



6BS8—4BS8

TWIN TRIODE

FOR VHF CASCODE AMPLIFIER APPLICATIONS

6BS8
4BS8
ET-T1355A
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9-57

DESCRIPTION AND RATING

The 6BS8 is a miniature, medium-mu twin triode designed for use as a VHF cascode amplifier. In this application, section two (pins 1, 2, and 3) is intended for the input section.

Except for heater ratings, the 4BS8 is identical to the 6BS8. In addition, the 4BS8 incorporates a controlled heater-warm-up characteristic which makes it especially suited for use in television receivers that employ series-connected heaters.

GENERAL

ELECTRICAL

| | | | |
|---|------------------|------------------|------------------|
| Cathode—Coated Unipotential | 4BS8 | 6BS8 | |
| Heater Voltage, AC or DC | 4.2 | 6.3 | Volts |
| Heater Current | 0.6 | 0.4 | Amperes |
| Heater Warm-up Time* | 11 | | Seconds |
| Direct Interelectrode Capacitances† | Section 1 | Section 2 | |
| Grid to Plate | 1.15 | 1.15 | $\mu\mu\text{f}$ |
| Input | 2.6 | | $\mu\mu\text{f}$ |
| Output | 1.35 | | $\mu\mu\text{f}$ |
| Heater to Cathode | 2.6 | 2.7 | $\mu\mu\text{f}$ |
| Plate Section 2, to Plate and Grid, Section 1, maximum | 0.024 | | $\mu\mu\text{f}$ |
| Plate to Plate, maximum | 0.01 | | $\mu\mu\text{f}$ |
| Plate to Cathode, maximum | 0.15 | 0.15 | $\mu\mu\text{f}$ |
| Grounded-Grid Input | | 4.95 | $\mu\mu\text{f}$ |
| Grounded-Grid Output | | 2.27 | $\mu\mu\text{f}$ |

MECHANICAL

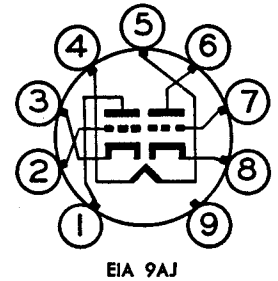
Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES EACH SECTION

| | | |
|---|-----|--------------|
| Plate Voltage | 150 | Volts |
| Plate Dissipation | 2.0 | Watts |
| DC Cathode Current | 20 | Milliamperes |
| Heater-Cathode Voltage | | |
| Heater Positive with Respect to Cathode | | |
| Total DC and Peak | 200 | Volts |
| Heater Negative with Respect to Cathode | | |
| Total DC and Peak | 200 | Volts |
| Grid Circuit Resistance | 0.5 | Megohms |

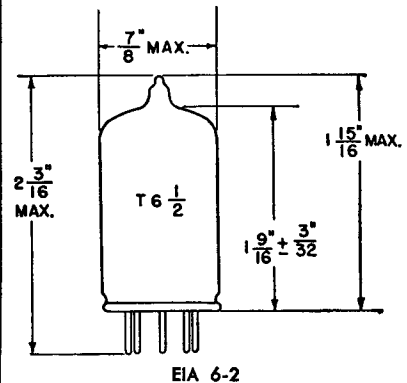
BASING DIAGRAM



TERMINAL CONNECTIONS

- Pin 1—Plate (Section 2)
- Pin 2—Grid (Section 2)
- Pin 3—Cathode (Section 2)
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Plate (Section 1)
- Pin 7—Grid (Section 1)
- Pin 8—Cathode (Section 1)
- Pin 9—Internal Shield

PHYSICAL DIMENSIONS



GENERAL ELECTRIC

Supersedes ET-T1355A, dated 8-56

Δ Supersedes pages 1 and 2, dated 8-56

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER, EACH SECTION

| | | |
|--|------|--------------|
| Plate Voltage | 150 | Volts |
| Cathode-Bias Resistor | 220 | Ohms |
| Amplification Factor | 36 | |
| Plate Resistance, approximate | 5000 | Ohms |
| Transconductance | 7200 | Micromhos |
| Plate Current | .10 | Milliamperes |
| Grid Voltage, approximate † | | |
| I _b = 10 Microamperes | -7 | Volts |

