

## HEPTODE

FOR GATED AMPLIFIER SERVICE

### DESCRIPTION AND RATING

The 6CS6 is a miniature dual-control heptode designed primarily for use as a combined sync separator and sync clipper in television receivers. Each of the two independent control grids exhibits a sharp-cutoff characteristic.

#### GENERAL

##### Electrical

Cathode—Coated Unipotential

	3CS6	4CS6	6CS6
Heater Voltage, AC or DC	3.15	4.2	6.3 Volts
Heater Current	0.6	0.45	0.3 Amperes
Heater Warm-up Time*	11	11	... Seconds
Direct Interelectrode Capacitances, approximate†			
Grid-Number 1 to Plate, maximum			0.07 $\mu\mu\text{f}$
Grid-Number 3 to Plate, maximum			0.36 $\mu\mu\text{f}$
Grid-Number 1 to All Except Plate			5.5 $\mu\mu\text{f}$
Grid-Number 3 to All Except Plate			7.0 $\mu\mu\text{f}$
Plate to All			7.5 $\mu\mu\text{f}$
Grid-Number 1 to Grid-Number 3, maximum			0.22 $\mu\mu\text{f}$

##### Mechanical

Mounting Position—Any

Envelope—T-5 1/2, Glass

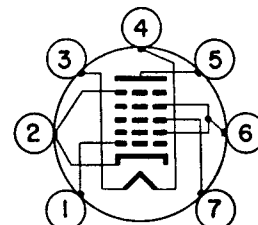
Base—E7-1, Miniature Button 7-Pin

#### MAXIMUM RATINGS

##### DESIGN-CENTER VALUES

Plate Voltage	300	Volts
Screen-Supply Voltage	300	Volts
Screen Voltage	100	Volts
Plate Dissipation	1.0	Watts
Screen Dissipation	1.0	Watts
DC Cathode Current	14	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 3 Circuit Resistance	2.2	Megohms
Grid-Number 1 Circuit Resistance	0.47	Megohms

#### BASING DIAGRAM

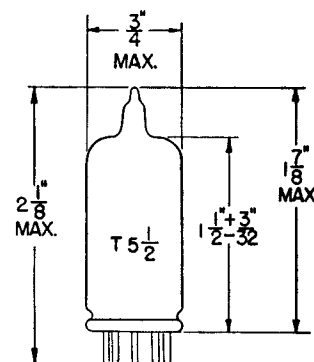


EIA 7CH

#### TERMINAL CONNECTIONS

- Pin 1—Grid Number 1
- Pin 2—Cathode and Grid Number 5
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Plate
- Pin 6—Grids Number 2 and 4 (Screen)
- Pin 7—Grid Number 3

#### PHYSICAL DIMENSIONS



EIA 5-2

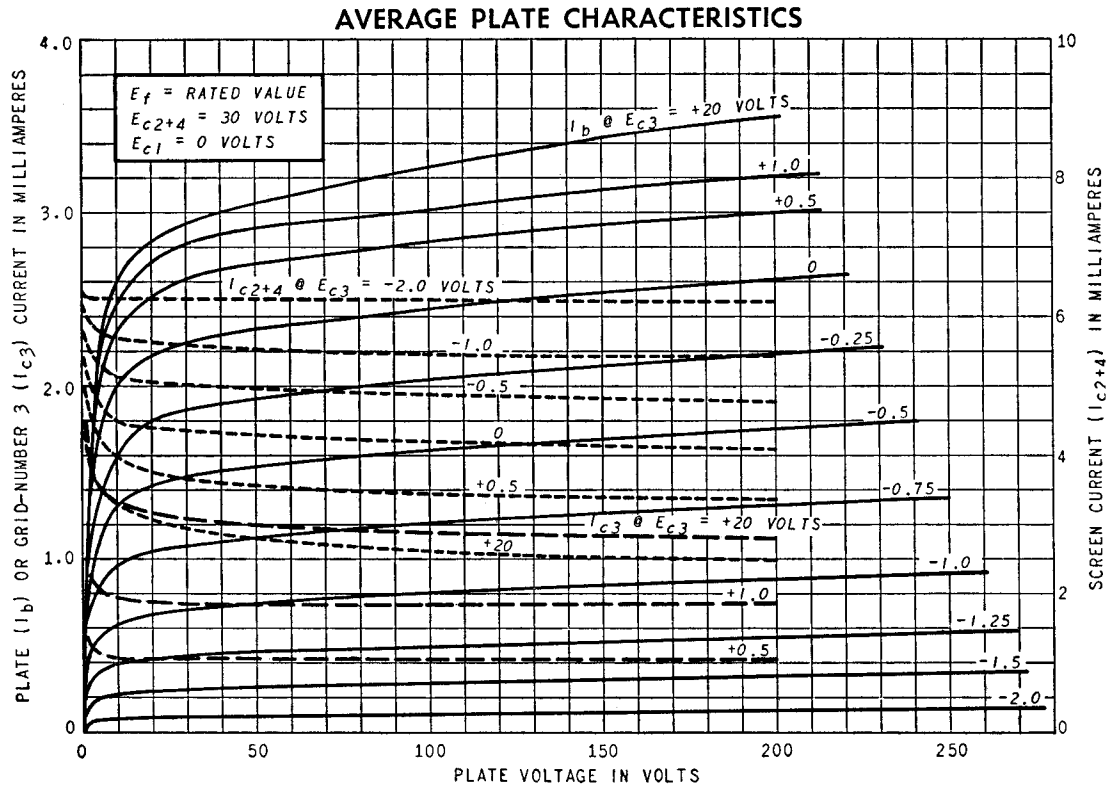
## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS

