

**6SJ7-12SJ7****PENTODE****FOR AF AND RF AMPLIFIER APPLICATIONS****6SJ7  
12SJ7  
ET-T1400**  
Page 1  
11-56**DESCRIPTION AND RATING**

The 6SJ7 is a metal sharp-cutoff pentode designed for use as a biased detector or high-gain amplifier.

The 12SJ7 is identical to the 6SJ7 except for heater ratings.

**GENERAL****ELECTRICAL**

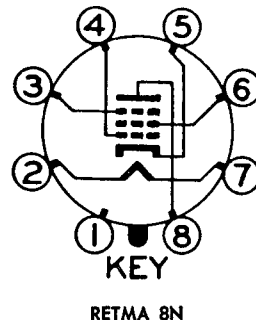
|                                    | 6SJ7  | 12SJ7            |
|------------------------------------|-------|------------------|
| Cathode—Coated Unipotential        |       |                  |
| Heater Voltage, AC or DC           | 6.3   | 12.6 Volts       |
| Heater Current                     | 0.3   | 0.15 Amperes     |
| Direct Interelectrode Capacitances |       |                  |
| Pentode Connection*                |       |                  |
| Grid-Number 1 to Plate, maximum    | 0.005 | $\mu\mu\text{f}$ |
| Input                              | 6.0   | $\mu\mu\text{f}$ |
| Output                             | 7.0   | $\mu\mu\text{f}$ |
| Triode Connection†                 |       |                  |
| Grid-Number 1 to Plate             | 2.8   | $\mu\mu\text{f}$ |
| Input                              | 3.4   | $\mu\mu\text{f}$ |
| Output                             | 11    | $\mu\mu\text{f}$ |

**MECHANICAL**

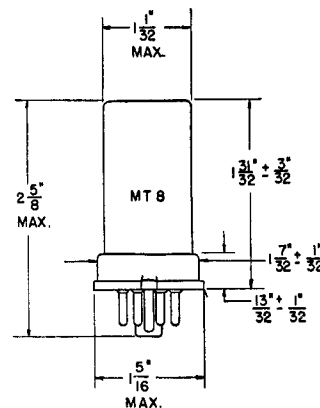
Mounting Position—Any  
Envelope—MT-8, Metal Shell  
Base—B8-21, Small Wafer Octal 8-Pin

**MAXIMUM RATINGS**

| DESIGN-CENTER VALUES                    | Pentode<br>Connection | Triode<br>Connection† |
|-----------------------------------------|-----------------------|-----------------------|
| Plate Voltage                           | 300                   | 250 Volts             |
| Screen-Supply Voltage                   | 300                   | ... Volts             |
| Screen Voltage—See Screen Rating Chart  |                       |                       |
| Positive DC Grid-Number 1 Voltage       | 0                     | 0 Volts               |
| Plate Dissipation                       | 2.5                   | 2.5 Watts             |
| Screen Dissipation                      | 0.7                   | ... Watts             |
| Heater-Cathode Voltage                  |                       |                       |
| Heater Positive with Respect to Cathode | 90                    | 90 Volts              |
| Heater Negative with Respect to Cathode | 90                    | 90 Volts              |
| Grid-Number 1 Circuit Resistance        |                       |                       |
| With Cathode Bias                       | 1.0                   | 1.0 Megohms           |

**BASING DIAGRAM****TERMINAL CONNECTIONS**

- Pin 1—Shell and Internal Shield
- Pin 2—Heater
- Pin 3—Grid Number 3 (Suppressor)
- Pin 4—Grid Number 1
- Pin 5—Cathode
- Pin 6—Grid Number 2 (Screen)
- Pin 7—Heater
- Pin 8—Plate