CASCODE AMPLIFIER

| | | |
|-------------------------------------|-------|--------------|
| Plate-Supply Voltage | 250 | Volts |
| Grid Voltage | -1.0 | Volts |
| Transconductance | 10000 | Micromhos |
| Plate Current | .16 | Milliamperes |
| Grid Voltage, approximate | | |
| G _m = 50 Micromhos | -6 | Volts |

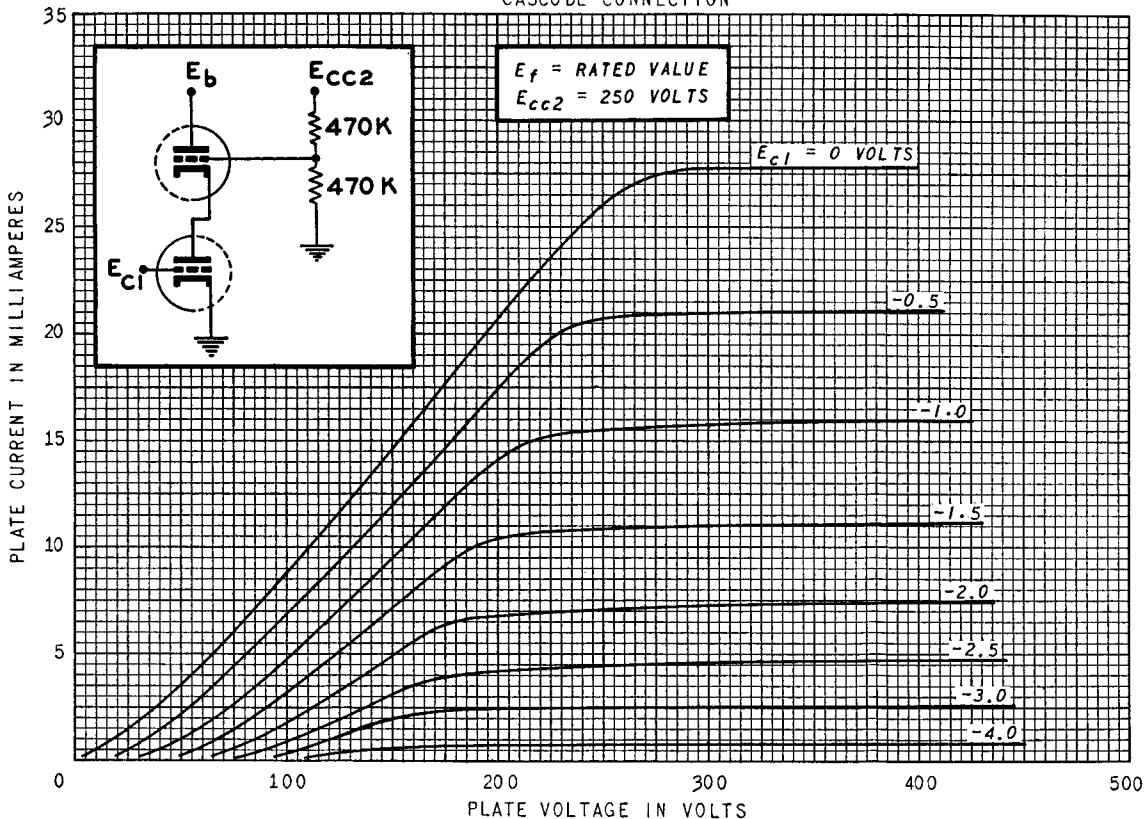
* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (EIA-315) connected to pin 9.

