

42
Description and Rating
POWER-AMPLIFIER PENTODE

GENERAL DESCRIPTION

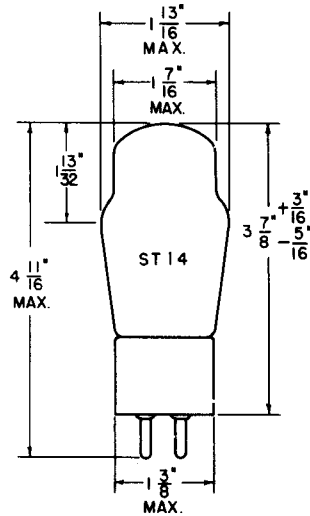
Principal Application: The 42 is a heater-cathode type pentode amplifier tube designed for use as a power-amplifier in the audio-output stage of a-c or

battery-operated equipment. Electrically the 42, 6F6 and 6F6-GT are identical and the 42 and 2A5 are the same except for heater rating.

Cathode: Coated Unipotential
Heater Voltage (A-C or D-C) 6.3 Volts
Heater Current 0.7 Ampere

Envelope: ST-14 Glass
Base: A6-12 Medium 6-Pin Phenolic
Mounting Position: Any

PHYSICAL DIMENSIONS

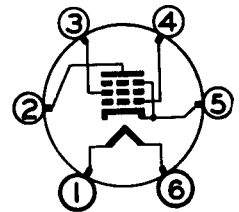


RMA 14-1

TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Plate
- Pin 3 - Grid No. 2 (Screen)
- Pin 4 - Grid Number 1
- Pin 5 - Cathode and Grid No. 3
- Pin 6 - Heater

BASING DIAGRAM



RMA 6B
BOTTOM VIEW

MAXIMUM RATINGS

	Pentode		Triode §		
	Design Center	Absolute	Design Center	Absolute	
Plate Voltage	375	415	350	385	Volts
Screen (Grid No. 2) Voltage	285	315	---	---	Volts
Screen Supply Voltage	375	415	---	---	Volts
Plate Dissipation	11.0	12.1	10	11	Watts
Screen Dissipation	3.75	4.13	---	---	Watts
D-C Heater-Cathode Voltage	90	100	90	100	Volts

§ With grid number 2 (screen) connected to plate.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A AMPLIFIER - PENTODE CONNECTION

	Fixed Bias		Cathode Bias		
Heater Voltage	6.3	6.3	6.3	6.3	Volts
Plate Voltage	250	285	250	285	Volts
Screen Voltage	250	285	250	285	Volts
Grid Bias Voltage **	-16.5	-20	---	---	Volts
Cathode Bias Resistor	---	---	410	440	Ohms
Peak A-F Grid Voltage	16.5	20	16.5	20	Volts
Plate Resistance (Approx)	80000	78000	---	---	Ohms
Transconductance	2500	2550	---	---	Micromhos
Zero-Signal Plate Current	34	38	34	38	Milliamperes
Zero-Signal Screen Current	6.5	7.0	6.5	7.0	Milliamperes
Maximum-Signal Plate Current	36	40	35	38	Milliamperes
Maximum-Signal Screen Current	10.5	13	9.7	12	Milliamperes
Load Resistance	7000	7000	7000	7000	Ohms
Total Harmonic Distortion	8	9	8.5	9	Per Cent
Maximum-Signal Power Output	3.2	4.8	3.1	4.5	Watts

CLASS A AMPLIFIER - TRIODE CONNECTION §

	Fixed Bias	Cathode Bias	
Heater Voltage	6.3	6.3	Volts
Plate Voltage	250	250	Volts
Grid Bias Voltage **	-20	---	Volts
Cathode Bias Resistor	---	650	Ohms
Peak A-F Grid Voltage	20	20	Volts
Plate Resistance (Approx)	2600	---	Ohms
Transconductance	2600	---	Micromhos
Zero-Signal Plate Current	31	31	Milliamperes
Maximum-Signal Plate Current	34	32	Milliamperes
Load Resistance	4000	4000	Ohms
Total Harmonic Distortion	6.5	6.5	Per Cent
Maximum-Signal Power Output	0.85	0.80	Watt

