

—PRODUCT INFORMATION—

Beam Pentode

6550-A

FOR AF POWER-AMPLIFIER APPLICATIONS

- AUDIO POWER OUTPUT
- UP TO 100 WATTS OUTPUT - 2 TUBES IN PUSH-PULL
- 42 WATTS PLATE DISSIPATION

The 6550-A is a beam-power pentode primarily designed for use in audio-frequency power-amplifier applications. It carries a 42 watt plate dissipation rating which provides for push-pull amplifier designs up to 100 watts output. The 6550-A features a straight sided T-14 envelope and may be used as a direct replacement for the 6550.

GENERAL

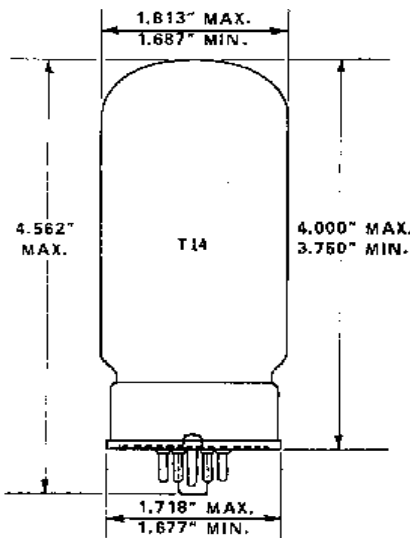
ELECTRICAL

Cathode - Coated Unipotential
 Heater Characteristics and Ratings
 Heater Voltage, AC or DC 6.3±0.6 Volts
 Heater Current 1.6 Amperes
 Direct Interelectrode Capacitances:
 Grid-Number 1 to Plate: (g1 to p) 0.8 pf
 Input: g1 to (h+k+g2+b.p.) 15 pf
 Output: p to (h+k-g2+b.p.) 10 pf

MECHANICAL

Mounting Position - Any
 Envelope - T-14, Glass
 Base - B7-99, Large-Wafer Octal with Sleeve Low Loss 7-Pin Micano
 Outline Drawing - EIA 14-18
 Maximum Diameter 1.813 Inches
 Minimum Bulb Diameter 1.687 Inches
 Maximum Over-all Length 4.562 Inches
 Maximum Seated Height 4.000 Inches
 Minimum Seated Height 3.750 Inches

PHYSICAL DIMENSIONS

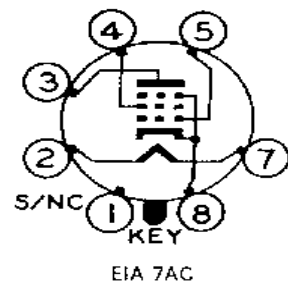


EIA 14-18

TERMINAL CONNECTIONS

- Pin 1 - No Connection or Base Shell
- Pin 2 - Heater
- Pin 3 - Plate
- Pin 4 - Grid-Number 2 (Screen)
- Pin 5 - Grid-Number 1
- Pin 7 - Heater
- Pin 8 - Cathode and Beam Plates

BASING DIAGRAM



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MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Connection	Triode Connection †	
DC Plate Voltage.....	660	500	Volts
DC Screen Voltage.....	440 [§]	---	Volts
Positive DC Grid-Number 1 Voltage.....	0	0	Volts
Negative DC Grid-Number 1 Voltage.....	300	300	Volts
Plate Dissipation.....	42	42	Watts
Screen Dissipation (Average).....	6.0	---	Watts
Screen Dissipation (Peak).....	10	---	Watts
DC Cathode Current.....	190	190	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component.....	100	100	Volts
Total DC and Peak.....	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak.....	300	300	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias.....	0.05	0.05	Megohms
With Cathode Bias.....	0.25	0.25	Megohms
Bulb Temperature at Hottest Point *.....	250	250	°C

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, PENTODE CONNECTION

Plate Voltage.....	250	Volts
Screen Voltage.....	250	Volts
Grid-Number 1 Voltage.....	-14	Volts
Plate Current.....	140	Milliamperes
Screen Current.....	12	Milliamperes
Transconductance.....	11,000	Micromhos
Plate Resistance, approximate.....	15,000	Ohms
Triode Amplification Factor.....	8	
Grid-Number 1 Voltage		
I _b = 1.0 Milliamperes.....	-40	Volts

