



# 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

Cathode—Coated Unipotential	<b>6SJ7</b>	<b>12SJ7</b>
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	$\mu\mu\text{f}$

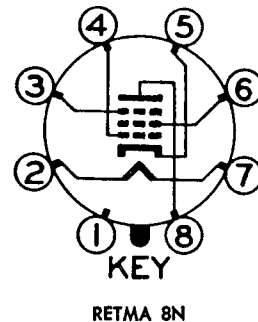
##### MECHANICAL

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

#### MAXIMUM RATINGS

DESIGN-CENTER VALUES	Pentode Connection	Triode 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

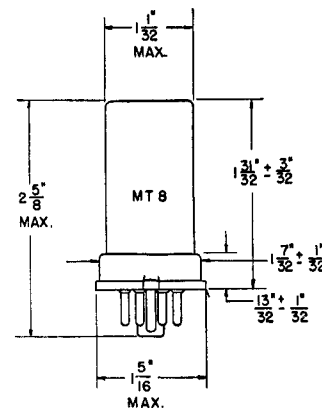
#### BASING DIAGRAM



#### 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



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 I <sub>b</sub> = 10 Microamperes . . . . .	-8	-8	Volts

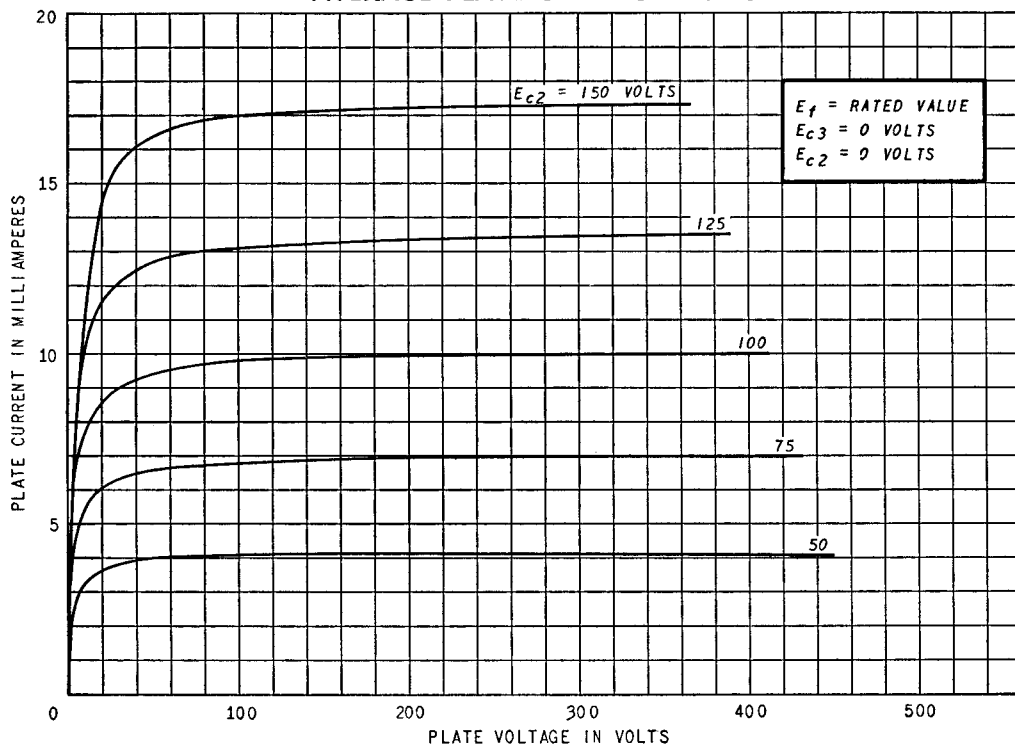
**CLASS A<sub>1</sub> AMPLIFIER, TRIODE CONNECTION†**