**PHYSICAL DIMENSIONS****GENERAL ELECTRIC**

Supersedes ET-T336, dated 5-46

## CHARACTERISTICS AND TYPICAL OPERATION

### CLASS A<sub>1</sub> AMPLIFIER

|                                                                                  |      |      |              |
|----------------------------------------------------------------------------------|------|------|--------------|
| Plate Voltage . . . . .                                                          | 100  | 250  | Volts        |
| Suppressor, Connected to Cathode at Socket                                       |      |      |              |
| Screen Voltage . . . . .                                                         | 100  | 100  | Volts        |
| Grid-Number 1 Voltage . . . . .                                                  | —3.0 | —3.0 | Volts        |
| Plate Resistance, approximate . . . . .                                          | 0.7  | 1.0  | Megohms      |
| Transconductance . . . . .                                                       | 1575 | 1650 | Micromhos    |
| Plate Current . . . . .                                                          | 2.9  | 3.0  | Milliamperes |
| Screen Current . . . . .                                                         | 0.9  | 0.8  | Milliamperes |
| Grid-Number 1 Voltage, approximate<br>I <sub>b</sub> = 10 Microamperes . . . . . | —8   | —8   | Volts        |

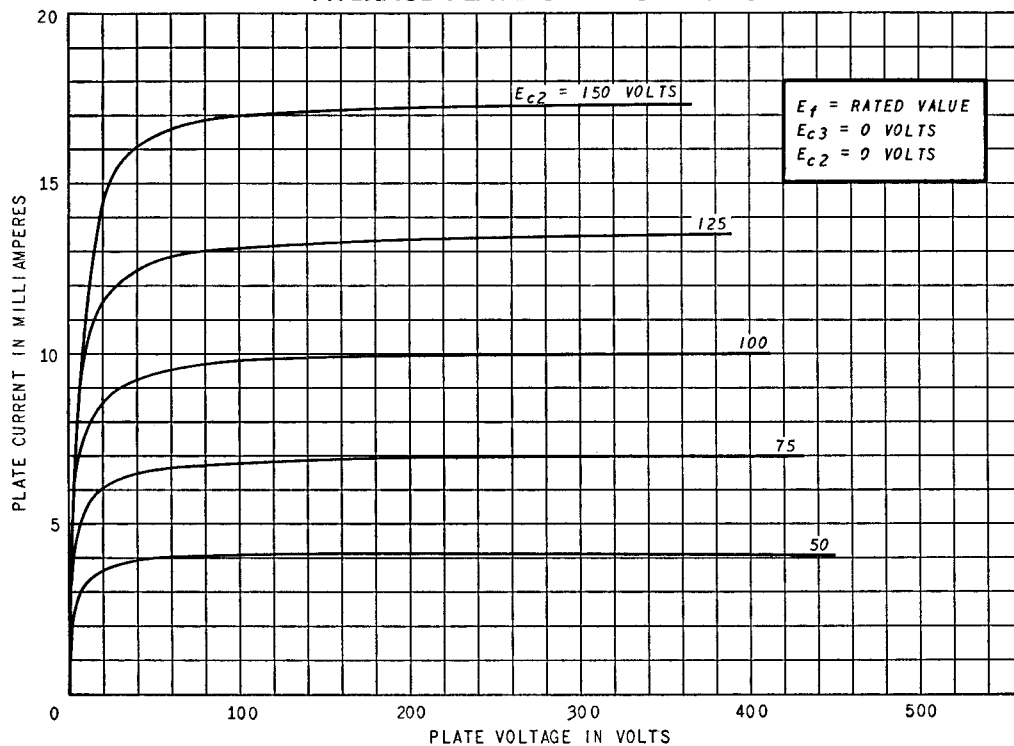
### CLASS A<sub>1</sub> AMPLIFIER, TRIODE CONNECTION†

|                                         |      |      |              |
|-----------------------------------------|------|------|--------------|
| Plate Voltage . . . . .                 | 180  | 250  | Volts        |
| Grid-Number 1 Voltage . . . . .         | —6.0 | —8.5 | Volts        |
| Amplification Factor . . . . .          | 19   | 19   |              |
| Plate Resistance, approximate . . . . . | 8250 | 7600 | Ohms         |
| Transconductance . . . . .              | 2300 | 2500 | Micromhos    |
| Plate Current . . . . .                 | 6.0  | 9.2  | Milliamperes |

