

## DUPLEX-DIODE TRIODE

FOR DETECTOR AND AF-DRIVER APPLICATIONS IN  
AUTOMOBILE RECEIVERS

### DESCRIPTION AND RATING

The 12FM6 is a miniature, duplex-diode triode for use as a combined detector, AVC rectifier, and transistor driver. The tube is specially designed to operate with its plate voltage supplied directly from a 12-volt storage battery.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential		
Heater Voltage, AC or DC.....	12.6*	Volts
Heater Current.....	0.15	Amperes
Direct Interelectrode Capacitances†		
Triode Grid to Plate.....	1.7	μμf
Triode Input.....	2.7	μμf
Triode Output.....	1.7	μμf
Diode Plate to Diode Plate.....	1.1	μμf

##### MECHANICAL

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

#### MAXIMUM RATINGS

##### DESIGN-CENTER VALUES

Plate Voltage.....	30	Volts
DC Cathode Current.....	20	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode.....	30	Volts
Heater Negative with Respect to Cathode.....	30	Volts
Grid Circuit Resistance.....	10	Megohms
Diode Current for Continuous Operation, Each Diode.....	1.0	Milliamperes

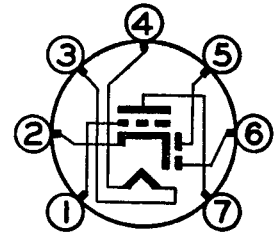
Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all tubes.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply-voltage.

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

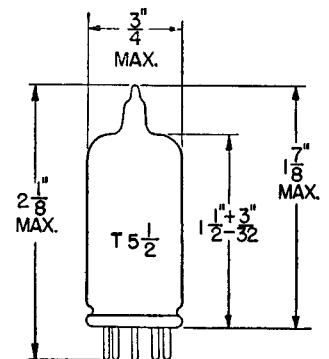


EIA 7BT

#### TERMINAL CONNECTIONS]

- Pin 1—Triode Grid
- Pin 2—Cathode
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Diode Number 2 Plate
- Pin 6—Diode Number 1 Plate
- Pin 7—Triode Plate

