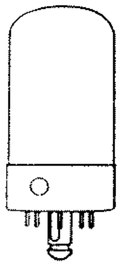
7B8 Sylvania Type

HEPTODE CONVERTER

GT EQUIVALENT 6A8GT



8X-L-0

PHYSICAL SPECIFICATIONS

Base	Lock-In 8 Pin
Bulb	T9
Maximum Overall Length	$2^{25}/_{32}$"
Maximum Seated Height	$2\ 1/4$"
Mounting Position	Any

RATINGS

Heater Voltage AC or DC (Nominal)	7.0 Volts
Heater Current (Nominal)	0.32 Ampere
Maximum Plate Voltage	300 Volts
Maximum Screen Voltage	100 Volts
Maximum Screen Supply	300 Volts
Maximum Anode Grid Voltage	200 Volts
Maximum Anode Grid Supply	300 Volts
Maximum Plate Dissipation	1.0 Watt
Maximum Screen Dissipation	0.3 Watt
Maximum Anode Grid Dissipation	0.75 Watt
Maximum Cathode Current	14 Ma.
Minimum Signal Grid Bias	0 Volt
Maximum Heater-Cathode Voltage	90 Volts

Direct Interelectrode Capacitances:*

Grid G to Plate	0.2 μμf. Max.
Grid G to Grid Ga	0.2 μμf. Max
Grid G to Grid Go	0.2 μμf. Max.
Grid Go to Grid Ga	0.9 μμf.
Grid G to all Electrodes (R-F Input)	10.0 μμf.
Grid Ga to all Electrodes except Go (Osc. Output)	3.4 μμf.
Grid Go to all Electrodes except Ga (Osc. Input)	5.0 μμf.
Plate to all Electrodes (Mixer Output)	9.0 μμf.

*With $1^{5}/_{16}$" diameter shield (RMA Std. M8-308) connected to cathode.

TYPICAL OPERATION

Heater Voltage	6.3	6.3 Volts
Heater Current	0.3	0.3 Ampere
Plate Voltage	100	250 Volts
Screen Voltage	50	100 Volts
Anode Grid Voltage	100	250** Volts
Control Grid (G) Voltage	−1.5	−3.0 Volts
Oscillator Grid (Go) Resistor	50000	50000 Ohms
Plate Current	1.1	3.5 Ma.
Screen Grid Current	1.3	2.7 Ma.
Anode Grid Current	2.0	4.0 Ma.
Oscillator Grid Current	0.25	0.4 Ma.
Self-Bias Resistor	360	300 Ohms
Plate Resistance	0.6	0.36 Megohm
Conversion Conductance	360	550 μmhos
Control Grid Voltage (Approximate)		
For 6 μmhos Conversion Conductance	.....	−35 Volts
For 3 μmhos Conversion Conductance	−20	..... Volts

