5696
THYRATRON
GAS-TETRODE, MINIATURE TYPE

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
  Voltage.................. 6.3................ ac or dc volts
  Current.................. 0.150..................... amp
Cathode:
  Minimum Heating Time, prior to tube conduction........... 10 sec
  Direct Interelectrode Capacitances (Approx.): 0
    Grid No.1 to Anode 0.03..................... μuf
    Input................... 1.8..................... μuf
    Output................... 0.54..................... μuf
Ionization Time (Approx.):
  For conditions: dc anode volts = 100; grid-No.1
    square-pulse volts = +50; peak cathode amperes during conduction = 0.150..................... 0.5 μsec
Deionization Time (Approx.):
  For conditions: dc anode volts = 500; grid-No.1
    volts = -100, grid-No.1 resistor (ohms) = 1000; dc cathode amperes = 0.025..................... 25 μsec
  For conditions: dc anode volts = 500; grid-No.1
    volts = -13; grid-No.1 resistor (ohms) = 1000; dc cathode amperes = 0.025..................... 40 μsec
  Maximum Critical Grid-No.1 Current, with ac
    anode-supply volts (rms) = 550, and average cathode amperes = 0.025..................... 0.5 μamp
Anode Voltage Drop (Approx.)..................... 10 volts
Grid-No.1 Control Ratio (Approx.) with grid-No.1
  resistor (megohms) = 0; grid-No.2 volts = 0..................... 250
Grid-No.2 Control Ratio (Approx.) with grid-No.1
  volts = 0, grid-No.2 resistor (ohms) = 0..................... 15

° Without external shield.

Mechanical:
Mounting Position.................................................. Any
Maximum Overall Length........................................... 1-3/4"
Maximum Seated Length........................................... 1-1/2"
Length, Base Seat to Bulb Top (excluding tip)........... 1-1/8" ± 3/32"
Maximum Diameter................................................ 3/4"
Bulb......................................................... T-5-1/2
Base......................................................... Small-Button Miniature 7-Pin
Basing Designation for BOTTOM VIEW............................ 7BN
Pin 1 - Grid No.1
Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Grid No.2
Pin 6 - Anode
Pin 7 - Grid No.2

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
### RELAY and GRID-CONTROLLED RECTIFIER SERVICE

#### Maximum Ratings, Absolute Values:

**PEAK ANODE VOLTAGE:**
- Forward: 500 max. volts
- Inverse: 500 max. volts

**GRID-No.2 (SHIELD-GRID) VOLTAGE:**
- Peak, before anode conduction: -50 max. volts
- Average, during anode conduction: -10 max. volts

**GRID-No.1 (CONTROL-GRID) VOLTAGE:**
- Peak, before anode conduction: -100 max. volts
- Average, during anode conduction: -10 max. volts

**CATHODE CURRENT:**
- Peak: 0.1 max. amp
- Average: 0.025 max. amp
- Surge, for duration of 0.1 sec. max.: 2 max. amp

**GRID-No.2 CURRENT:**
- Average: +0.005 max. amp

**GRID-No.1 CURRENT:**
- Average: +0.005 max. amp

**PEAK HEATER-CATHODE VOLTAGE:**
- Heater negative with respect to cathode: 100 max. volts
- Heater positive with respect to cathode: 25 max. volts

**Ambient Temperature Range:** -55 to +90 °C

#### Typical Operating Conditions for Relay Service:

- RMS Anode Voltage: 117 volts
- Grid No.2: Connected to cathode at socket
- RMS Grid-No.1 Bias Voltage: 5 volts
- Peak Grid-No.1 Signal Voltage: 5 volts
- Grid-No.1-Circuit Resistance: 0.1 megohm
- Anode-Circuit Resistance: 5000 ohms

#### Maximum Circuit Values:

- Grid-No.1-Circuit Resistance: 10 max. megohms

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*# Averaged over any interval of 30 sec. max.

* Approx. 180° out of phase with the anode voltage.

* Sufficient resistance, including the tube load, must be used under any conditions of operation to prevent exceeding the current ratings.
AVERAGE CONTROL CHARACTERISTICS

- εf = 6.3 VOLTS
- GRID-N° 2 RESISTOR (OHMS) = 0
- GRID-N°1 RESISTOR (OHMS) = 0

DC ANODE VOLTS
DC GRID-N°1 VOLTS
GRID-N° 2 VOLTS
OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 5696
GRID-N82 (SHIELD) VOLTS = 0
RANGES SHOWN ARE FOR TWO VALUES OF GRID RESISTOR-0.1MEG. AND 10MEG.-AND TAKE INTO ACCOUNT INITIAL DIFFERENCES BETWEEN INDIVIDUAL TUBES & SUBSEQUENT DIFFERENCES DURING TUBE LIFE, FOR A HEATER-VOLTAGE RANGE OF 5.7 TO 6.9 VOLTS AND FOR AN AMBIENT TEMPERATURE RANGE OF -55 TO +90 °C

Range for 10 Megohms
Range for 0.1 Megohm

AC ANODE VOLTS (RMS-60~)

D.C. GRID-N81 SUPPLY VOLTS
92CM-7045T

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