HIGH-MU TWIN TRIODE
9-PIN MINIATURE TYPE

For high-fidelity audio-amplifier applications critical as to noise and hum. In other respects, the 7025 is similar to the 12AX7.

**GENERAL DATA**

**Electrical:**
Heater, for Unipotential Cathodes:
- Heater arrangement: Series vs. Parallel
- Voltage: 12.6 vs. 6.3 ac or dc volts
- Current: 0.15 vs. 0.3 amp

Direct Intercathode Capacitances (Approx.):^0^ Unit No. 1 vs. Unit No. 2
- Grid to plate: 1.7 vs. 1.7 \( \mu \text{f} \)
- Grid to cathode and heater: 1.6 vs. 1.6 \( \mu \text{f} \)
- Plate to cathode and heater: 0.46 vs. 0.34 \( \mu \text{f} \)

**Equivalent Noise and Hum Voltage (Referenced to Grid):**
- Average Value (RMS): 1.8 microvolts
- Measured in "true rms" units under the following conditions:
  - heater volts = 6.3 ac (parallel connection), center-tap of heater transformer connected to ground, dc plate-supply volts = 250, plate load resistor (megohms) = 0.1, cathode resistor (ohms) = 2700, cathode-bypass capacitor (\( \mu \text{f} \)) = 100, grid resistor (ohms) = 0, and amplifier covering frequency range between 25 and 10,000 cps.
- Maximum Value (RMS): 7 microvolts
- Measured in "true rms" units under the same conditions as for "Average Value" except that the cathode resistor is unbypassed, and grid resistor (megohms) = 0.05.

**Characteristics, Class A, Amplifier (Each Unit):**
- Plate Voltage: 250 volts
- Grid Voltage: -2 volts
- Amplification Factor: 100
- Plate Resistance (Approx.): 6250 ohms
- Transconductance: 0.5 \( \mu \text{mhos} \)
- Plate Current: 1.2 ma

**Mechanical:**
- Operating Position: Any
- Maximum Overall Length: 2-3/16" to 0.750" in. to 0.875" in.
- Length, Base Seat to Bulb Top (Excluding tip): 1-9/16" ± 3/32" in. to 0.750" in. to 0.875" in.
- Diameter: 0.750" in. to 0.875" in.
- Dimensional Outline: See General Section
- Bulb: T6-1/2

^0^ See next page.
HIGH-MU TWIN TRIODE

Base ........ Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW ............... 9A

Pin 1 - Plate of
Unit No. 2
Pin 2 - Grid of
Unit No. 2
Pin 3 - Cathode of
Unit No. 2
Pins 4 & 9 - Heater of
Unit No. 2
Pins 5 & 9 - Heater of
Unit No. 1
Pin 6 - Plate of
Unit No. 1
Pin 7 - Grid of
Unit No. 1
Pin 8 - Cathode of
Unit No. 1
Pin 9 - Heater
Mid-Tap

AMPLIFIER — Class A

Values are for Each Unit

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE................. 330 max. volts
GRID VOLTAGE:
   Negative-bias value........... 55 max. volts
   Positive-bias value........... 0 max. volts
PLATE DISSIPATION............. 1.2 max. watts
PEAK HEATER-CATHODE VOLTAGE:
   Heater negative with respect to cathode. 200 max. volts
   Heater positive with respect to cathode. 200\* max. volts

Typical Operation as Resistance-Coupled Amplifier (Each Unit):

See RESISTANCE-COUPLED AMPLIFIER CHART No.25
at front of Receiving Tube Section

\* Without external shield.
\* The dc component must not exceed 100 volts.

OPERATING CONSIDERATIONS

Parallel heater arrangement is recommended for use in high-gain, resistance-coupled-amplifier applications such as in the preamplifier stages of phonographs, microphones, and tape recorders. With closely paired, electrostatically shielded heater leads, a hum-balance control is unnecessary when the center-tap of the heater transformer is connected to ground. In applications where the heater-transformer winding does not have a center-tap, a 100-ohm hum-balancing potentiometer should be connected across the heater leads with the slider connected to ground.
$E_p = 6.3$ VOLTS
PARALLEL HEATER ARRANGEMENT.
E_f = 6.3 Volts
Parallel heater arrangement.