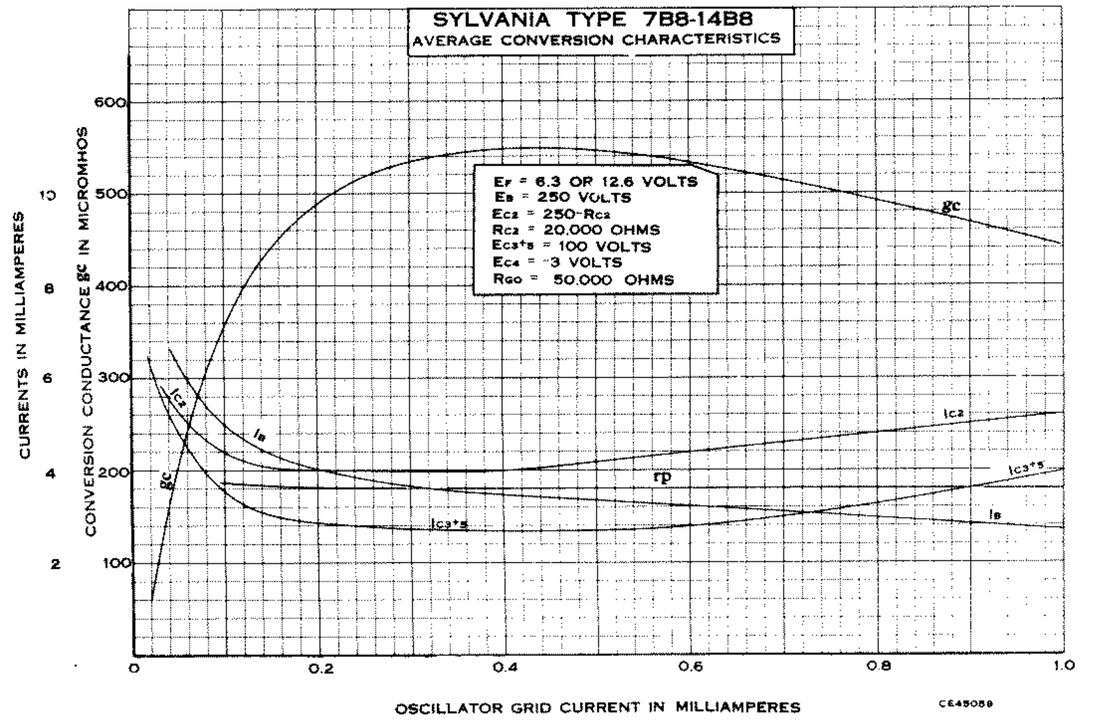
**Applied through 20,000 ohm dropping resistor.

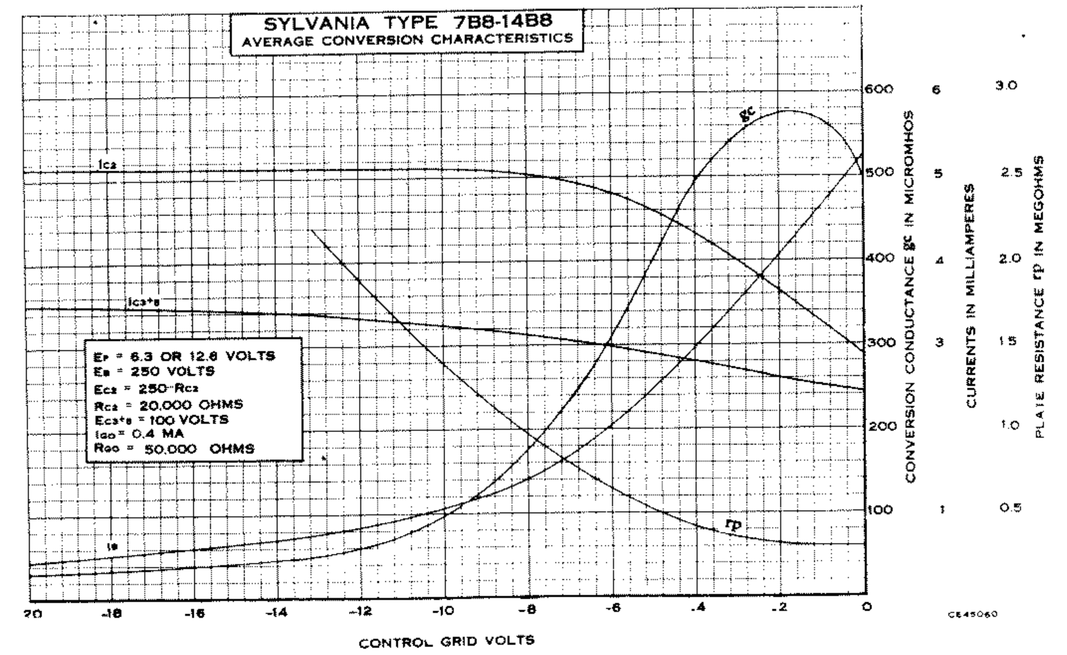
The oscillator section, not oscillating, has a Gm of 1150 μmhos, a mu of 75 at an anode grid current of 4.0 ma. when Ep = 250 Volts; Ega = 100 Volts; Egs = 55 Volts; Eg = 2.0 Volts and Ego = −1.0 Volt.