CLASS A₁ AUDIO-AMPLIFIER, SINGLE TUBE

DC Plate Voltage.....	250	400	Volts
DC Screen Voltage.....	250	225	Volts
DC Grid-Number 1 Voltage.....	-14	-16.5	Volts
Peak AF Grid-Number 1 Voltage.....	14	16.5	Volts
Zero-Signal DC Plate Current.....	140	87	Milliamperes
Maximum-Signal DC Plate Current.....	150	105	Milliamperes
Zero-Signal DC Screen Current.....	12	4.0	Milliamperes
Maximum-Signal DC Screen Current.....	22	14	Milliamperes
Load Resistance.....	1,500	3,000	Ohms
Total Harmonic Distortion.....	7	13.5	Percent
Maximum-Signal Power Output.....	12.5	20	Watts

CHARACTERISTICS AND TYPICAL OPERATION (Cont'd)

PUSH-PULL CLASS AB₁ AMPLIFIER, VALUES FOR TWO TUBES, PENTODE CONNECTION

	Cathode Bias		Fixed Bias		
DC Plate Voltage	400	400	450	600	Volts
DC Screen Voltage	310	270	310	300	Volts
DC Grid-Number 1 Voltage	---	-23	-29.5	-32.5	Volts
Cathode-Bias Resistor	140	---	---	---	Ohms
Peak AF Grid-to-Grid Voltage	43	46	58	65	Volts
Zero-Signal DC Plate Current	170	170	150	100	Milliamperes
Maximum-Signal DC Plate Current	185	275	295	270	Milliamperes
Zero-Signal DC Screen Current	10	9.0	9.0	5.0	Milliamperes
Maximum-Signal DC Screen Current	25	35	38	33	Milliamperes
Effective Load Resistance, Plate-to-Plate	5,000	3,500	3,500	5,000	Ohms
Total Harmonic Distortion	0.7	0.6	1.5	3.0	Percent
Maximum-Signal Power Output	40	60	77	100	Watts

PUSH-PULL AUDIO-AMPLIFIER—ULTRA-LINEAR OPERATION, VALUES FOR TWO TUBES

SCREEN TAPPED AT 40% OF PRIMARY TURNS

	Cathode Bias		Fixed Bias		
	Class A1	Class AB1	Class A1	Class AB1	
DC Plate Voltage	395	395	450	450	Volts
DC Screen Voltage	395	395	450	450	Volts
DC Grid-Number 1 Voltage	---	---	-48	-48	Volts
Cathode-Bias Resistor	200	---	---	---	Ohms
Peak AF Grid-to-Grid Voltage	70	70	96	96	Volts
Zero-Signal DC Plate Current	170	170	150	150	Milliamperes
Maximum-Signal DC Plate Current	174	174	265	265	Milliamperes
Zero-Signal DC Screen Current	12.5	12.5	12	12	Milliamperes
Maximum-Signal DC Screen Current	23	23	38	38	Milliamperes
Effective Load Resistance, Plate-to-Plate	5,600	5,600	4,000	4,000	Ohms
Total Harmonic Distortion	1.5	1.5	2.4	2.4	Percent
Maximum-Signal Power Output	34	34	70	70	Watts