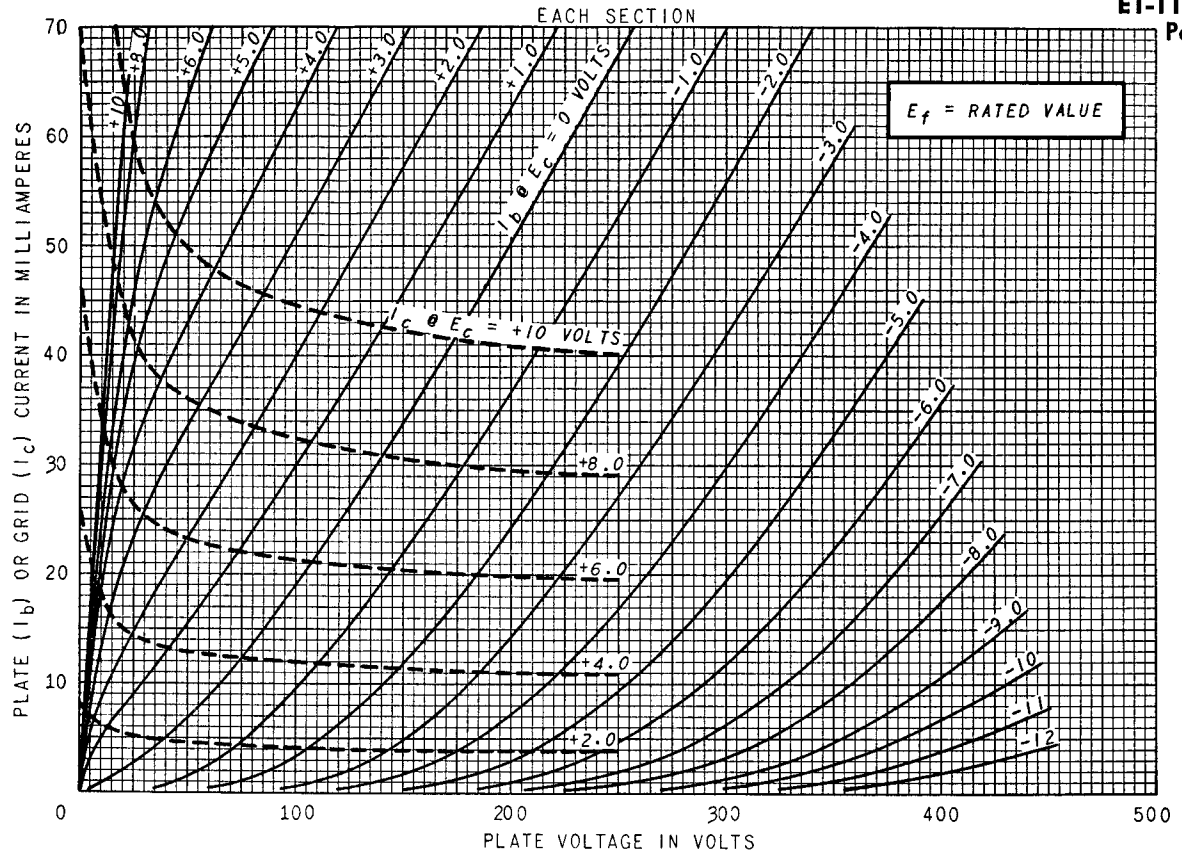
‡ Section two only.