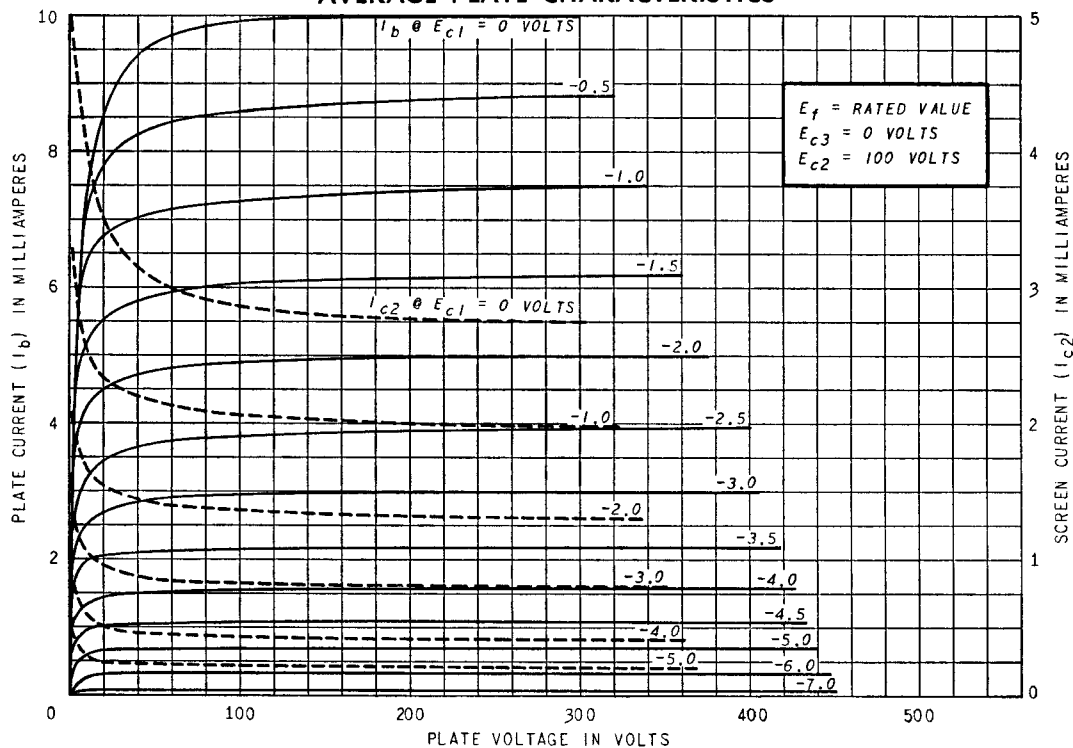
\* With shell and internal shield connected to cathode.

† With screen and suppressor connected to plate.