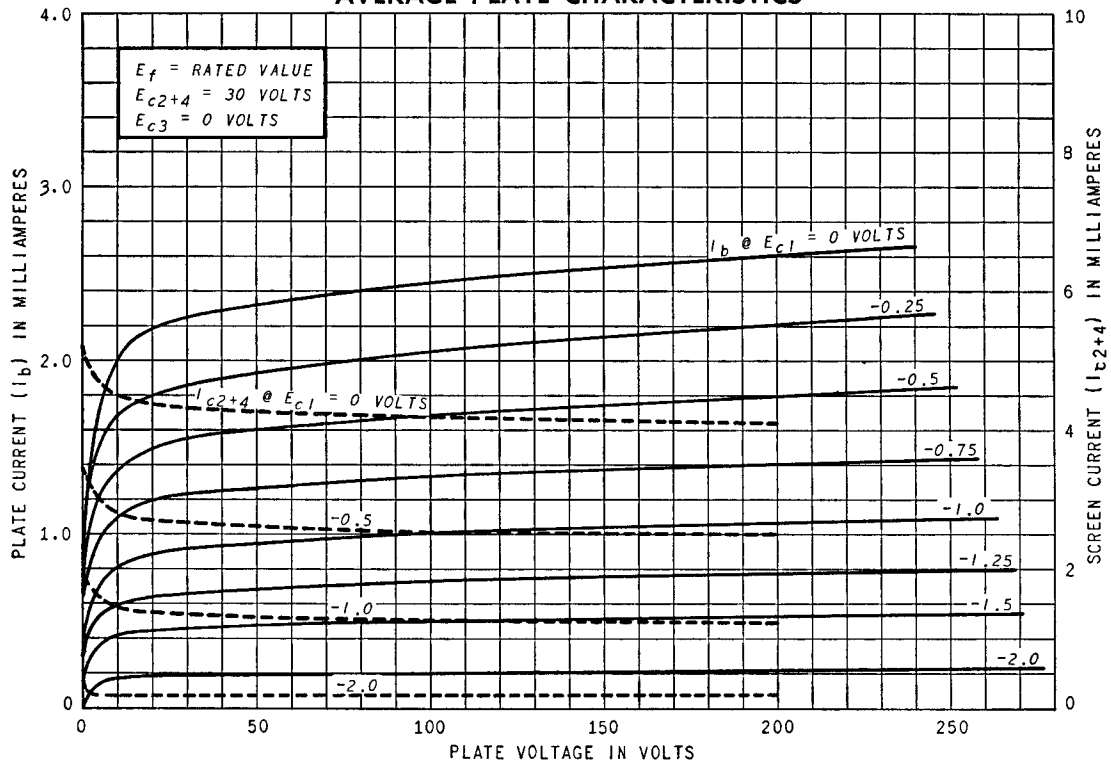
Plate Voltage .....	10	100	100 Volts
Screen Voltage .....	30	30	30 Volts
Grid-Number 3 Voltage .....	0	-1.0	0 Volts
Grid-Number 1 Voltage .....	0	0	-1.0 Volts
Plate Resistance, approximate .....		0.7	1.0 Megohms
Grid-Number 3 Transconductance .....		1500	... Micromhos
Grid-Number 1 Transconductance .....		....	1100 Micromhos
Plate Current .....	2.0	0.8	1.0 Milliamperes
Screen Current .....	4.5	5.5	1.3 Milliamperes
Grid-Number 3 Voltage, approximate I <sub>b</sub> = 50 Microamperes .....		-2.2	.... Volts
Grid-Number 1 Voltage, approximate I <sub>b</sub> = 50 Microamperes .....		....	-2.5 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.