PUSH-PULL CLASS A AMPLIFIER - PENTODE CONNECTION

	Fixed Bias	Cathode Bias	
Heater Voltage	6.3	6.3	Volts
Plate Voltage	315	315	Volts
Screen Voltage	285	285	Volts
Grid Bias Voltage **	-24	---	Volts
Cathode Bias Resistor	---	320	Ohms
Peak A-F Grid to Grid Voltage	48	58	Volts
Zero-Signal Plate Current	62	62	Milliamperes
Zero-Signal Screen Current	12	12	Milliamperes
Maximum-Signal Plate Current	80	73	Milliamperes
Maximum-Signal Screen Current	19.5	18	Milliamperes
Effective Load Resistance (Plate to Plate)	10000	10000	Ohms
Total Harmonic Distortion	4	3	Per Cent
Maximum-Signal Power Output	11	10.5	Watts

§ With grid number 2 (screen) connected to plate.

** The d-c resistance in the grid circuit, under maximum rated conditions, should not exceed 0.1 megohm for fixed bias operation and 0.5 megohm for cathode bias operation.

Unless otherwise specified the values given are for two tubes.

PUSH-PULL CLASS AB₂ AMPLIFIER ##

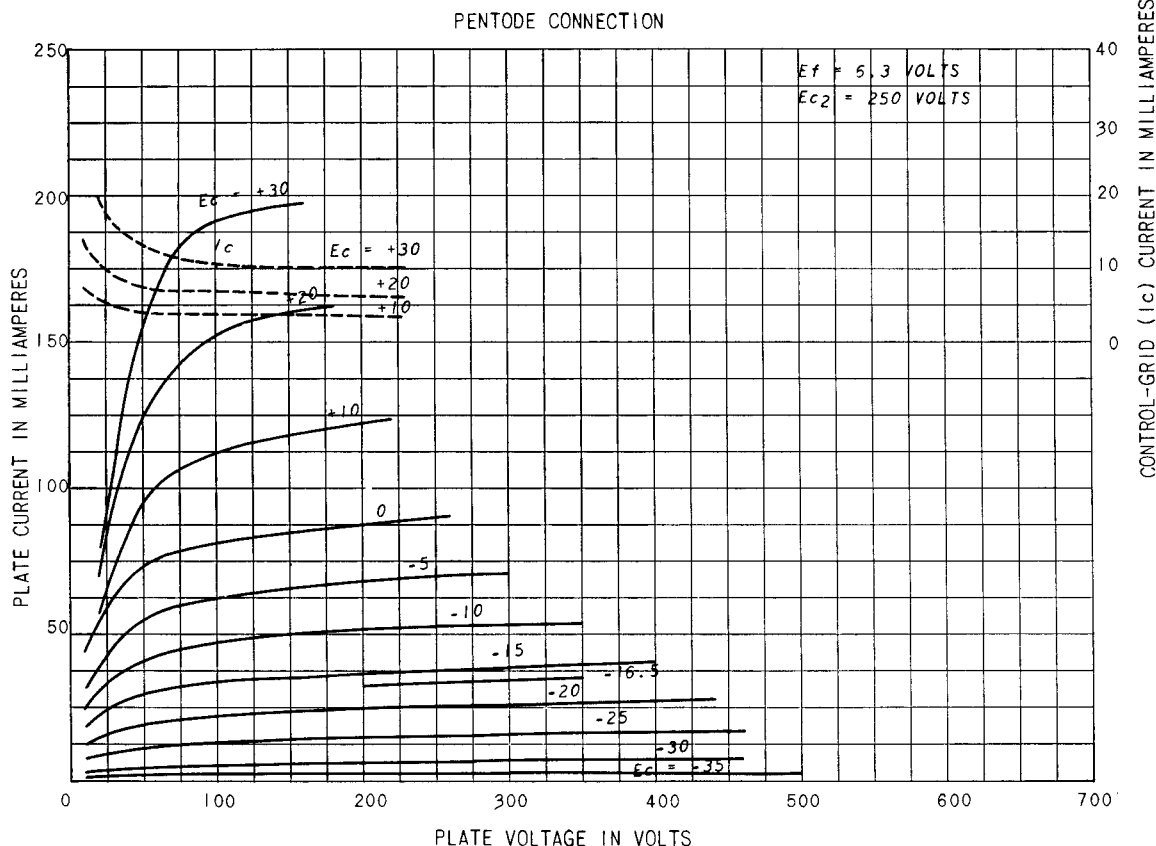
	Pentode Connection		Triode Connection §		
	Fixed Bias	Cathode Bias	Fixed Bias	Cathode Bias	
Heater Voltage	6.3	6.3	6.3	6.3	Volts
Plate Voltage	375	375	350	350	Volts
Screen Voltage	250	250	---	---	Volts
Grid Bias Voltage **	-26	---	-39	---	Volts
Cathode Bias Resistor	---	340	---	730	Ohms
Peak A-F Grid to Grid Voltage	82	94	123	132	Volts
Zero-Signal Plate Current	34	54	48	50	Milliamperes
Zero-Signal Screen Current	5	8	---	---	Milliamperes
Maximum-Signal Plate Current	82	77	92	60	Milliamperes
Maximum-Signal Screen Current	19.5	18	---	---	Milliamperes
Effective Load Resistance (Plate to Plate)	10000	10000	6000	10000	Ohms
Total Harmonic Distortion	3.5	5	2	3	Per Cent
Maximum-Signal Power Output	18.5	19	13	9	Watts