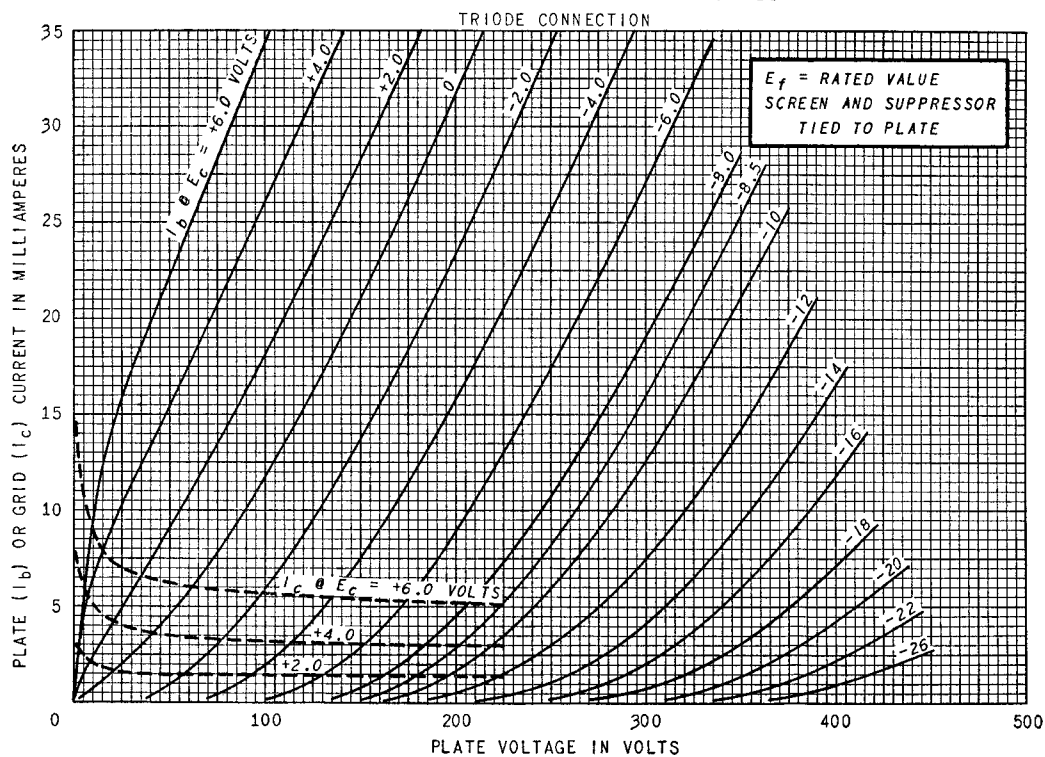
### AVERAGE PLATE CHARACTERISTICS



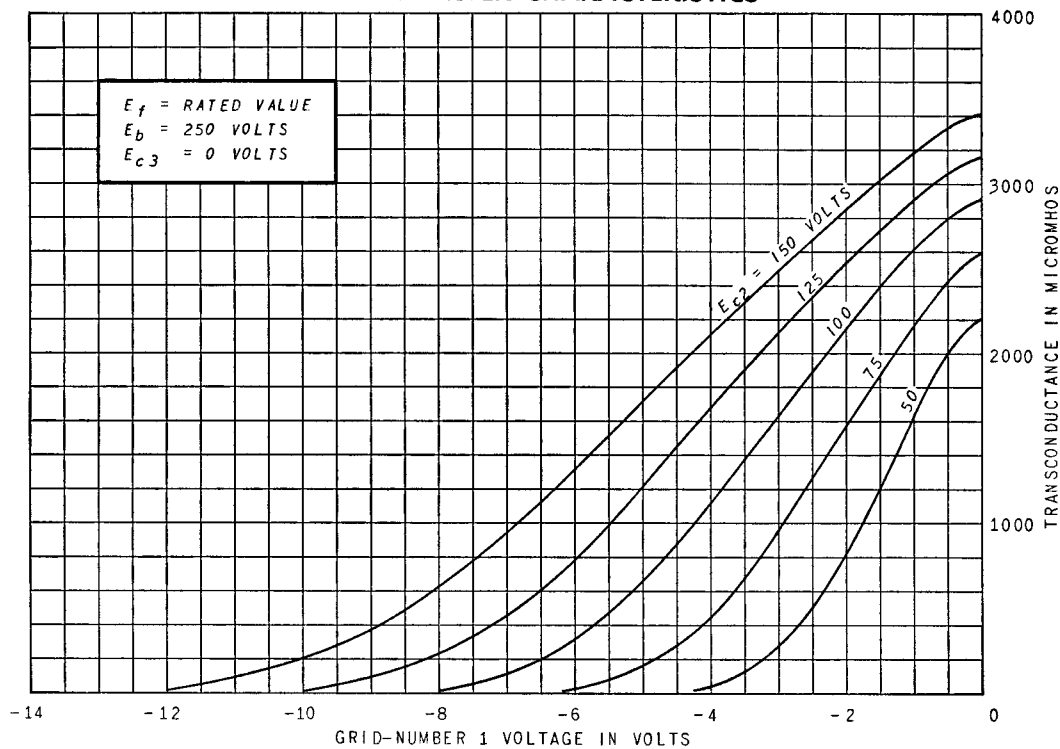
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