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# 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:

	Series	Parallel	
Voltage. . . . .	12.6	6.3	ac or dc volts
Current. . . . .	0.15	0.3	. . . . . amp

Direct Interelectrode Capacitances (Approx.):<sup>o</sup>

	Unit No.1	Unit No.2	
Grid to plate. . .	1.7	1.7	. . . . . $\mu\mu\text{f}$
Grid to cathode and heater . . .	1.6	1.6	. . . . . $\mu\mu\text{f}$
Plate to cathode and heater . . .	0.46	0.34	. . . . . $\mu\mu\text{f}$

### Equivalent-Noise and Hum Voltage (Referenced to Grid):

Values are for Each Unit

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<sub>1</sub> Amplifier (Each Unit):

Plate Voltage. . . . .	100	250	volts
Grid Voltage . . . . .	-1	-2	volts
Amplification Factor . . . . .	100	100	
Plate Resistance (Approx.) . . . . .	80000	62500	ohms
Transconductance . . . . .	1250	1600	$\mu\text{mhos}$
Plate Current . . . . .	0.5	1.2	ma

### Mechanical:

Operating Position . . . . .	Any
Maximum Overall Length . . . . .	2-3/16"
Maximum Seated Length. . . . .	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip) . . . . .	1-9/16" $\pm$ 3/32"
Diameter . . . . .	0.750" to 0.875"
Dimensional Outline. . . . .	See General Section
Bulb . . . . .	T6-1/2

<sup>o</sup>: See next page.



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

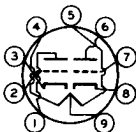
Pin 1 - Plate of  
 Unit No.2

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<sub>1</sub>

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 <sup>▲</sup> max.	volts

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

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

<sup>○</sup> Without external shield.

<sup>▲</sup> The dc component must not exceed 100 volts.

## OPERATING CONSIDERATIONS

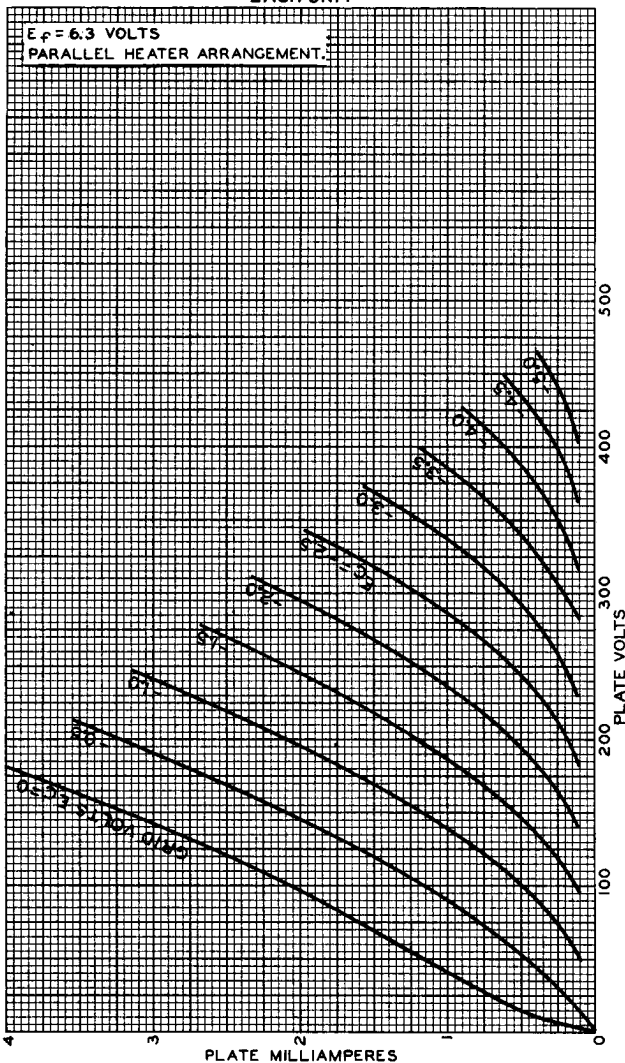
*Parallel heater arrangement* is recommended for use in high-gain, resistance-coupled-amplifier applications such as in the preamplifier stages of phonographs, microphones, and tape recorders. With closely paired, electrostatically shielded heater leads, a hum-balance control is unnecessary when the 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.



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# AVERAGE PLATE CHARACTERISTICS EACH UNIT

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# AVERAGE CHARACTERISTICS EACH UNIT