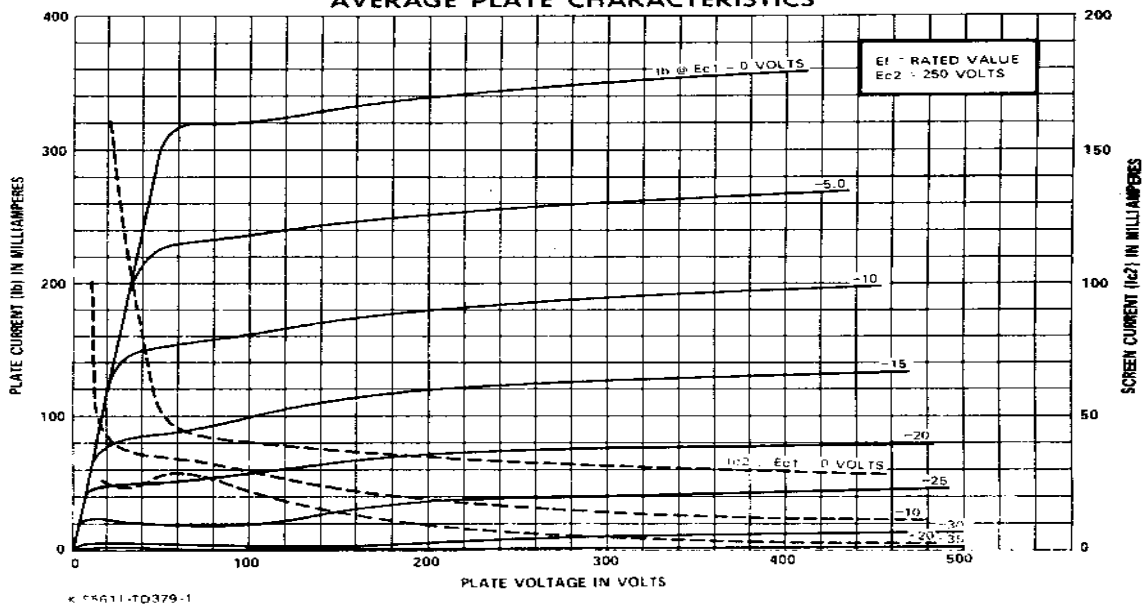
NOTES

- The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- Heater current of a bogey tube at $E_f = 6.3$ volts.
- ▲ Without external shield.
- ◆ With screen connected to plate.
- § The maximum screen voltage rating is 450 volts in push-pull circuits where the screen of each tube is connected to a tap on the plate winding of the output transformer.
- Measured with an infrared thermometer, Ircon Model 700 BC or equivalent, at an ambient temperature of 40° C.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an

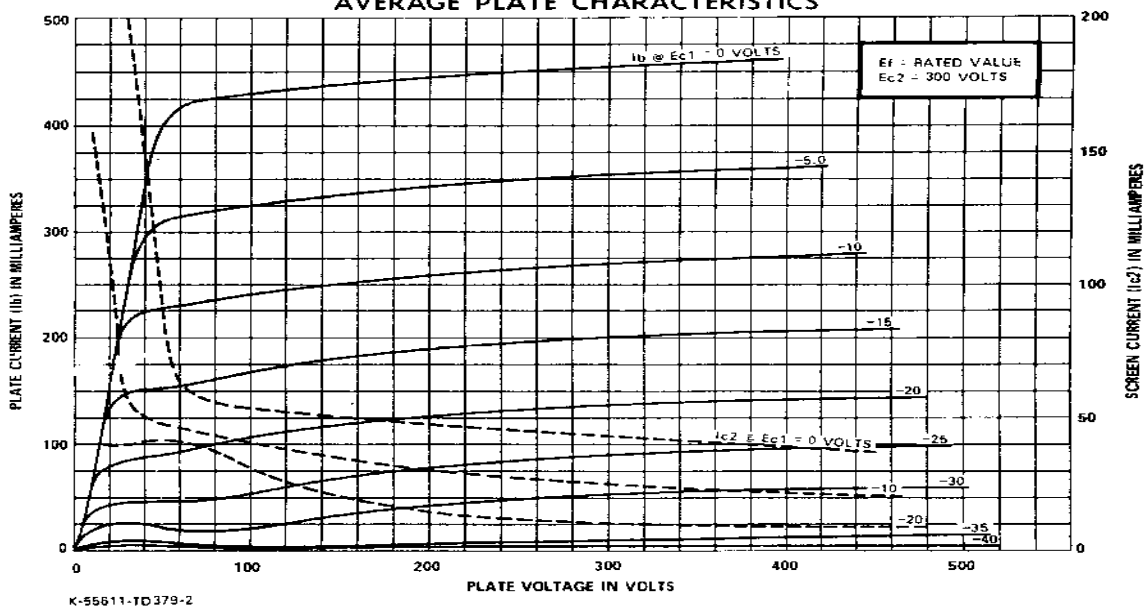
express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