AVERAGE PLATE CHARACTERISTICS

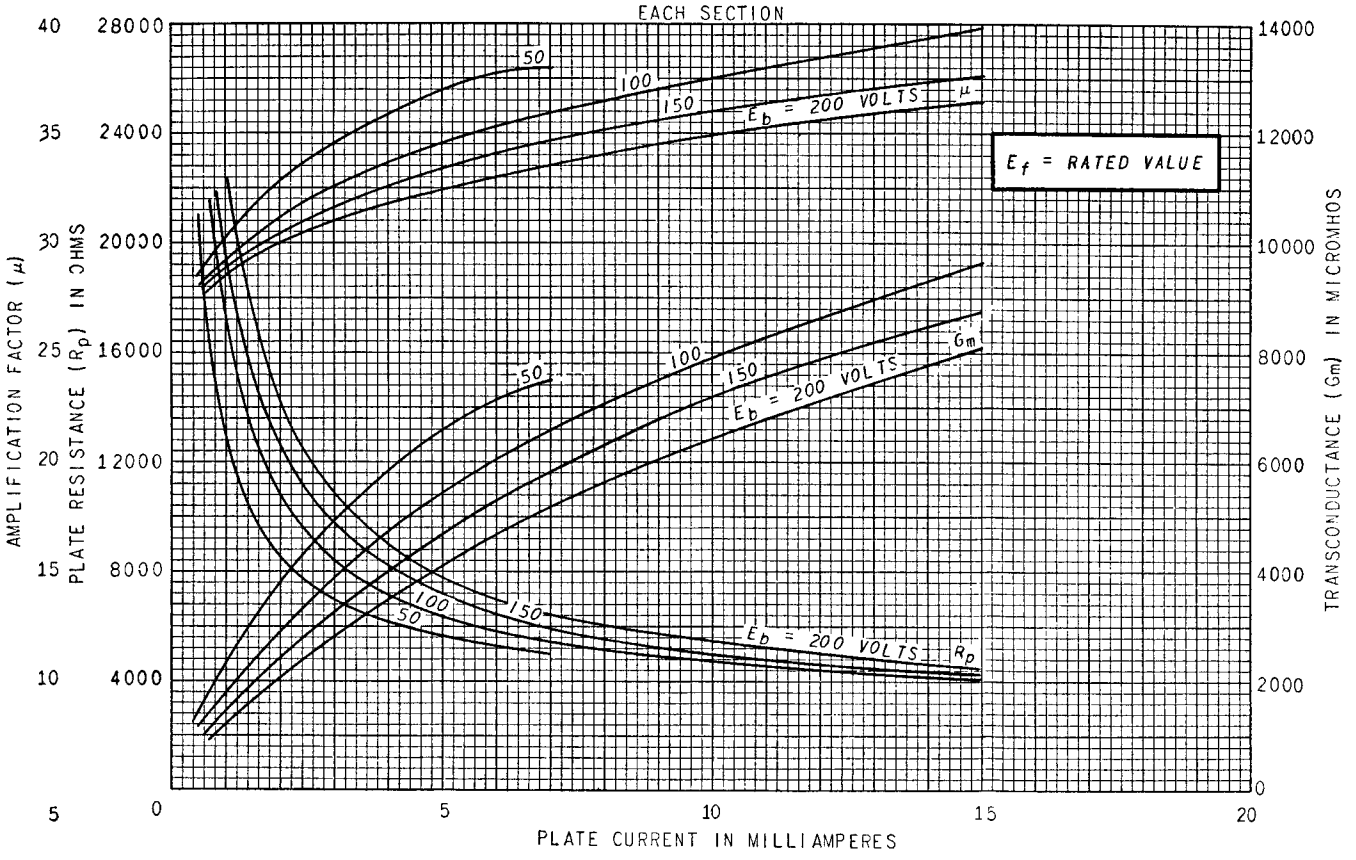
CASCODE CONNECTION



AVERAGE PLATE CHARACTERISTICS

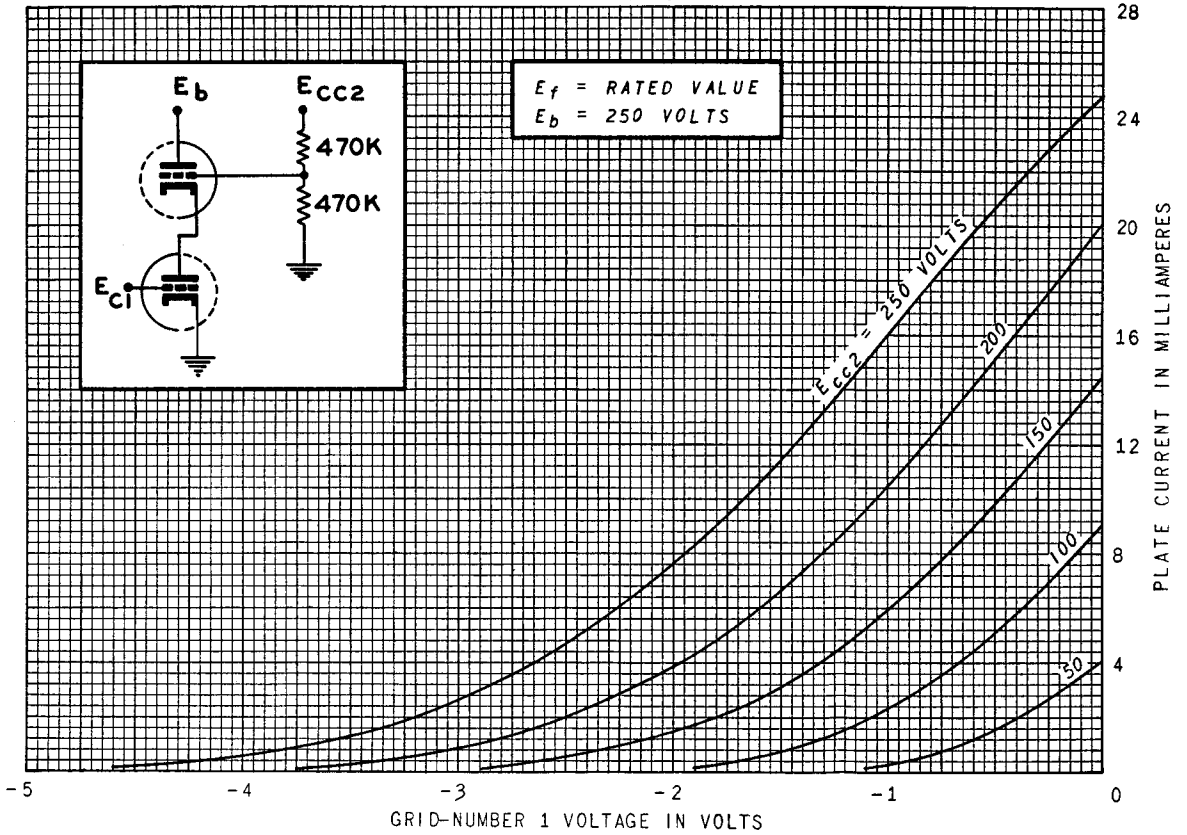


AVERAGE CHARACTERISTICS