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

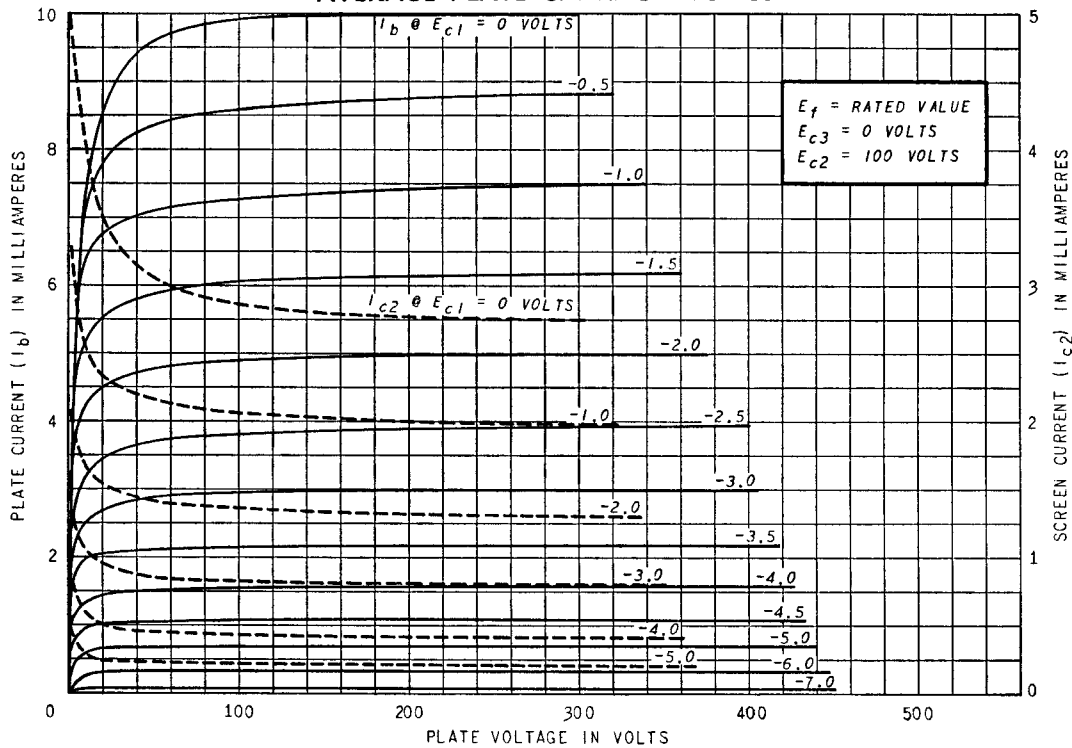
\* With shell and internal shield connected to cathode.

† With screen and suppressor connected to plate.

