grid Input Voltage, v	176	180	-
Zero Signal Plate Current, ma	7	13	-
Max Signal Plate Current, ma	114	120	-
Max Signal Driving Power, approx w	3.2	3.6	-
Effective Load (plate to plate), ohms	5200	7000	-
Max Signal Plate Power Output, w	21	23	-

§ Averaged over any audio-frequency cycle

*Superseding GEI-9226A



Average Values of Plate Current vs Plate Voltage for Pliotron Tube PT-841

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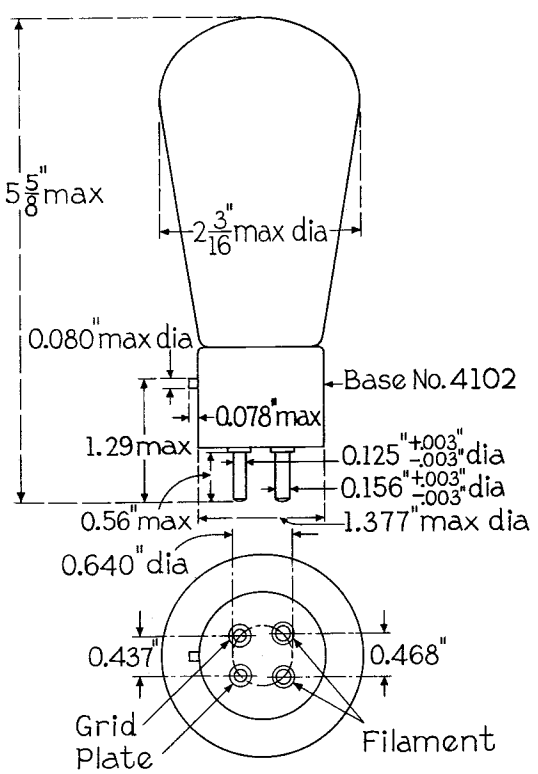

Outline Pliotron PT-841

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	Typical Operation		Max Ratings
CLASS B R-F POWER AMPLIFIER:			
(Carrier conditions per tube for use with a maximum modulation factor of 1.0)			
D-c Plate Voltage, v	350	450	450
D-c Grid Voltage, v	-12	-15	-
D-c Plate Current, ma	45	45	50
Plate Input, w	-	-	22.5
Plate Dissipation, w	-	-	15
Peak R-f Grid Input Voltage, v	60	60	-
D-c Grid Current, approx ma	4	4	-
Driving Power†, approx w	3.5	3.5	-
Plate Power Output, w	425	6	-

† At crest of audio-frequency cycle

	Typical Operation		Max Ratings
CLASS C R-F POWER AMPLIFIER AND OSCILLATOR, PLATE MODULATED:			
(Carrier conditions per tube for use with a maximum modulation factor of 1.0)			
D-c Plate Voltage, v	250	350	350
D-c Grid Voltage, v	-40	-47	-200
D-c Plate Current, ma	50	50	60
D-c Grid Current, approx ma	15	15	20
Plate Input, w	-	-	21
Plate Dissipation, w	-	-	10
Peak R-f Grid Input Voltage, approx v	127	130	-
Driving Power, approx w	2	2	-
Plate Power Output	7	11	-

	Typical Operation		Max Ratings
CLASS C R-F POWER AMPLIFIER AND OSCILLATOR:			
(Key down conditions per tube without modulation)‡			
D-c Plate Voltage, v	350	450	450
D-c Grid Voltage, v	-30	-34	-200
D-c Plate Current, ma	50	50	60
D-c Grid Current, approx ma	15	15	20
Plate Input, w	-	-	27
Plate Dissipation, w	-	-	15
Peak R-f Grid Input Voltage, approx v	115	120	-
Driving Power, approx w	1.8	1.8	-
Plate Power Output, w	11	15	-

‡ Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions

The tube should be mounted so as to operate in an upright position with the filament end down.

The normal value of grid leak, when the tube is used as an oscillator or r-f power amplifier (Class C), is in the neighborhood of 5000 ohms, although this may be replaced by a suitable fixed bias. If self bias is used the cathode resistor should be approximately 500 ohms.

The maximum ratings apply only at frequencies below 6 megacycles. For operation at higher frequencies adequate ventilation and normal ambient temperatures must be maintained, and the plate voltage must be reduced as indicated.

Frequency, Megacycles	6	45	170
Percentage of Maximum Rated Plate Voltage and Plate Input	100	75	50

The resonant frequency of the grid-plate circuit is approximately 170 megacycles.