AVERAGE PLATE CHARACTERISTICS



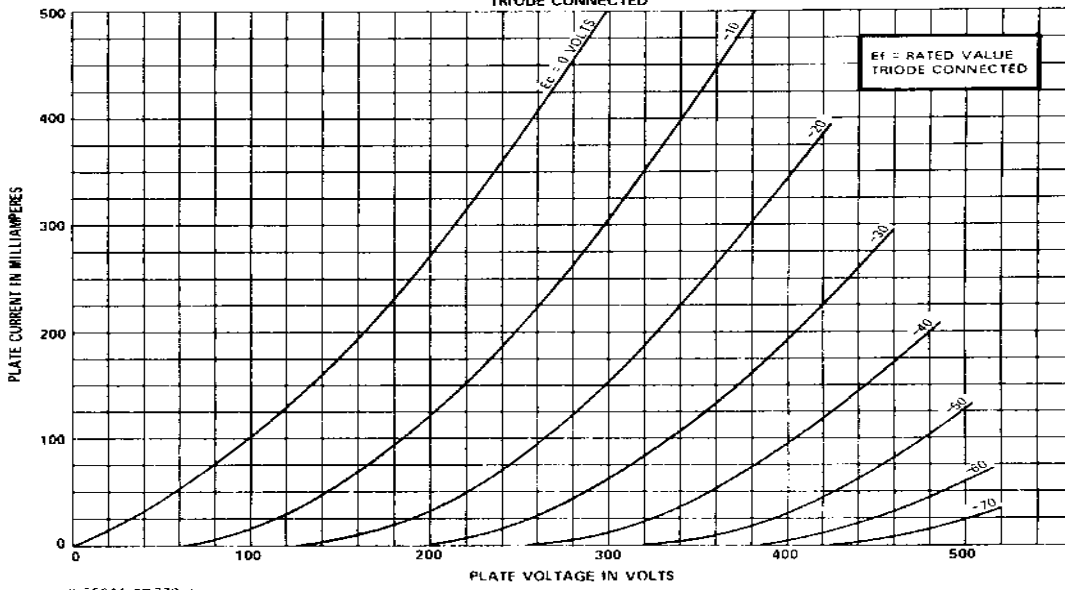
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AVERAGE PLATE CHARACTERISTICS