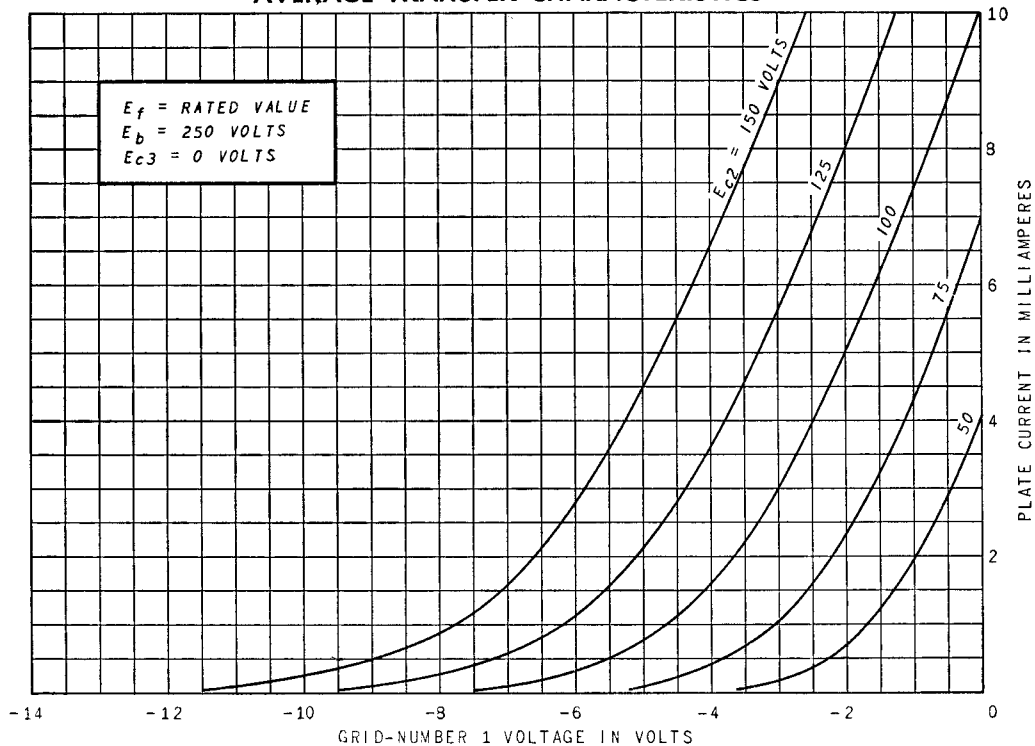
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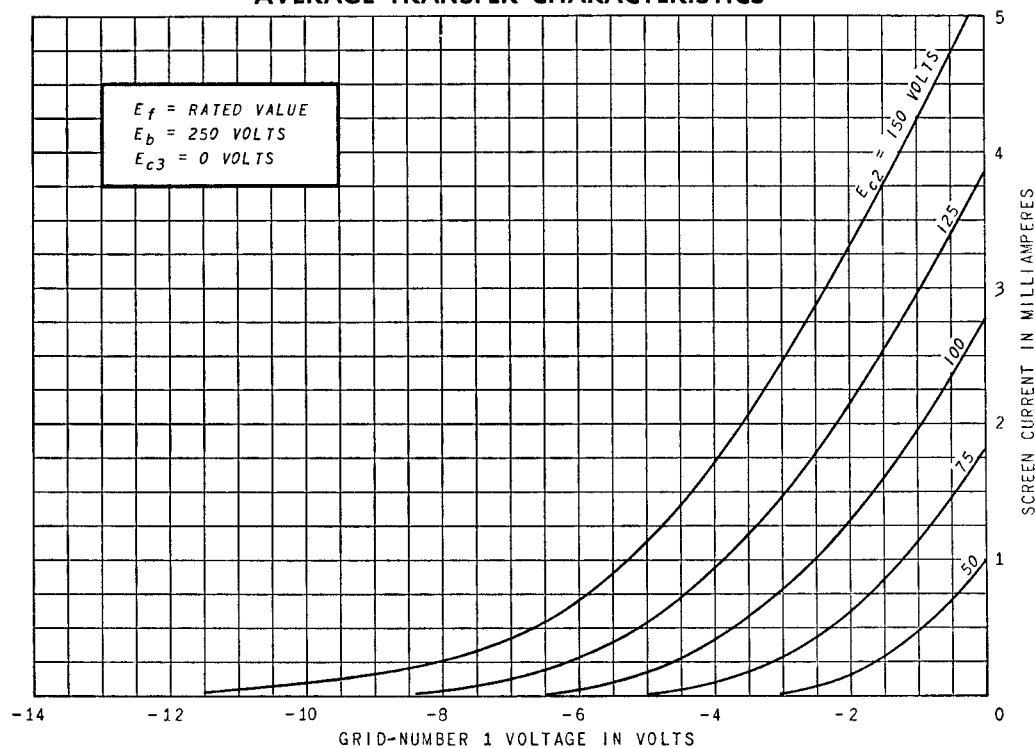
### AVERAGE TRANSFER CHARACTERISTICS