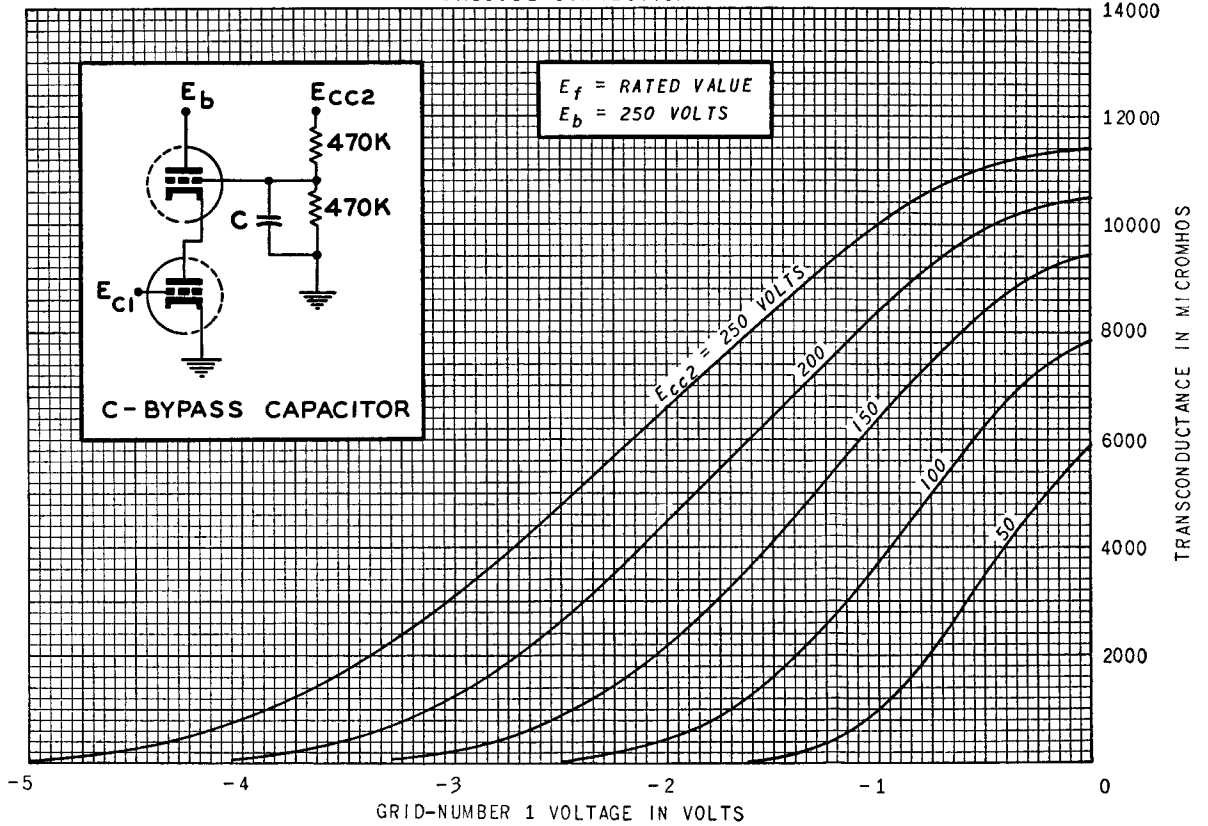
AVERAGE TRANSFER CHARACTERISTICS

CASCADE CONNECTION



AVERAGE TRANSFER CHARACTERISTICS

CASCADE CONNECTION



AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION