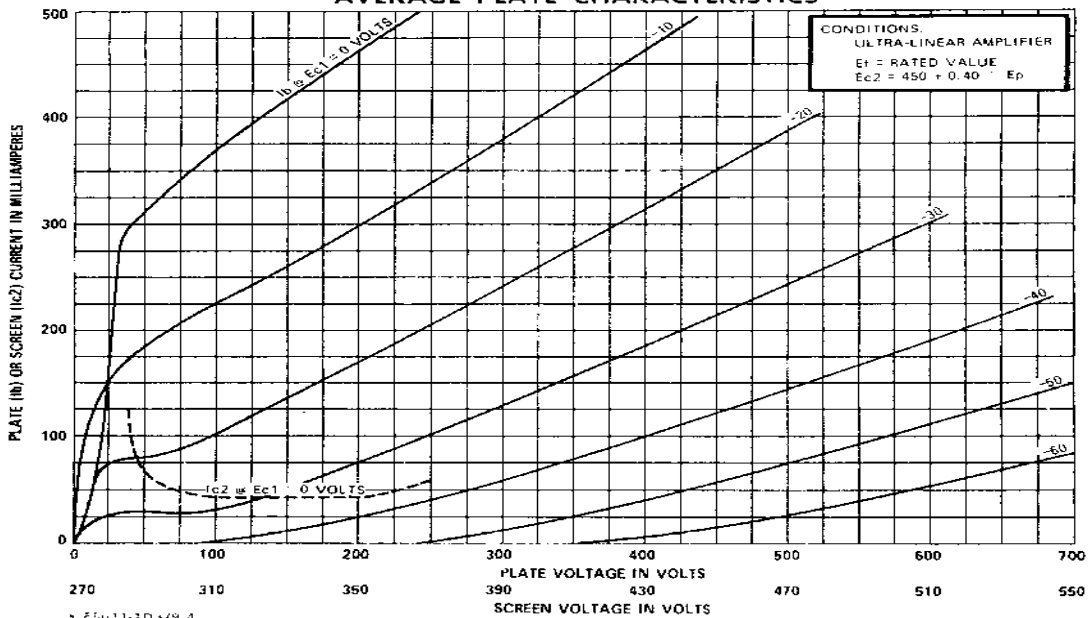


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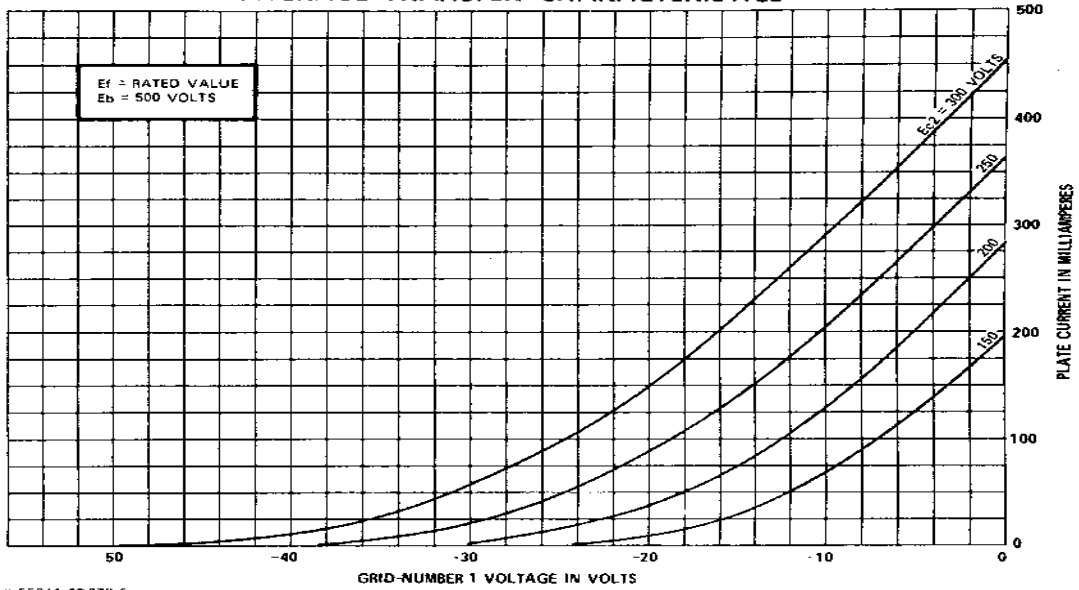
AVERAGE PLATE CHARACTERISTICS
TRIODE CONNECTED



