The 6K8G is a duplex tube containing a triode unit and a hexode unit with a common cathode, in the same envelope. The grid of the triode unit is common with the injector grid of the hexode unit. It is designed for converter service in superheterodyne receivers and will oscillate readily with good frequency stability in the high frequency bands.

BULB: ST-12  BASE: Small Shell Cotal 8-pin  GAP: Skirted Miniature
DIMENSIONS: Maximum Overall Length 4 15/32"  Maximum Diameter 1 9/16"

BASING (RMA Numbering)
Pin 1-No Connection  Pin 5-Hexode Grid #1 & Triode Grid
Pin 2-Heater  Pin 6-Triode Plate
Pin 3-Hexode Plate  Pin 7-Heater
Pin 4-Hexode Screen(Grid#2 & 4)  Pin 8-Cathode & Internal Shields
  Gap - Hexode Grid #3

RATINGS
Heater Voltage (a-c or d-c) 6.3 volts
Heater Current 0.3 amp
Maximum Hexode Plate Voltage 250 volts
Maximum Hexode Screen Voltage 100 volts
Minimum Hexode Control Grid Bias 3 volts
Maximum Triode Plate Voltage 200 volts
Maximum Total Cathode Current 16 ma

DIRECT INTERELECTRODE CAPACITANCES (Approx.)
G6H to PH = Mixer Grid to Plate 0.04 µf
G6H to PT = Mixer Grid to Oscillator Plate 0.01 µf
G6H to GT&G1H = Mixer Grid to Oscillator Grid 0.1 µf
GT&G1H to PT = Oscillator Grid to Plate 2.0 µf
G6H to All Other Electrodes = R-F Input Electrode 5.5 µf
PT to All Other Electrodes except GT&G1H=Osc. Output Elec. 4.0 µf
GT&G1H to All Other Electrodes except PT=Osc. Input Elec. 7.0 µf
PH to All Other Electrodes = Mixer Output Electrode 5.5 µf

FREQUENCY CONVERTER
Hexode Plate Voltage 100 250 volts
Hexode Screen Voltage 100 100 volts
Hexode Control Grid Bias -3 -3 volts
Triode Plate Voltage 100 100 volts
Triode Grid Resistor 50000 50000 ohms
Hexode Plate Resistance (approx.) 0.4 0.6 megohm
Conversion Transconduction 325 350 µmhos
Hexode Control Grid Bias (approx.) -30 -30 volts
(For Conversion Transconduction 2 µmhos)
Hexode Plate Current 2.3 2.5 ma
Hexode Screen Current 6.0 6.0 ma
Triode Plate Current 3.8 3.8 ma
Triode Grid & Hexode Grid #1 Current 0.15 0.15 ma

The transconduction of the oscillator section (not oscillating) is approximately 3000 µmhos when the triode plate voltage is 100 volts and the triode grid voltage is 0 volts.

* With tube shield connected to cathode.

May 20, 1938
CONVERSION TRANSCONDUCTANCE VS. CONTROL GRID BIAS

6K8 - 6K8G

$E_f = 6.3\text{V}$  $I_{CT} = 0.15\text{mA}$  $R_{ef} = 5000\Omega$

$E_{BH} = 250\text{V}$  $E_{R2} = 100\text{V}$

$E_{BH} = 100\text{V}$  $E_{R2} = 100\text{V}$

CONTROL GRID BIAS - VOLTS