

DESCRIPTION AND RATING

The 18FX6 is a miniature heptode designed to perform the combined functions of the mixer and oscillator in line-operated superheterodyne radio receivers having 100-milliampere, series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC..... $18 \pm 10\%$ Volts
Heater Current..... 0.1 Amperes

Direct Interelectrode Capacitances	With Shield*	Without Shield	
Grid-Number 3 to Plate: (g3 to p).....	0.25	0.30	$\mu\mu\text{f}$
Grid-Number 3 to Grid-Number 1: (g3 to g1)....	0.15	0.15	$\mu\mu\text{f}$
RF Input: g3 to (h+k+g1+g2, 4+g5+p).....	7.0	7.0	$\mu\mu\text{f}$
Oscillator Input: g1 to (h+k+g2, 4+g3+g5+p)	5.5	5.5	$\mu\mu\text{f}$
Mixer Output: p to (h+k+g1+g2, 4+g3+g5)	13	8.0	$\mu\mu\text{f}$
Grid-Number 1 to Cathode: (g1 to k).....	3.0	3.0	$\mu\mu\text{f}$
Oscillator Output: k to (h+g2, 4+g3+g5+p)...	20	15	$\mu\mu\text{f}$
Grid-Number 1 to Plate: (g1 to p).....	0.05	0.10	$\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any

Envelope—T-5 1/2, Glass

Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage.....	150	Volts
Screen-Supply Voltage.....	150	Volts
Screen Voltage.....	110	Volts
Plate Dissipation.....	1.0	Watts
Screen Dissipation.....	1.2	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode.....	100	Volts
Heater Negative with Respect to Cathode.....	100	Volts

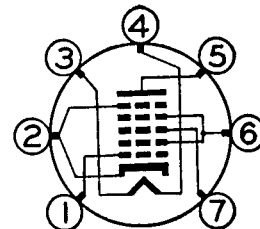
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

BASING DIAGRAM

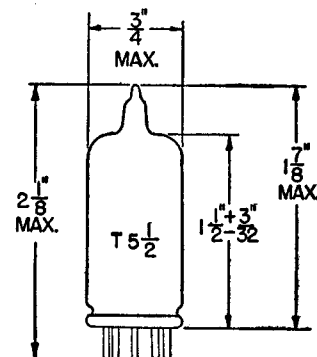


EIA 7CH

TERMINAL CONNECTIONS

- Pin 1—Grid Number 1 (Oscillator Grid)
- Pin 2—Cathode and Grid Number 5
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Plate
- Pin 6—Grids Number 2 and 4 (Screen)
- Pin 7—Grid Number 3 (Mixer Grid)

PHYSICAL DIMENSIONS



EIA 5-2

CHARACTERISTICS AND TYPICAL OPERATION

CONVERTER SERVICE†

Plate Voltage.....	100	Volts
Screen Voltage.....	100	Volts
Grid-Number 3 Voltage.....	-1.5	Volts
Grid-Number 1 Resistance.....	20000	Ohms
Plate Resistance, approximate.....	0.4	Megohms
Conversion Transconductance.....	480	Micromhos
Plate Current.....	2.3	Milliamperes
Screen Current.....	6.2	Milliamperes
Grid-Number 1 Current.....	0.5	Milliamperes
Cathode Current.....	9.0	Milliamperes
Grid-Number 3 Voltage, approximate G _c = 10 Micromhos.....	-21	

OSCILLATOR CHARACTERISTICS (Not Oscillating)

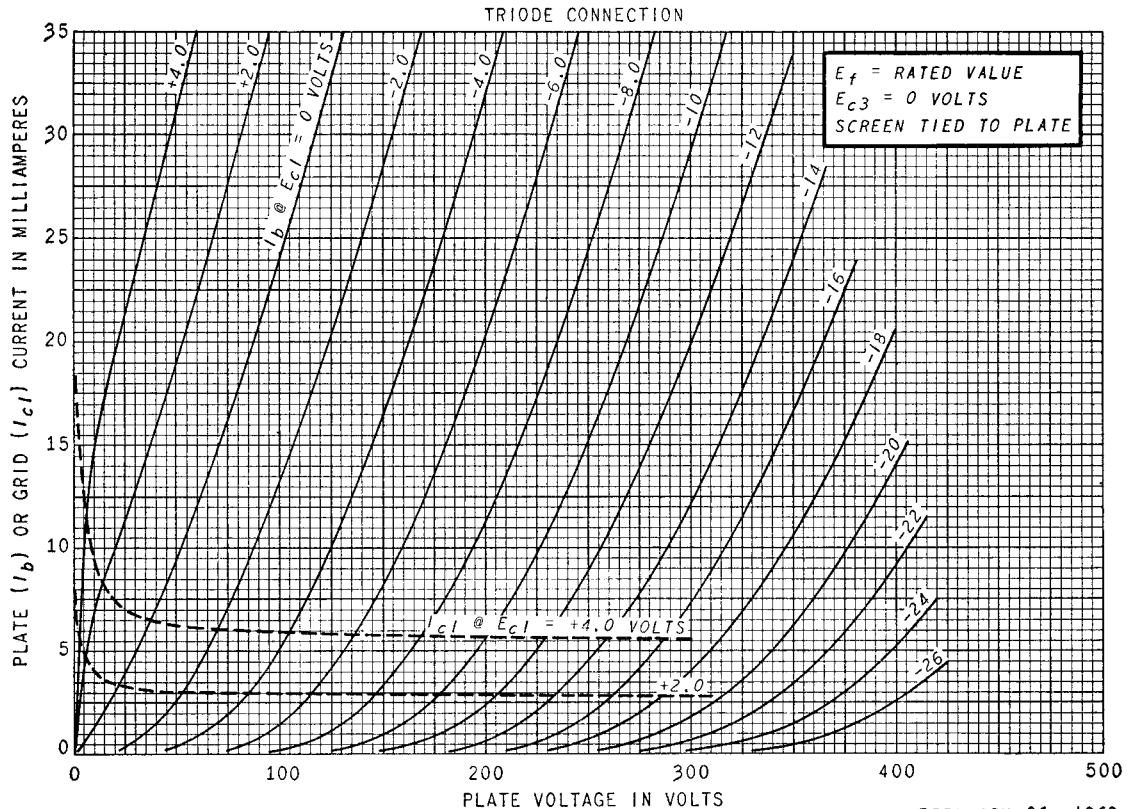
Plate Voltage.....	100	Volts
Screen, Connected to Plate		
Grid-Number 3 Voltage.....	0	Volts
Grid-Number 1 Voltage.....	0	Volts
Amplification Factor #.....	22	
Transconductance #.....	7000	Micromhos
Cathode Current.....	24	Milliamperes
Grid-Number 1 Voltage, approximate I _b = 20 Microamperes.....	-9.2	Volts