AVERAGE PLATE CHARACTERISTICS

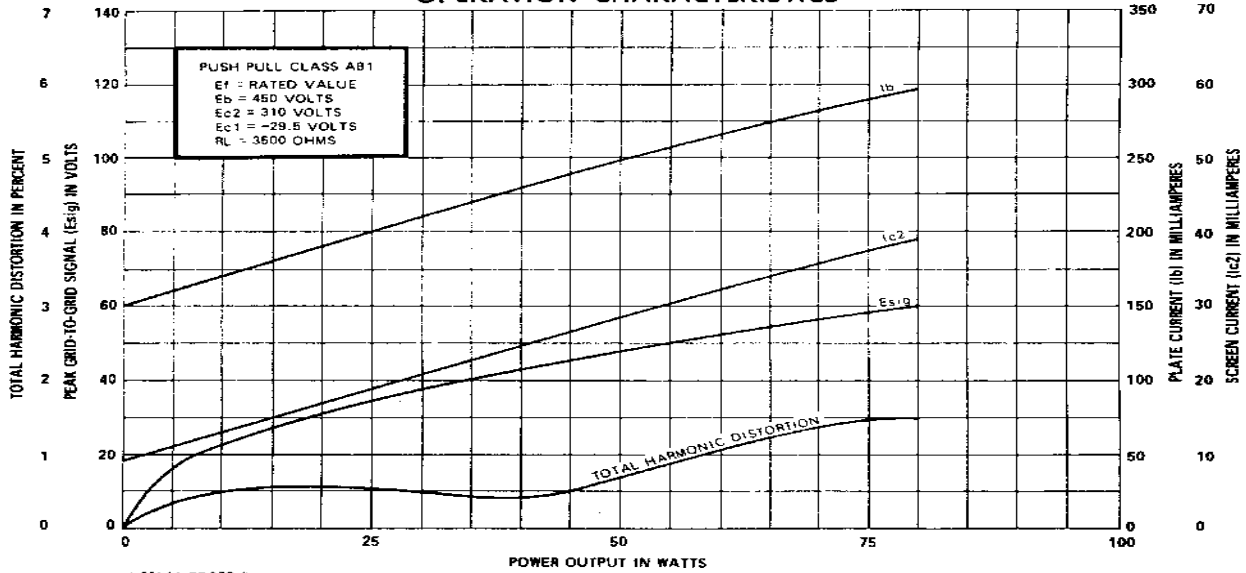


AVERAGE TRANSFER CHARACTERISTICS



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OPERATION CHARACTERISTICS

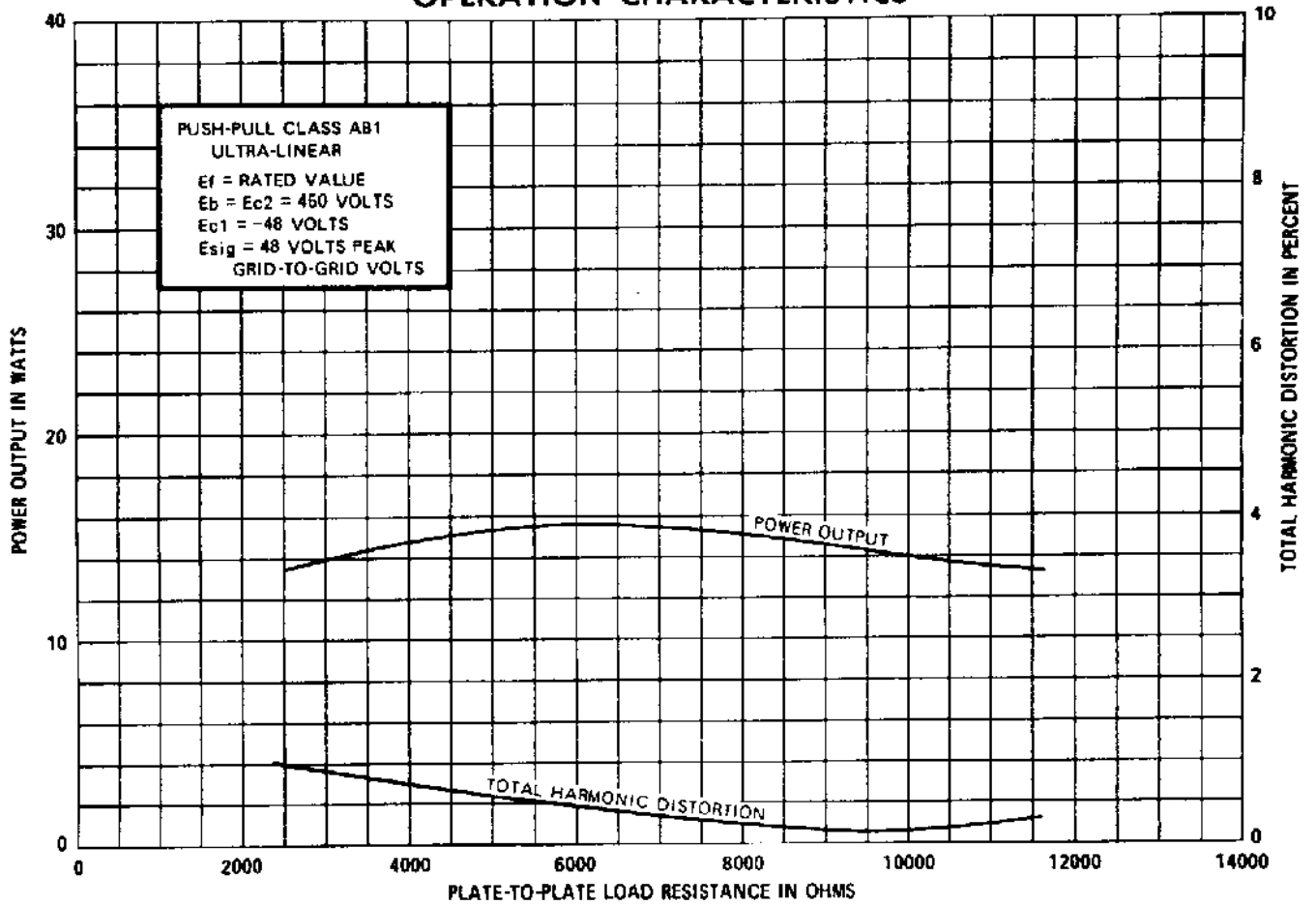


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OPERATION CHARACTERISTICS



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OPERATION CHARACTERISTICS