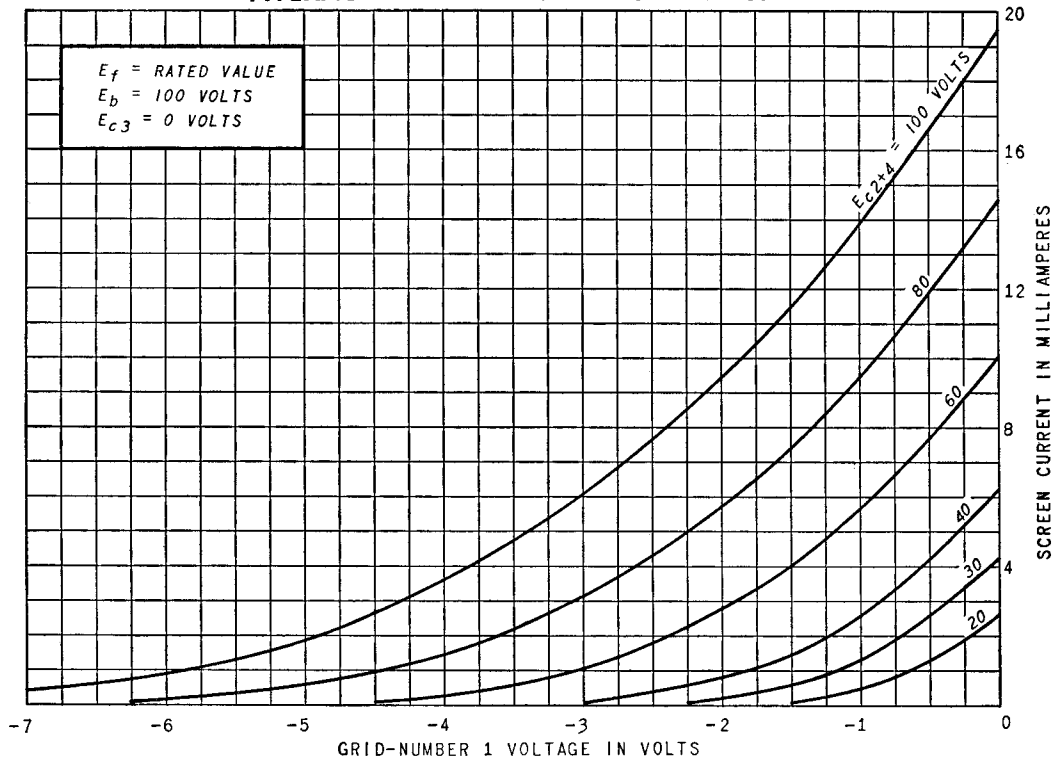
† Without external shield.