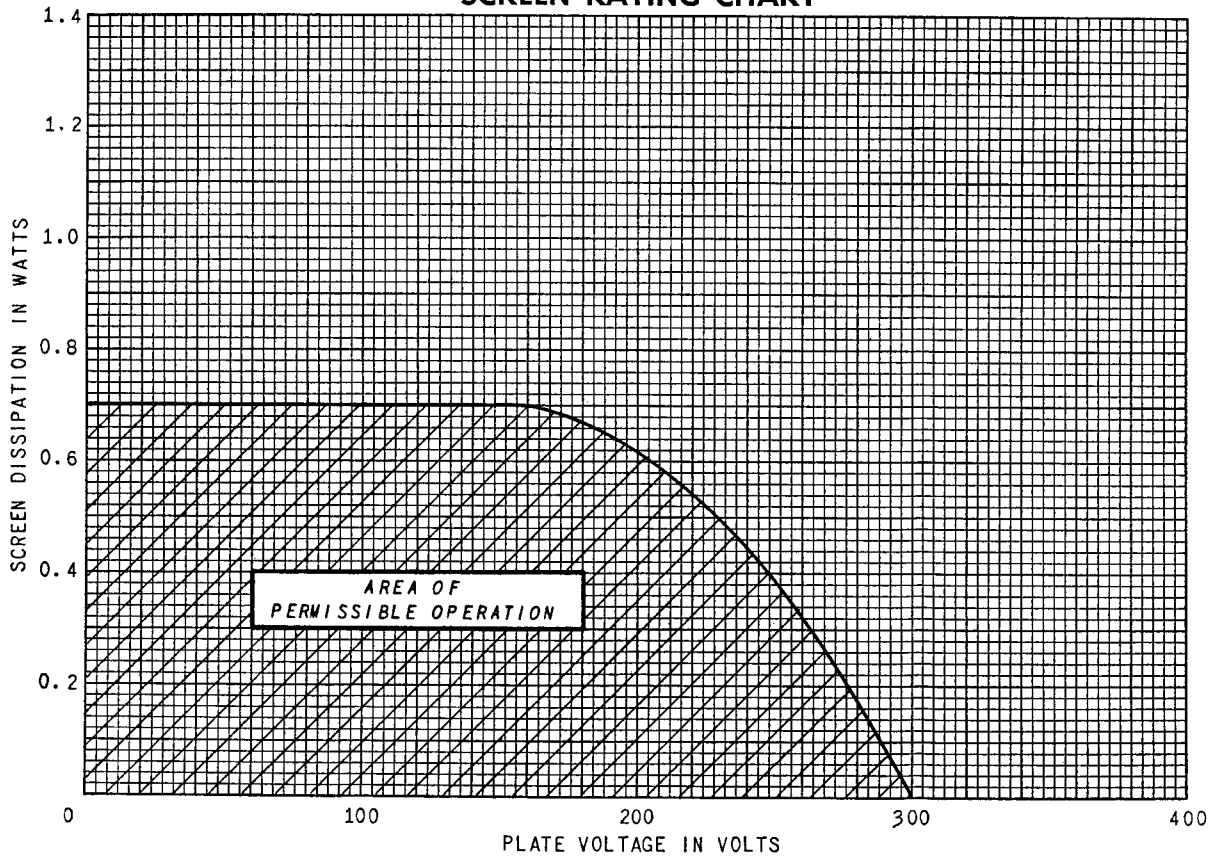
### AVERAGE TRANSFER CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



### SCREEN RATING CHART



ELECTRONIC COMPONENTS DIVISION

**GENERAL**  **ELECTRIC**

Schenectady 5, N. Y.