APPLICATION

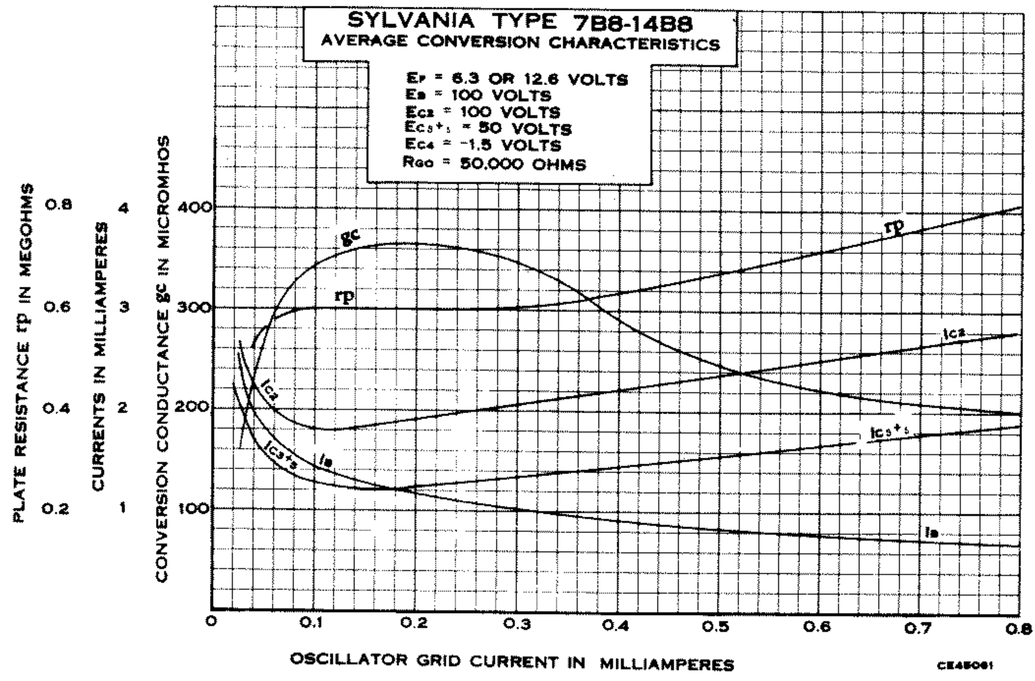
Sylvania Type 7B8 is a lock-in converter tube designed for use in AC or auto receivers. For AC-DC service, Type 14B8 with lower heater current rating will usually prove more satisfactory.

