



# 6AS7-GYB

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ET-T1618

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## TWIN TRIODE

### DESCRIPTION AND RATING

The 6AS7-GYB is a low-mu twin triode primarily designed for service as a series-regulator tube in d-c power supplies. The tube differs from the 6AS7-GA in having controlled zero-bias plate current and a low-loss phenolic base.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential		
Heater Voltage, AC or DC	6.3	Volts
Heater Current	2.5	Amperes
Direct Interelectrode Capacitances, approximate†		
Grid to Plate, Each Section	7.5	μμf
Input, Each Section	6.5	μμf
Output, Each Section	2.2	μμf
Heater to Cathode, Each Section	7.0	μμf
Grid to Grid	0.5	μμf
Plate to Plate	1.9	μμf

##### MECHANICAL

Mounting Position—Any  
Envelope—T-12, Glass  
Base—B8-110, Short Medium-Shell Octal 8-Pin Micanol

#### MAXIMUM RATINGS

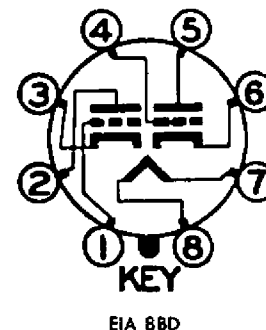
##### DC AMPLIFIER SERVICE—DESIGN-CENTER VALUES, EACH SECTION

Plate Voltage	250	Volts
Plate Dissipation	13	Watts
DC Plate Current	125	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	300	Volts
Heater Negative with Respect to Cathode	300	Volts
Grid-Circuit Resistance		
With Cathode Bias‡	1.0	Megohms

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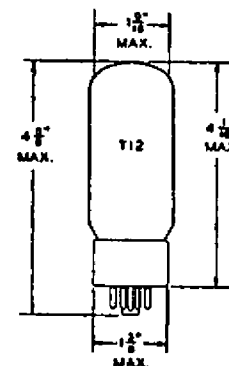
#### BASING DIAGRAM



#### TERMINAL CONNECTIONS

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

#### PHYSICAL DIMENSIONS



EIA 12-16



**MAXIMUM RATINGS (Cont'd)**

**BOOSTER SCANNING SERVICE§—DESIGN-CENTER VALUES, EACH SECTION**

Peak Inverse Plate Voltage.....	1700	Volts
Plate Dissipation.....	13	Watts
Plate Current.....	125	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode.....	300	Volts
Heater Negative with Respect to Cathode.....	300	Volts
Grid-Circuit Resistance		
With Cathode-Bias†.....	1.0	Megohms

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all tubes.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply-voltage.

**CHARACTERISTICS AND TYPICAL OPERATION**

**AVERAGE CHARACTERISTICS, EACH SECTION**

Plate Voltage.....	40	135	Volts
Grid Voltage.....	0	—	Volts
Cathode-Bias Resistor.....	—	250	Ohms
Amplification Factor.....	—	2.0	
Plate Resistance, approximate.....	—	280	Ohms
Transconductance.....	—	7000	Micromhos
Plate Current.....	150	125	Milliamperes

**INITIAL CHARACTERISTICS LIMITS**

	Mini- mum	Maxi- mum	
Heater Current			
E <sub>f</sub> = 6.3 volts.....	2.26	2.75	Amperes
Plate Current, Each Section			
E <sub>f</sub> = 6.3 volts, E <sub>bb</sub> = 135 volts, R <sub>k</sub> = 250 ohms (bypassed).....	100	150	Milliamperes
Zero-Bias Plate Current, Each Section			
E <sub>f</sub> = 6.3 volts, E <sub>b</sub> = 40 volts, E <sub>c</sub> = 0.....	110	190	Milliamperes
Transconductance, Each Section			
E <sub>f</sub> = 6.3 volts, E <sub>bb</sub> = 135 volts, R <sub>k</sub> = 250 ohms (bypassed).....	5800	8200	Micromhos
Amplification Factor, Each Section			
E <sub>f</sub> = 6.3 volts, E <sub>bb</sub> = 135 volts, R <sub>k</sub> = 250 ohms (bypassed).....	1.4	2.6	
Negative Grid Current, Each Section			
E <sub>f</sub> = 6.3 volts, E <sub>bb</sub> = 135 volts, R <sub>k</sub> = 250 ohms (bypassed), R <sub>g</sub> = 1.0 meg.....	—	2.0	Microamperes

† Without external shield.

‡ Operation with fixed bias is not recommended.

§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

**ELECTRONIC COMPONENTS DIVISION**



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