§ With grid number 2 (screen) connected to plate.

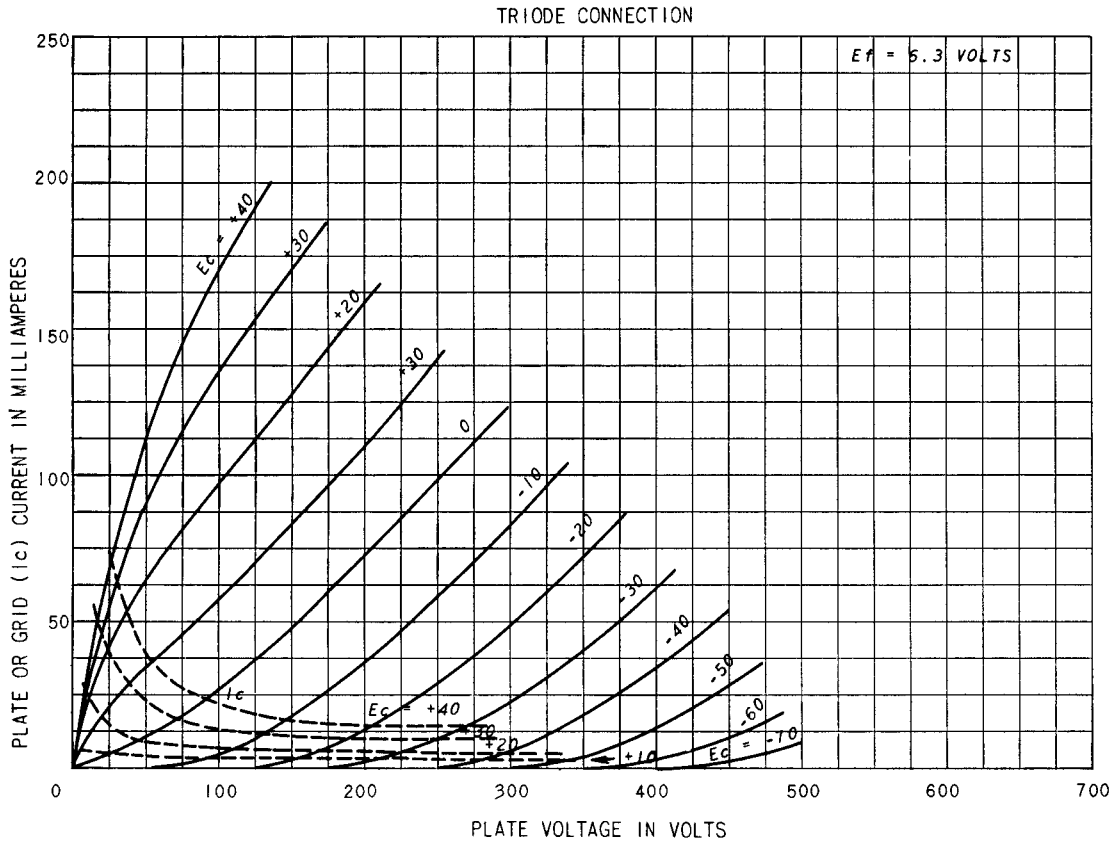
** The d-c resistance in the grid circuit, under maximum rated conditions, should not exceed 0.1 megohm for fixed bias operation and 0.5 megohm for cathode bias operation.

Unless otherwise specified the values given are for two tubes.

AVERAGE PLATE CHARACTERISTICS



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Electronics Department



Schenectady, N. Y.