Semiremote-Cutoff Pentode

7-PIN MINIATURE TYPE
For Intermediate-Frequency-Amplifier Applications in FM, AM, and AM/FM Receivers
With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical:
Heater Characteristics and Ratings (Design-Maximum Values):
Voltage (AC or DC)........... 6.3a 6.3 ± 0.6 volts
Current.................. 0.450 ± 0.030 0.450b amp
Warm-up time (Average)..... 11 sec
Peak heater-cathode voltage:
Heater negative with respect to cathode........ 200 max. volts
Heater positive with respect to cathode..... 200c max. volts
Direct Interelectrode Capacitances:
Grid No.1 to plate.................. 0.006 max. μf
Grid No.1 to cathode, grid No.3 & internal shield, grid No.2, and heater........ 8.8 μf
Plate to cathode, grid No.3 & internal shield, grid No.2, and heater........ 5.2 μf

Characteristics, Class A1 Amplifier:
Plate Supply Voltage.............. 200 volts
Grid No.3.................... Connected to cathode at socket
Grid-No.2 Supply Voltage........ 115 volts
Grid-No.1 Supply Voltage........ 0 volts
Cathode Resistor................. 68 ohms
Plate Resistance (Approx.)........ 0.5 meegohm
Transconductance............ 8500 μmhos
Plate Current.................. 13.2 ma
Grid-No.2 Current.............. 4.3 ma
Grid-No.1 Voltage (Approx.) for transconductance (μmhos) = 60........... −15 volts

Mechanical:
Operating Position................ Any
Type of Cathode................ Coated Unipotential
Maximum Overall Length........... 2-1/8"
Maximum Seated length............. 1-7/8"
Length, Base Seat to Bulb Top (Excluding tip)... 1-1/2" ± 3/32""
Diameter.......................... 0.650" to 0.750""
Dimensional Outline.............. See General Section
Bulb.......................... Small-Button Miniature 7-Pin (JEDEC No.E7-1)
Basing Designation for BOTTOM VIEW: 7BK

Pin 1 - Grid No.1
Pin 2 - Grid No.3, Internal Shield
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Grid No.2
Pin 7 - Cathode

AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE: 300 max. volts
GRID No.3 (SUPPRESSOR GRID): Connect to cathode at socket
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE: 300 max. volts
GRID-No.2 VOLTAGE: See Grid-No. 2 Input Rating Chart at front of Receiving Tube Section
GRID-No.1 (CONTROL-GRID) VOLTAGE:
   Negative-bias value: 50 max. volts
   Positive-bias value: 0 max. volts
GRID-No.2 INPUT:
   For grid-No.2 voltages up to 150 volts: 1 max. watt
   For grid-No.2 voltages between 150 and 300 volts: See Grid-No. 2 Input Rating Chart at front of Receiving Tube Section
PLATE DISSIPATION: 3 max. watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:
   For fixed-bias operation: 0.5 max. megohm
   For cathode-bias operation: 1 max. megohm

a At heater amperes = 0.450.
b At heater volts = 6.3.
c The dc component must not exceed 100 volts.
d Without external shield.
AVERAGE CHARACTERISTICS

E_t = 6.3 VOLTS
GRID No.3 CONNECTED TO CATHODE AT SOCKET.
GRID No.2 VOLTS = 115

PLATE (I_b) OR GRID-No.2 (I_c2) MILLIAMPERES

GRID-No.1 VOLTS = 1250

PLATE VOLTS

92CM-11530
AVERAGE CHARACTERISTICS

$E_t = 6.3$ VOLTS
PLATE VOLTS  = 200
GRID No.3 CONNECTED
TO CATHODE AT SOCKET.
GRID-No.2 VOLTS = 115

PLATE (I_b) OR GRID-No.2 (I_C') MILLIAMPERES

GRID-No.1 VOLTS

TRANSCONDUCTANCE (g_m) — MICROMHOS

92CM—II533