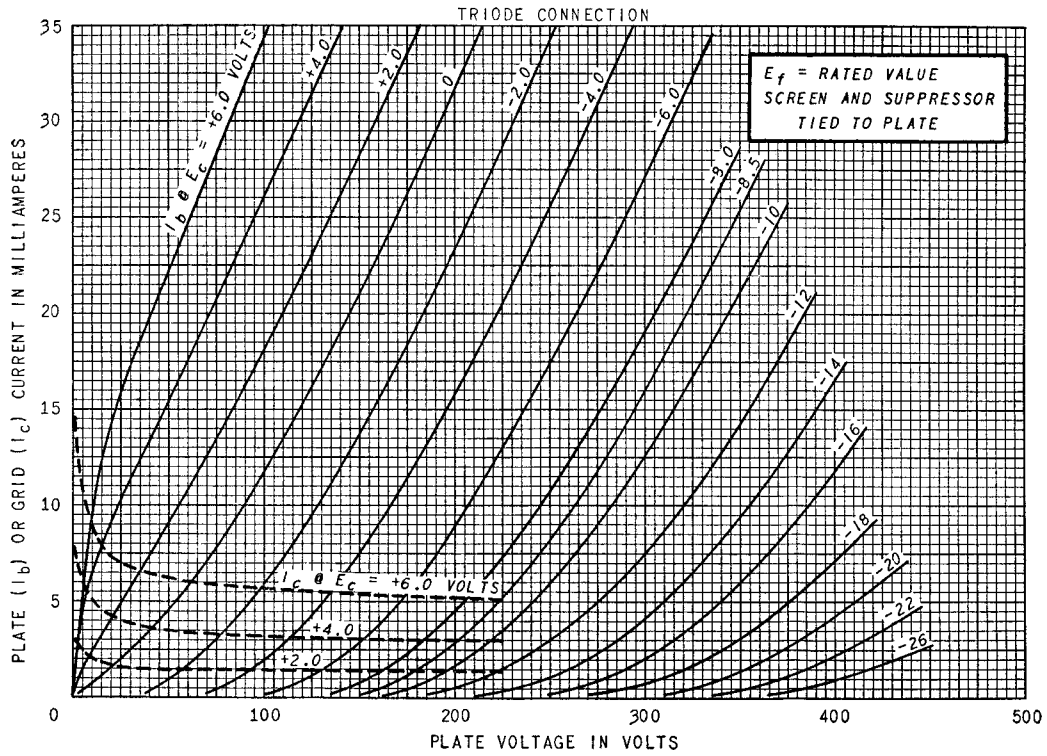
**AVERAGE PLATE CHARACTERISTICS**



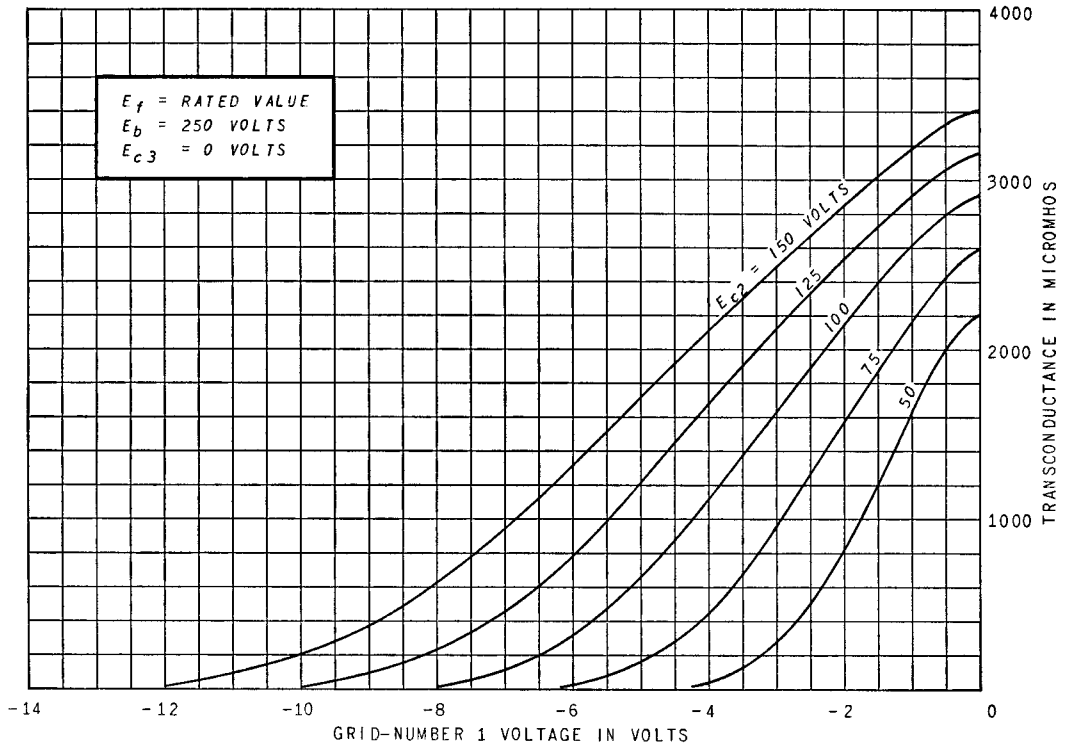
**AVERAGE PLATE CHARACTERISTICS**



