12K5

POWER TETRODE

7-PIN MINIATURE, SPACE-CHARGE-GRID TYPE

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

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

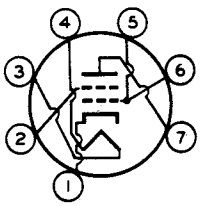
Characteristics, Class A_1 Amplifier with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.2 (Control-Grid) Voltage	-0.5	volt
Grid-No.1 (Space-Charge-Grid) Voltage. .	12.6	volts
Plate Resistance (Approx.)	480	ohms
Amplification Factor, Grid No.2 to Plate.	7.2	
Transconductance, Grid No.2 to Plate . .	15000	μmhos
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:*

PLATE VOLTAGE.	30	max.	volts
GRID-No.2 (CONTROL-GRID) VOLTAGE:			
Negative bias value.	-20	max.	volts
GRID-No.1 (SPACE-CHARGE-GRID) 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.

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

RCA

12K5

POWER TETRODE

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.

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY