

12K5 TETRODE

FOR AF DRIVER APPLICATIONS IN AUTOMOBILE
RECEIVERS

DESCRIPTION AND RATING

The 12K5 is a miniature space-charge-grid tetrode intended for use as a driver for the transistor power-output stage of automobile radio receivers. The tube is specially designed to operate with its plate and space-charge-grid voltages supplied directly from a 12-volt storage battery.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
 Heater Voltage, AC or DC 12.6* Volts
 Heater Current 0.4 Amperes

MECHANICAL

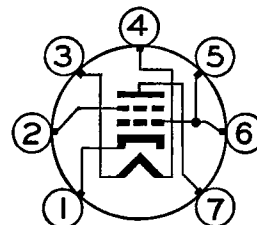
Mounting Position—Any
 Envelope—T-5½, Glass
 Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	30	Volts
Negative Control-Grid Voltage	20	Volts
Space-Charge-Grid Supply Voltage	30	Volts
Space-Charge-Grid Voltage	16†	Volts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	30	Volts
Heater Negative with Respect to Cathode	30	Volts
Control-Grid Circuit Resistance	10	Megohms

BASING DIAGRAM

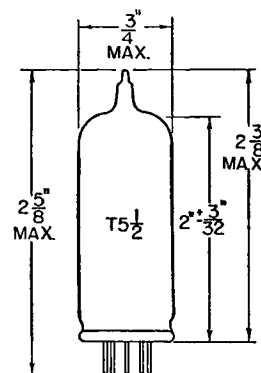


RETMA 7EK

TERMINAL CONNECTIONS

- Pin 1—Cathode
- Pin 2—Grid Number 2 (Control Grid)
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Grid Number 1 (Space-Charge Grid)
- Pin 6—Grid Number 1 (Space-Charge Grid)
- Pin 7—Plate

PHYSICAL DIMENSIONS



RETMA 5-3

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	12.6	Volts
Control-Grid Voltage	-2.5	Volts
Space-Charge-Grid Voltage	12.6	Volts
Amplification Factor †	5.4	
Plate Resistance	540	Ohms
Transconductance †	10000	Micromhos
Plate Current	10	Milliamperes
Space-Charge-Grid Current	85	Milliamperes

CLASS A₂ AMPLIFIER

Plate Voltage	12.6	Volts
Control-Grid Voltage	-2.0 §	Volts
Space-Charge-Grid Voltage	12.6	Volts
Peak AF Control-Grid Voltage	2.5	Volts
AF Signal Source Resistance	100000	Ohms
Maximum-Signal Plate Current	8.0	Milliamperes
Space-Charge-Grid Current	85	Milliamperes
Load Resistance	800	Ohms
Total Harmonic Distortion, approximate	10	Percent
Power Output	40	Milliwatts