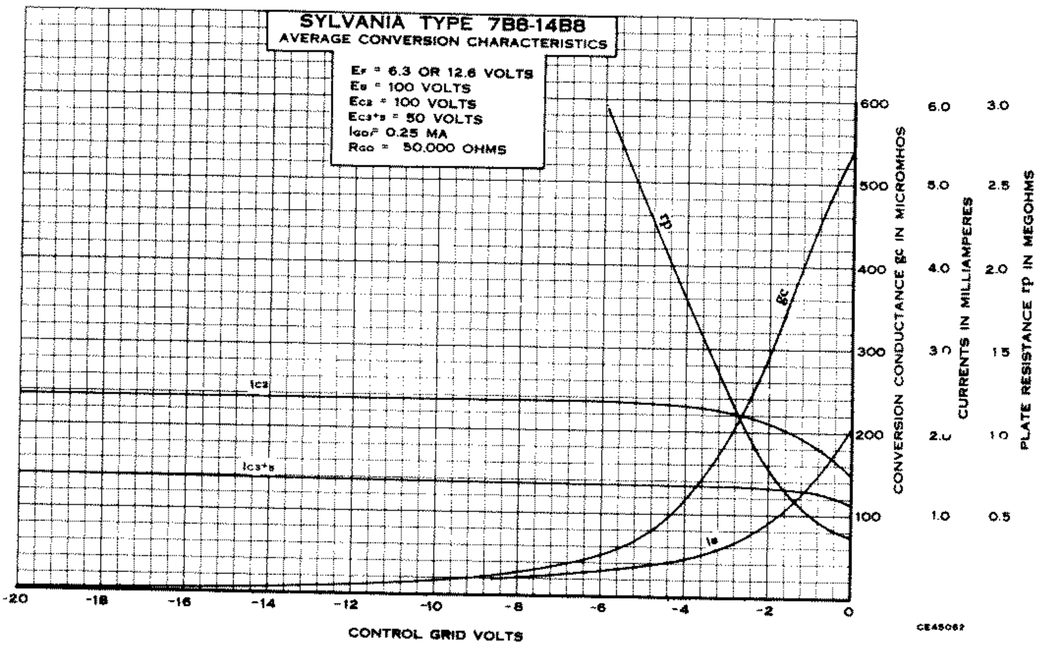
Electrically, Type 7B8 is similar to the older oscillator mixer tubes. Conventional circuits and design are readily adaptable for use with this compact rugged tube. As is usual with converter tubes, it is well to ascertain that the maximum cathode current does not exceed the rated limit under any encountered operating condition.


SYLVANIA TYPE 7B8-14B8
AVERAGE CONVERSION CHARACTERISTICS
Ef = 6.3 OR 12.6 VOLTS
Eb = 250 VOLTS
Ec2 = 250-Rc2
Rc2 = 20,000 OHMS
Ec3+s = 100 VOLTS
Ec4 = -3 VOLTS
Rgo = 50,000 OHMS
gc
Ic2
Ib
rp
Ic3+s
CURRENTS IN MILLIAMPERES
CONVERSION CONDUCTANCE gc IN MICROMHOS
OSCILLATOR GRID CURRENT IN MILLIAMPERES
CE45059


SYLVANIA TYPE 7B8-14B8
AVERAGE CONVERSION CHARACTERISTICS
Ef = 6.3 OR 12.6 VOLTS
Eb = 250 VOLTS
Ec2 = 250-Rc2
Rc2 = 20,000 OHMS
Ec3+s = 100 VOLTS
Ig0 = 0.4 MA
Rgo = 50,000 OHMS
gc
Ic2
Ic3+s
Ib
rp
CONVERSION CONDUCTANCE gc IN MICROMHOS
CURRENTS IN MILLIAMPERES
PLATE RESISTANCE rp IN MEGOHMS
CONTROL GRID VOLTS
CE45060

7B8 (Cont.)


SYLVANIA TYPE 7B8-14B8
AVERAGE CONVERSION CHARACTERISTICS
Ef = 6.3 OR 12.6 VOLTS
Eb = 100 VOLTS
Ec2 = 100 VOLTS
Ec3+1 = 50 VOLTS
Ec4 = -1.5 VOLTS
Rgc = 50,000 OHMS
PLATE RESISTANCE rp IN MEGOHMS
CURRENTS IN MILLIAMPERES
CONVERSION CONDUCTANCE gc IN MICROMHOS
OSCILLATOR GRID CURRENT IN MILLIAMPERES
gc
rp
Ic2
Ic3+5
Ib
CE45061


SYLVANIA TYPE 7B8-14B8
AVERAGE CONVERSION CHARACTERISTICS
Ef = 6.3 OR 12.6 VOLTS
Eb = 100 VOLTS
Ec2 = 100 VOLTS
Ec3+5 = 50 VOLTS
Igc = 0.25 MA
Rgc = 50,000 OHMS
CONVERSION CONDUCTANCE gc IN MICROMHOS
CURRENTS IN MILLIAMPERES
PLATE RESISTANCE rp IN MEGOHMS
CONTROL GRID VOLTS
rp
gc
Ic2
Ic3+5
Ib
CE45062