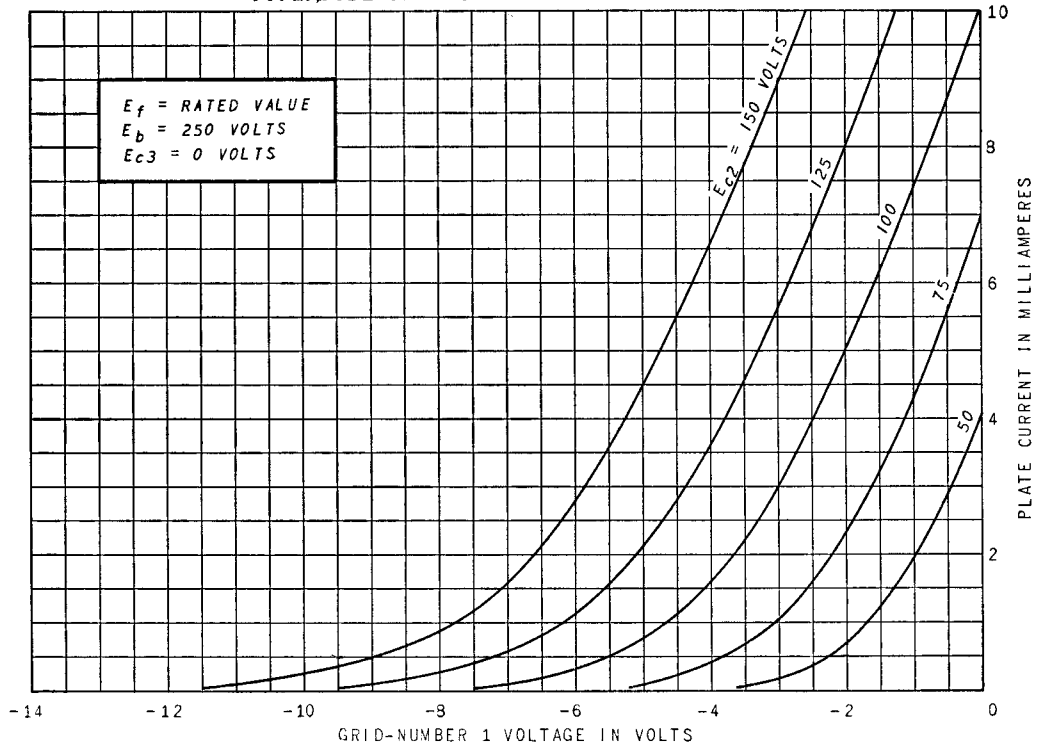
**AVERAGE PLATE CHARACTERISTICS**



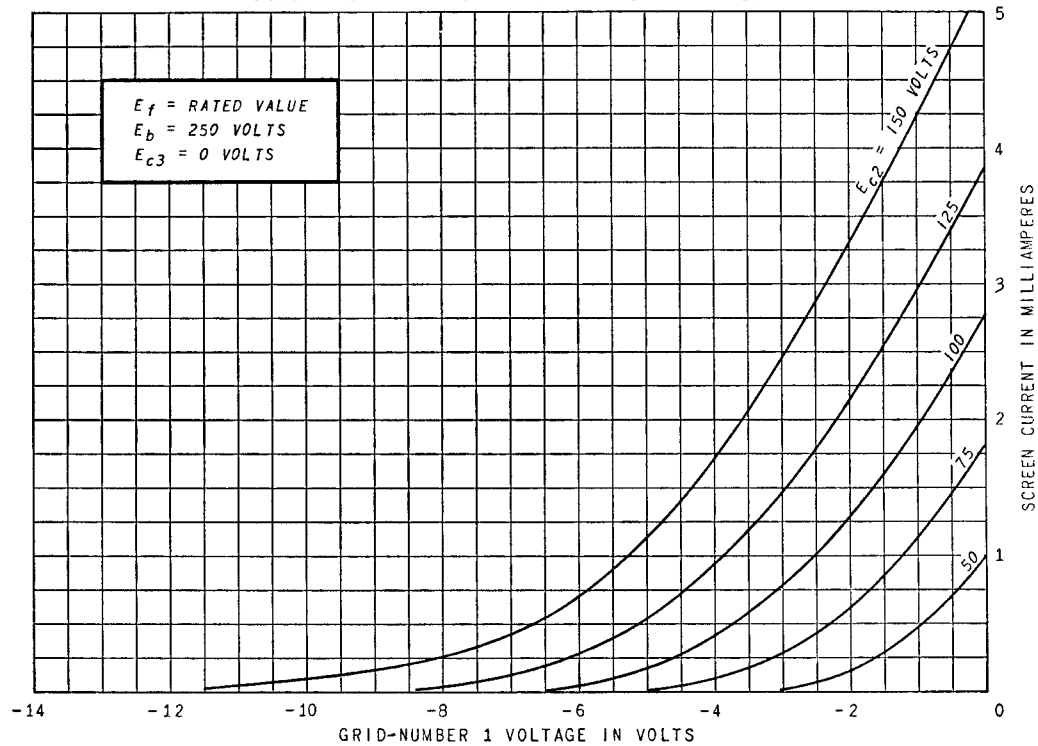
**AVERAGE TRANSFER CHARACTERISTICS**



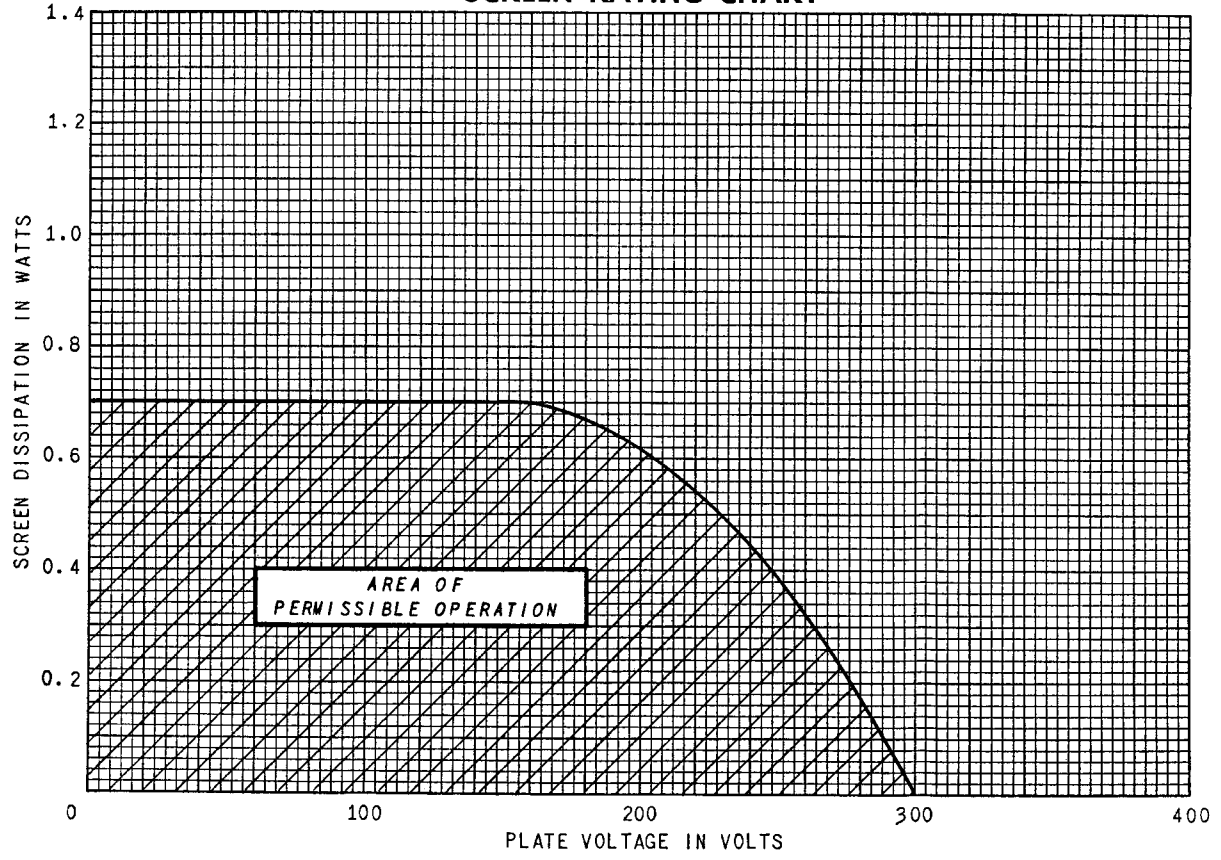
**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



### SCREEN RATING CHART



**ELECTRONIC COMPONENTS DIVISION**



**Schenectady 5, N. Y.**