



12K5

POWER TETRODE

7-PIN MINIATURE, SPACE-CHARGE-GRID TYPE

For use in automobile radio receivers operating directly from 12-volt storage batteries

12K5

GENERAL DATA

Electrical:

Heater*, for Unipotential Cathode:

Voltage range. . . . 10.0 to 15.9 dc volts

This voltage range is on an absolute basis. For longest life, it is recommended that the heater be operated within the voltage range of 11 to 14 volts.

Current (Approx.)

at 12.6 volts. 0.4 amp

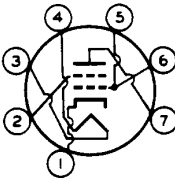
Characteristics, Class A1 Amplifier with 12.6 Volts on Heater:

Table with 3 columns: Parameter, Value, Unit. Includes Plate Voltage (12.6 volts), Grid-No.2 Voltage (-0.5 volt), Grid-No.1 Voltage (12.6 volts), Plate Resistance (480 ohms), Amplification Factor (7.2), Transconductance (15000 umhos), Plate Current (40 ma), Grid-No.1 Current (75 ma).

Mechanical:

- Operating Position Any
Maximum Overall Length 2-5/8"
Maximum Seated Length 2-3/8"
Length, Base Seat to Bulb Top (Excluding tip) . . . 2" ± 3/32"
Maximum Diameter 3/4"
Dimensional Outline See General Section
Bulb T5-1/2
Base Small-Button Miniature 7-Pin (JETEC No.E7-1)
Basing Designation for BOTTOM VIEW 7FD

- Pin 1 - Cathode
Pin 2 - Grid No.2
Pin 3 - Heater
Pin 4 - Heater



- Pin 5 - Grid No.1
Pin 6 - Grid No.1
Pin 7 - Plate

AUDIO-DRIVER SERVICE

Maximum Ratings, Design-Center Values Except as Noted:

Table with 3 columns: Parameter, Value, Unit. Includes PLATE VOLTAGE (30 max. volts), GRID-No.2 VOLTAGE (Negative bias value -20 max. volts), GRID-No.1 VOLTAGE (Absolute maximum 16 max. volts), PEAK HEATER-CATHODE VOLTAGE (Heater negative with respect to cathode 30 max. volts, Heater positive with respect to cathode 30 max. volts).

* , ■: See next page.

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Typical Operation with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.2 Voltage:		
Obtained by rectification through 2.2- megohm resistor.	-2	volts
Peak AF Grid-No.2 Voltage:		
Obtained from 100000-ohm source.	2.5	volts
Grid-No.1 Voltage.	12.6	volts
Zero-Signal Plate Current.	40	ma
Max.-Signal Plate Current.	8	ma
Grid-No.1 Current.	75	ma
Load Resistance.	800	ohms
Total Harmonic Distortion.	10	%
Max.-Signal Power Output	40	mw

Maximum Circuit Values:

Grid-No.2-Circuit Resistance 10 max. megohms

- Operation of heater in series with other heaters is not recommended.
- Under no circumstances should this absolute value be exceeded.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12K5, except the rating for grid-No.1 (space-charge-grid) voltage, are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

In the case of storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. This fluctuation imposes severe operating conditions on tubes. Under these conditions, the equipment should be designed so that 90 per cent of the design-center maximum values of plate voltage, grid-No.2 voltage, plate dissipation, and grid-No.2 input is never exceeded for a battery-terminal potential of 13.2 volts. Although the operating voltages of the 12K5 in this service will, at times, exceed the design-center maximum values, satisfactory performance with probable sacrifice in life will be obtained.