#### PHYSICAL DIMENSIONS



EIA 5-2

## CHARACTERISTICS AND TYPICAL OPERATION

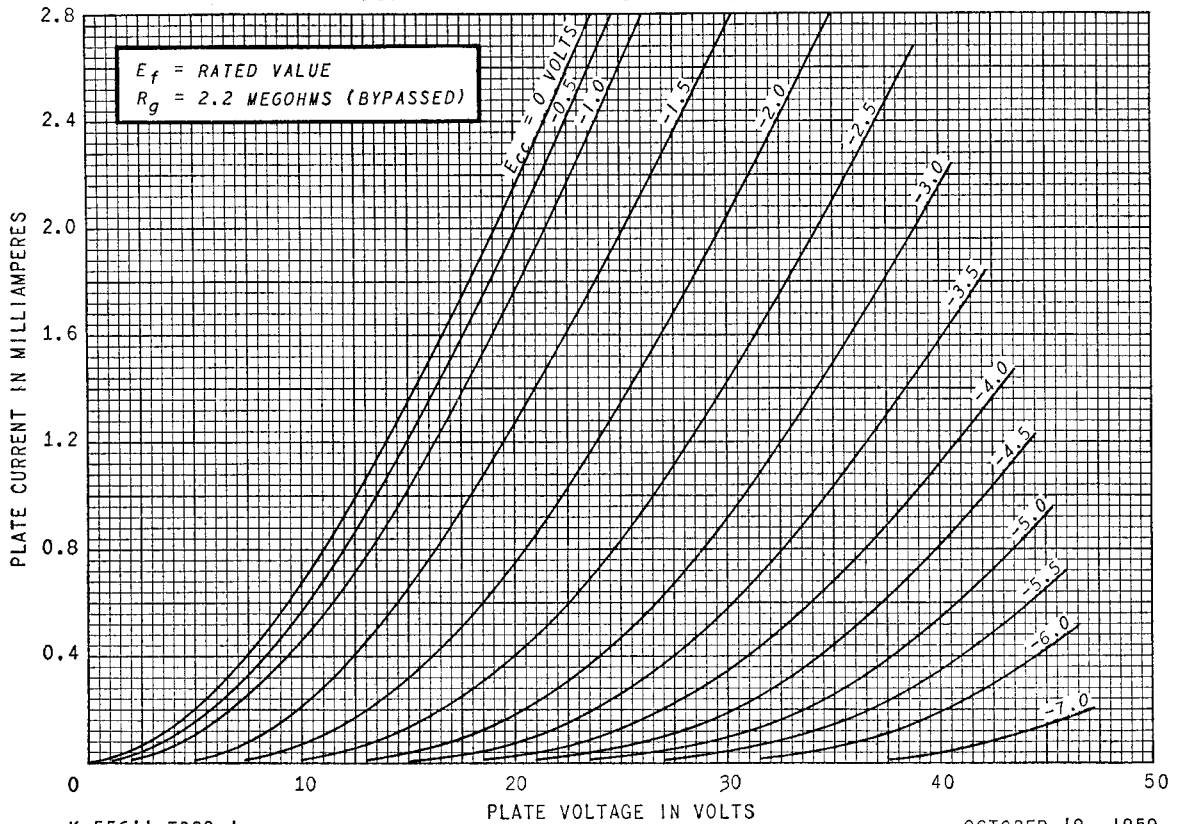
### AVERAGE CHARACTERISTICS

Plate Voltage .....	12.6	12.6 Volts
Grid Resistor .....	0	2.2 Megohms
Grid Voltage .....	0	... Volts
Amplification Factor .....	13.5	10
Plate Resistance, approximate .....	5600	7700 Ohms
Transconductance .....	2400	1300 Micromhos
Plate Current .....	1.8	1.0 Milliamperes
Average Diode Current, Each Diode		
With 10 Volts DC Applied .....	2.0	Milliamperes

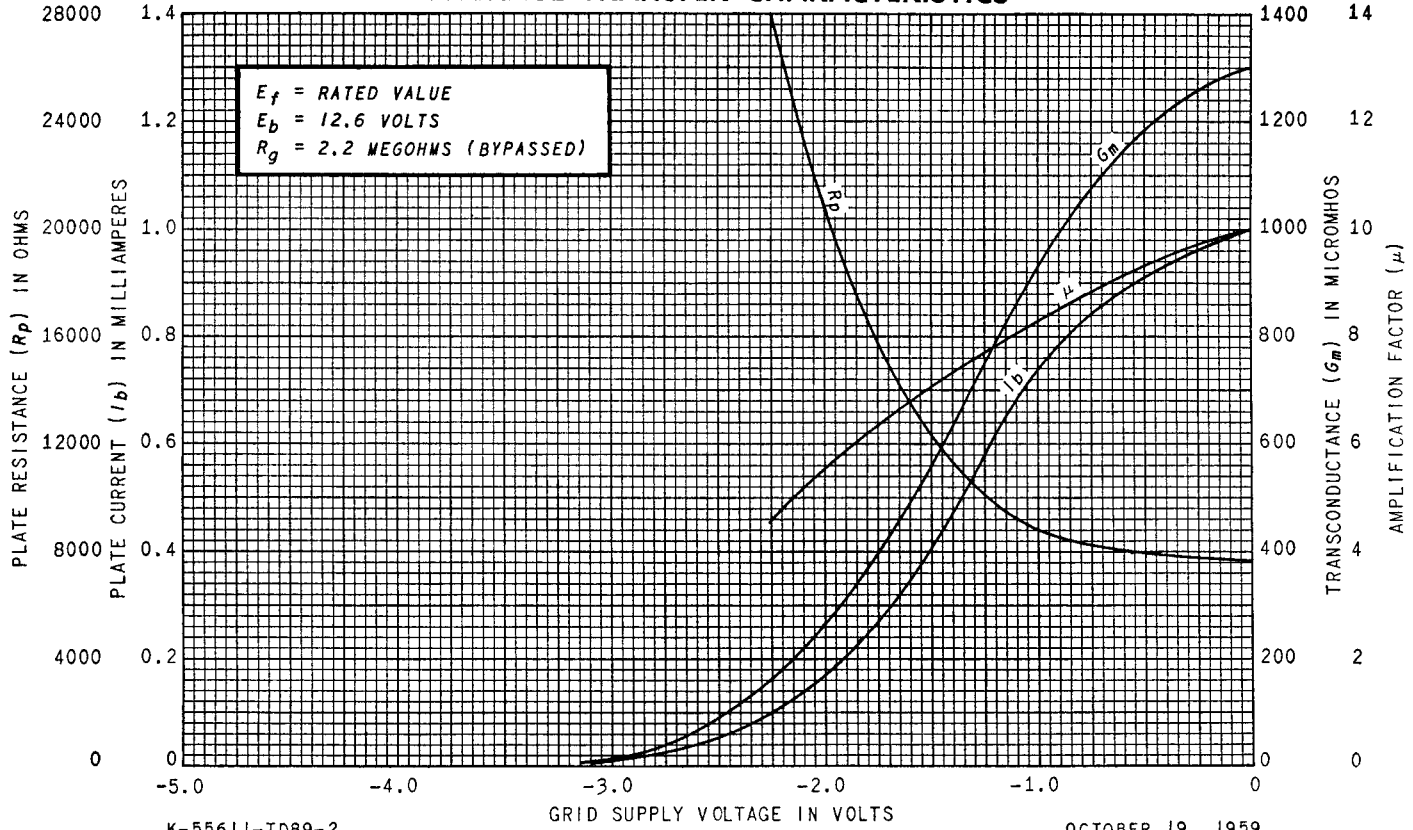
\* When used in automobile service from a 12-volt source, under no circumstances should the heater voltage be less than 10.0 volts or more than 15.9 volts. These extreme variations in heater voltage may be tolerated for short periods; however, operation at or near these absolute limits in heater voltage 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.

† Without external shield.

### AVERAGE PLATE CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD89-2

OCTOBER 19, 1959