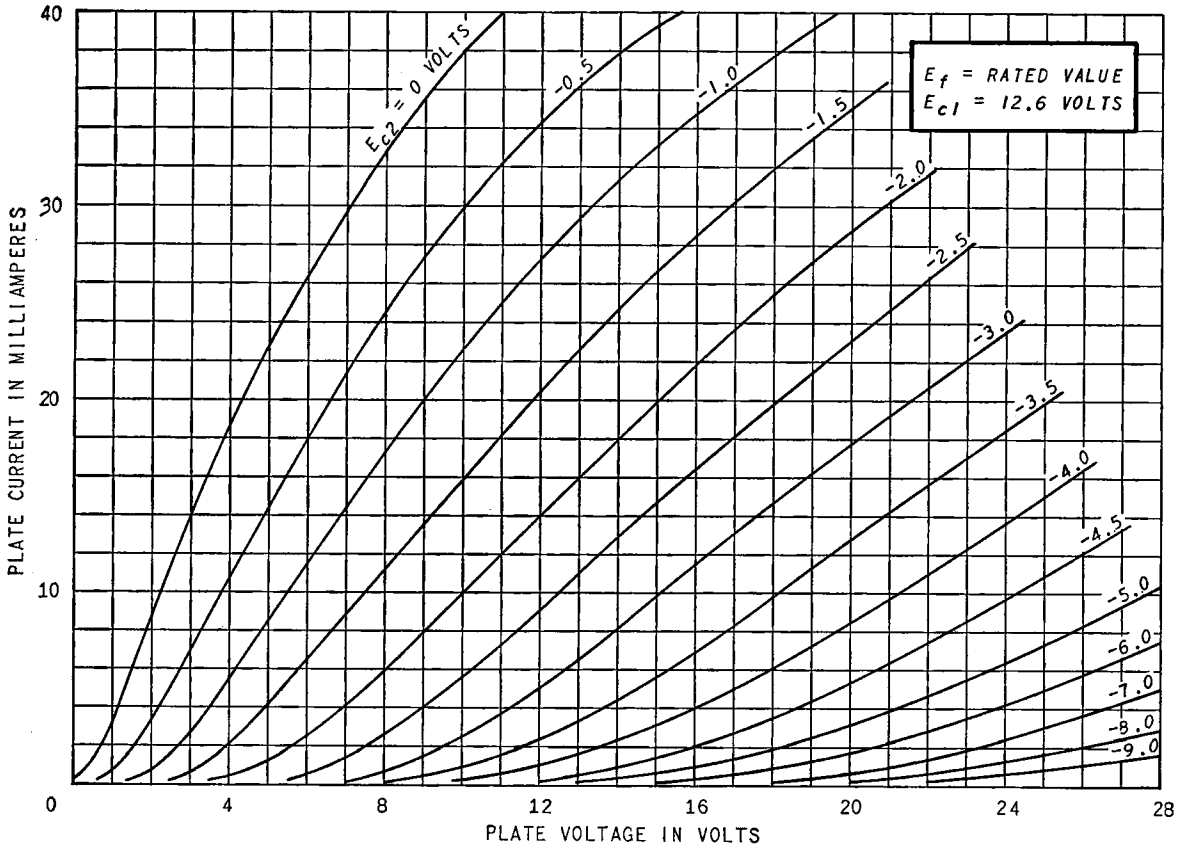
* When used in automotive service from a 12-volt source, under no circumstances should the heater voltage be less than 10.0 volts or more than 15.9 volts. These extreme variations in heater voltage may be tolerated for short periods; however, operation at or near these absolute limits in heater voltage necessarily involves sacrifice in performance at low heater voltage and in life expectancy at high heater voltage. Equipment reliability can be significantly increased with improved supply-voltage regulation.

† Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

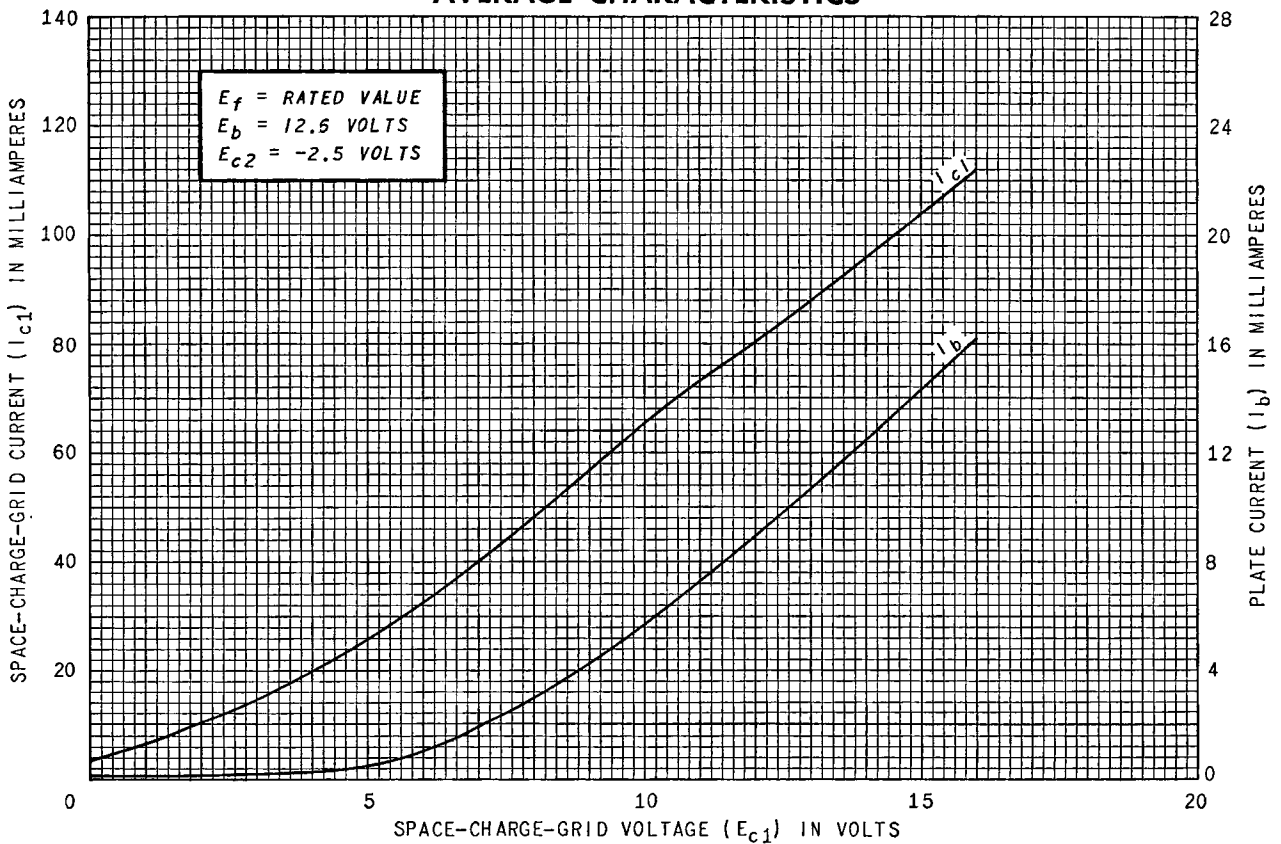
‡ Control Grid to Plate

§ Obtained by control-grid rectification in which case the zero-signal plate current is approximately 35 milliamperes.

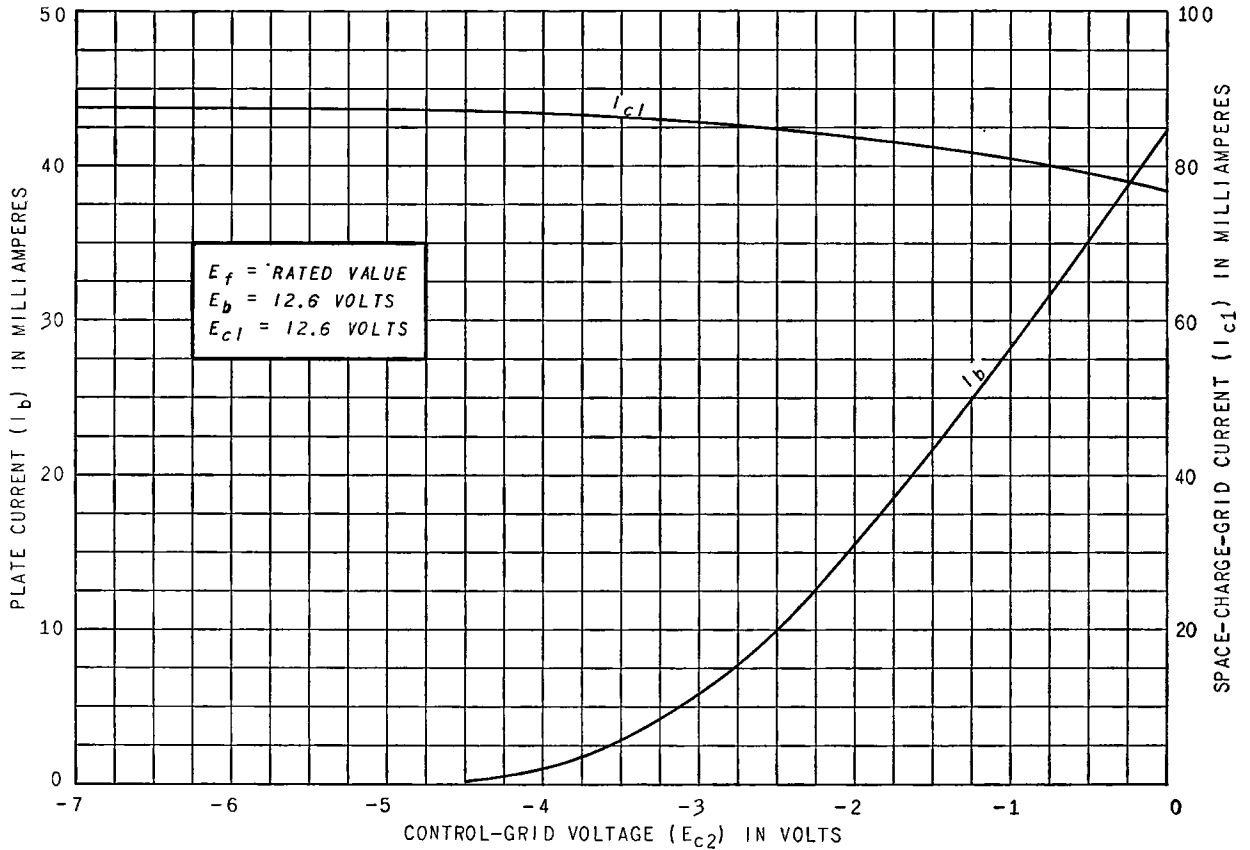
AVERAGE PLATE CHARACTERISTICS



AVERAGE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.