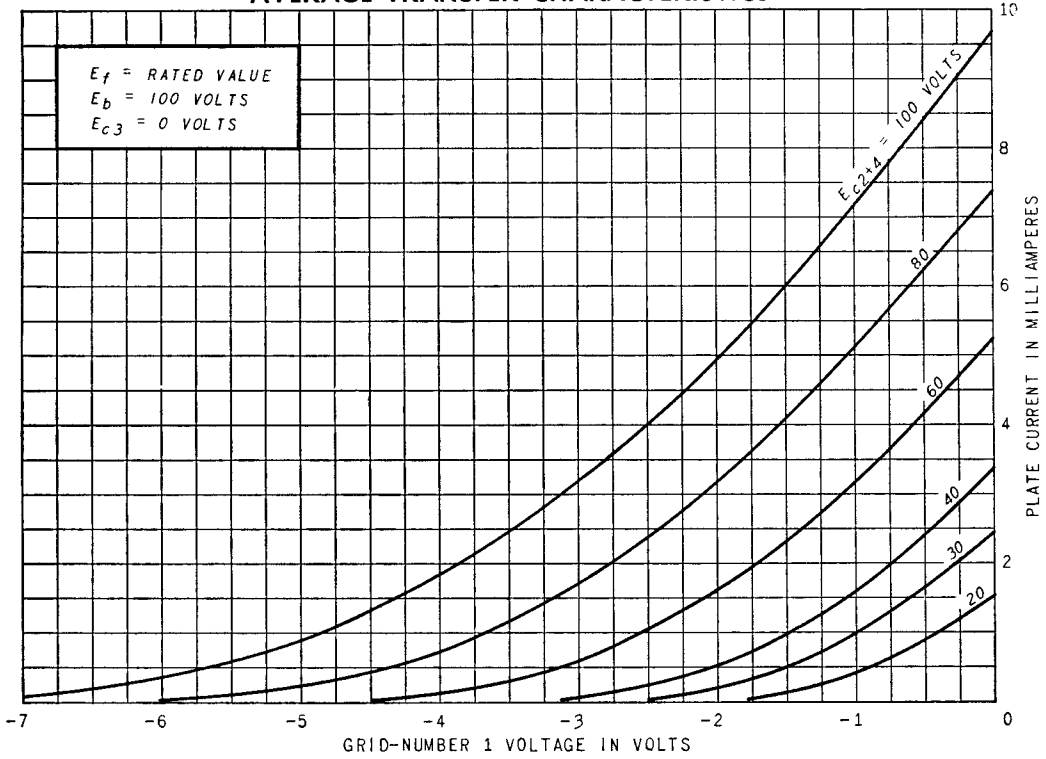
**AVERAGE PLATE CHARACTERISTICS**



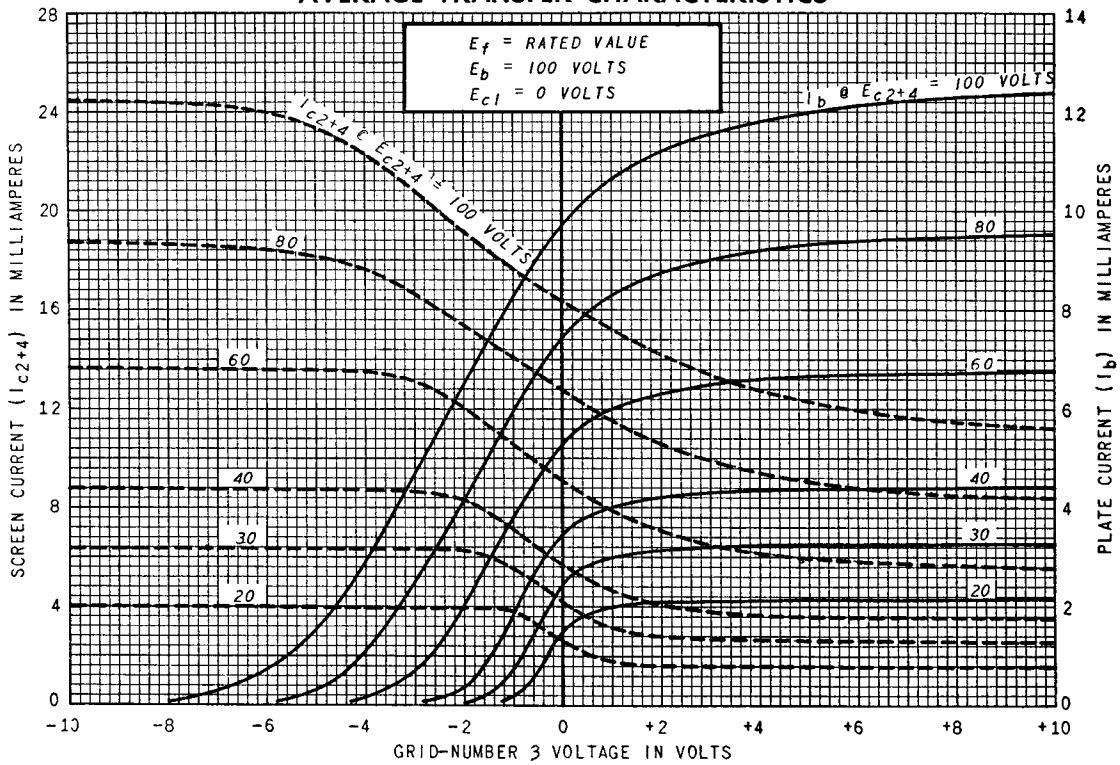
**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



**ELECTRONIC COMPONENTS DIVISION**



**Schenectady 5, N. Y.**