* With external shield (EIA 316) connected to pin 2.

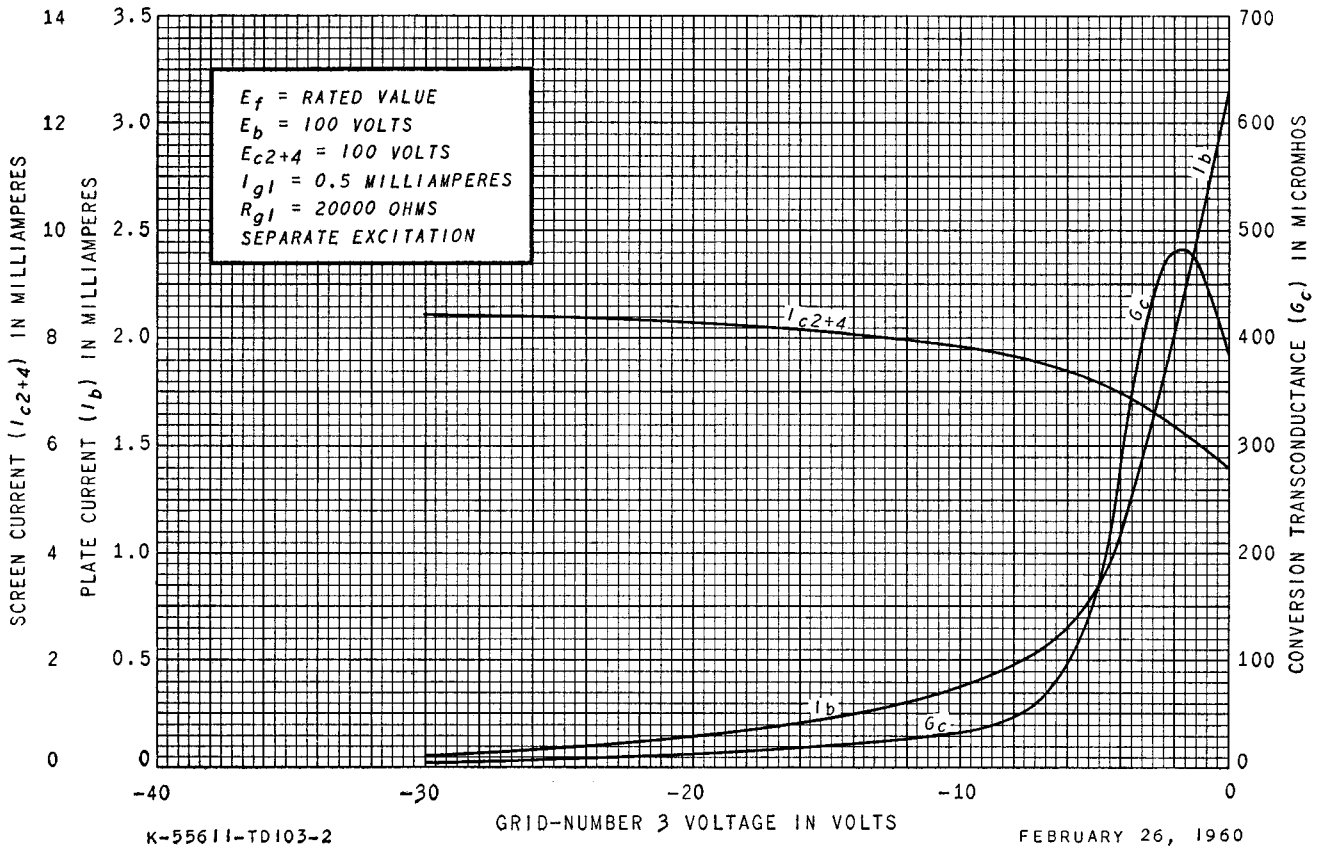
† Characteristics shown are obtained in the standard EIA conversion conductance test set which uses separable excitation. The characteristics under these conditions correspond very closely with those obtained in a self-excited oscillatory circuit operating with zero bias.

Between grid number 1 and grids number 2 and 4 connected to plate.

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

