

**RAYTHEON**

# POWER PENTODES 6HA6, 8HA6, 10HA6, 15HA6, 28HA6

The 6HA6 is a power pentode designed especially for use as a video amplifier in low B<sup>+</sup> television receivers. The very high transconductance sharp cutoff and low plate knee characteristic provide excellent linearity over a large operating range. Additional features include high plate dissipation and low interelectrode capacitance making this tube ideal for use in TV video and other wide band applications. The 8HA6, 10HA6, 15HA6, and 28HA6 are identical except for heater characteristics.

## ELECTRICAL DATA

### HEATER CHARACTERISTICS:

|                                     | 6HA6       | 8HA6      | 10HA6     | 15HA6     | 28HA6                  |
|-------------------------------------|------------|-----------|-----------|-----------|------------------------|
| Heater voltage (ac or dc)           | 6.3 ± 10%□ | 8.0●●     | 10.4●●    | 15.0●●    | 28.6●● volts           |
| Heater current                      | 710●       | 600 ± 6%□ | 450 ± 6%□ | 300 ± 6%□ | 150 ± 6%□ ma           |
| Peak heater-cathode voltage maximum |            |           |           |           |                        |
| Heater negative to cathode          |            |           |           |           | 200 volts              |
| Heater positive to cathode          |            |           |           |           | 200 <sup>†</sup> volts |

### DESIGN MAXIMUM RATINGS: (See EIA Standard RS-239)

|                            |            |
|----------------------------|------------|
| Plate voltage              | 300 volts  |
| Grid #2 voltage            | 250 volts  |
| Negative grid #1 voltage   | -100 volts |
| Plate dissipation          | 8.0 watts  |
| Grid #2 dissipation        | 1.5 watts  |
| Grid #1 circuit resistance |            |
| Fixed bias                 | 0.05 meg.  |
| Self bias                  | 0.15 meg.  |

### AVERAGE CHARACTERISTICS:

|                                           |             |
|-------------------------------------------|-------------|
| Plate voltage                             | 150 volts   |
| Grid #2 voltage                           | 100 volts   |
| Cathode resistor                          | 33 ohms     |
| Plate current                             | 28 ma       |
| Grid #2 current                           | 3.5 ma      |
| Triode Mu*                                | 31          |
| Transconductance                          | 20000 umhos |
| Plate resistance                          | 20K ohms    |
| Grid #1 voltage for Ib = 100 ua (approx.) | -5.0 volts  |

### DIRECT INTERELECTRODE CAPACITANCES:

|                                  |          |
|----------------------------------|----------|
| Grid #1 to plate (g1 to p).      | 0.18 pf. |
| Input g1 to (h + k + g2 + b.p.). | 13 pf.   |
| Output p to (h + k + g2 + b.p.). | 8 pf.    |

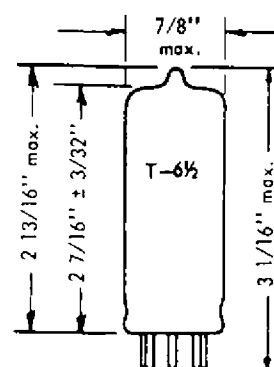
### PLATE KNEE CHARACTERISTICS: (Instantaneous readings)

|                                               |        |
|-----------------------------------------------|--------|
| Eb = 60 volts, Ec2 = 100 volts, Ec1 = 0 volts |        |
| Plate current                                 | 45 ma  |
| Grid #2 current                               | 9.0 ma |

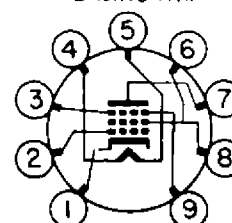
## MECHANICAL DATA

ENVELOPE . . . . . T-6½ glass  
BASE . . . . . 9 pin miniature (E9-1)  
CATHODE . . . . . coated unipotential  
MOUNTING POSITION . . . . . any

### PHYSICAL DIMENSIONS



### BASING 9NW



### BOTTOM VIEW

### TERMINAL CONNECTIONS

- Pin 1 cathode
- Pin 2 grid #1
- Pin 3 grid #3
- Pin 4 heater
- Pin 5 heater
- Pin 6 grid #2
- Pin 7 plate
- Pin 8 grid #2
- Pin 9 grid #3

## POWER PENTODES 6HA6, 8HA6, 10HA6, 15HA6, 28HA6

□ The equipment designer shall design equipment so that the heater voltage for the 6HA6 and the heater current for the 8HA6, 10HA6, 15HA6 and 28HA6 are centered at the specified bogey value with heater supply variations restricted to maintain heater voltage (or current) within the specified tolerance.

● Heater current at bogey heater voltage.

●● Heater voltage at bogey heater current.

† The dc component must not exceed 100 volts.

\* Plate tied to G2 at 100 volts.

