

7A8
Description and Rating
OCTODE CONVERTER

GENERAL DESCRIPTION

Principal Application: The 7A8 is an octode converter designed to perform the combined functions of the oscillator and mixer in superheterodyne re-

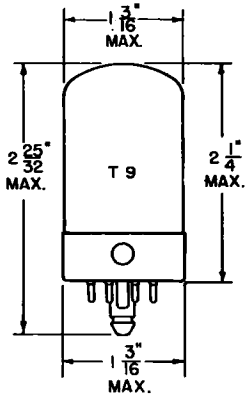
Cathode: Coated Unipotential
Heater Voltage (A-C or D-C) 6.3 Volts
Heater Current 0.15 Ampere
Envelope: T-9 Glass
Base: DB-1, Locking-In 8-Pin
Mounting Position: Any

ceivers. The low heater current requirement of the 7A8 makes it especially useful in applications where economy of heater power is important.

Direct Interelectrode Capacitances: #

Grid 4 to All	7.5	μμf
Plate to All	9.0	μμf
Grid 1 to All Except Grid 2	3.8	μμf
Grid 2 to All Except Grid 1	3.4	μμf
Grid 4 to Plate (Max)	0.15	μμf
Grid 4 to Grid 2 (Max)	0.3	μμf
Grid 4 to Grid 1 (Max)	0.15	μμf
Grid 1 to Grid 2	0.6	μμf

PHYSICAL DIMENSIONS

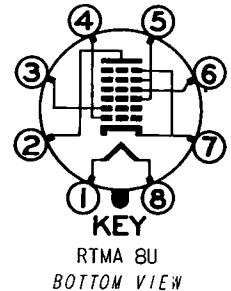


RTMA 9-30

TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Plate
- Pin 3 - Grid Number 2 (Oscillator Anode)
- Pin 4 - Grid Number 1 (Oscillator Grid)
- Pin 5 - Grids Number 3 and 5 (Screen)
- Pin 6 - Grid Number 4 (Mixer Grid)
- Pin 7 - Cathode, Grid Number 6, and Internal Shield
- Pin 8 - Heater

BASING DIAGRAM



MAXIMUM RATINGS

DESIGN CENTER VALUES:

Plate Voltage	300	Volts
Screen Supply Voltage	300	Volts
Screen Voltage	100	Volts
Oscillator Anode Supply Voltage	300	Volts
Oscillator Anode Voltage	200	Volts
Positive D-C Grid Number 4 Voltage	0	Volts
Plate Dissipation	1.0	Watt
Screen Dissipation	0.3	Watt
Oscillator Anode Dissipation	0.75	Watt
Cathode Current	13	Milliamperes
Heater-Cathode Voltage	90	Volts

With external shield #308 connected to cathode

CHARACTERISTICS AND TYPICAL OPERATION

CONVERTER SERVICE

Plate Voltage	100	250	Volts
Screen Voltage	75	100	Volts
Oscillator Anode Voltage	100	250 *	Volts
Grid Number 4 Voltage	-3.0	-3.0	Volts
Grid Number 1 Resistor	50000	50000	Ohms
Plate Resistance (Approx)	650000	700000	Ohms
Conversion Transconductance	375	550	Micromhos
Plate Current	1.8	3.0	Milliamperes
Screen Current	2.7	3.2	Milliamperes
Oscillator Anode Current	2.8	4.2	Milliamperes
Grid Number 1 Current	0.2	0.4	Milliamperes
Total Cathode Current	7.5	10.8	Milliamperes
Grid Number 4 Voltage (Approx) for $G_c = 2$ Micromhos	-22.5	-30	Volts

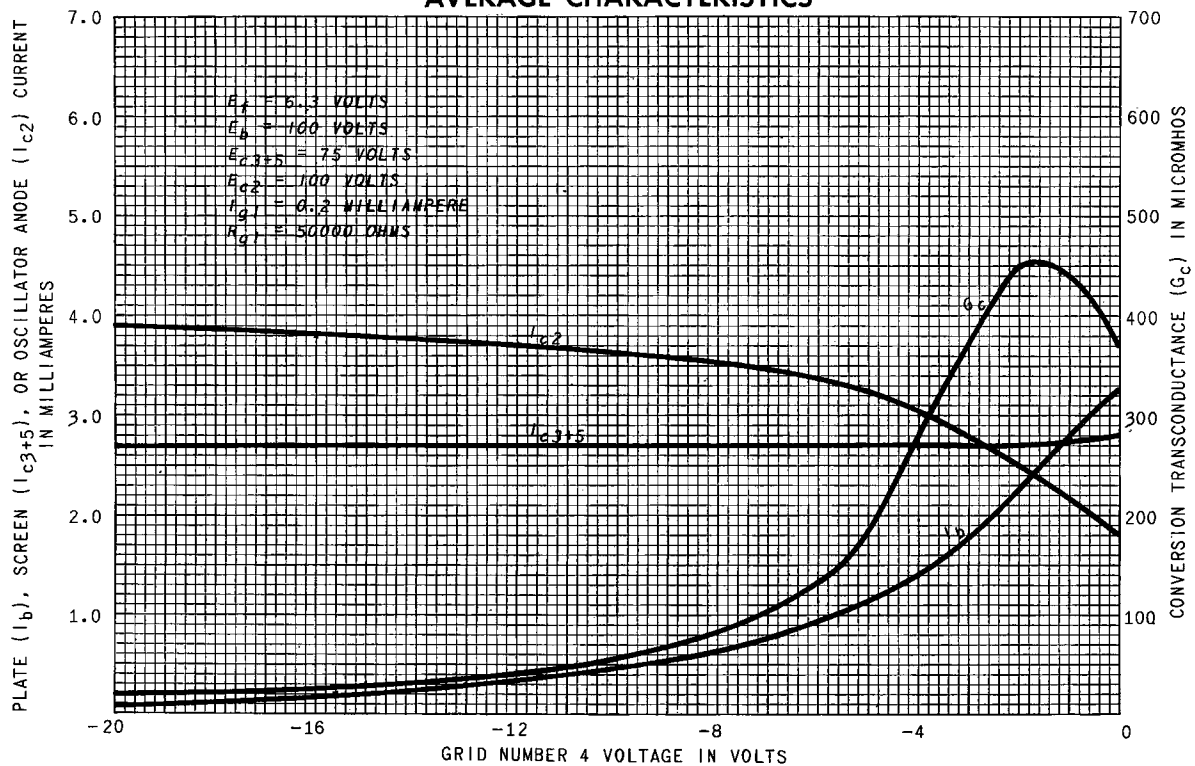
OSCILLATOR CHARACTERISTICS (NOT OSCILLATING)

Plate Voltage	250	Volts
Screen Voltage	100	Volts
Oscillator Anode Voltage	180	Volts
Grid Number 4 Voltage	0	Volts
Grid Number 1 Voltage	0	Volts
Oscillator Anode Current	10	Milliamperes
Transconductance **	1600	Micromhos
Amplification Factor **	65	

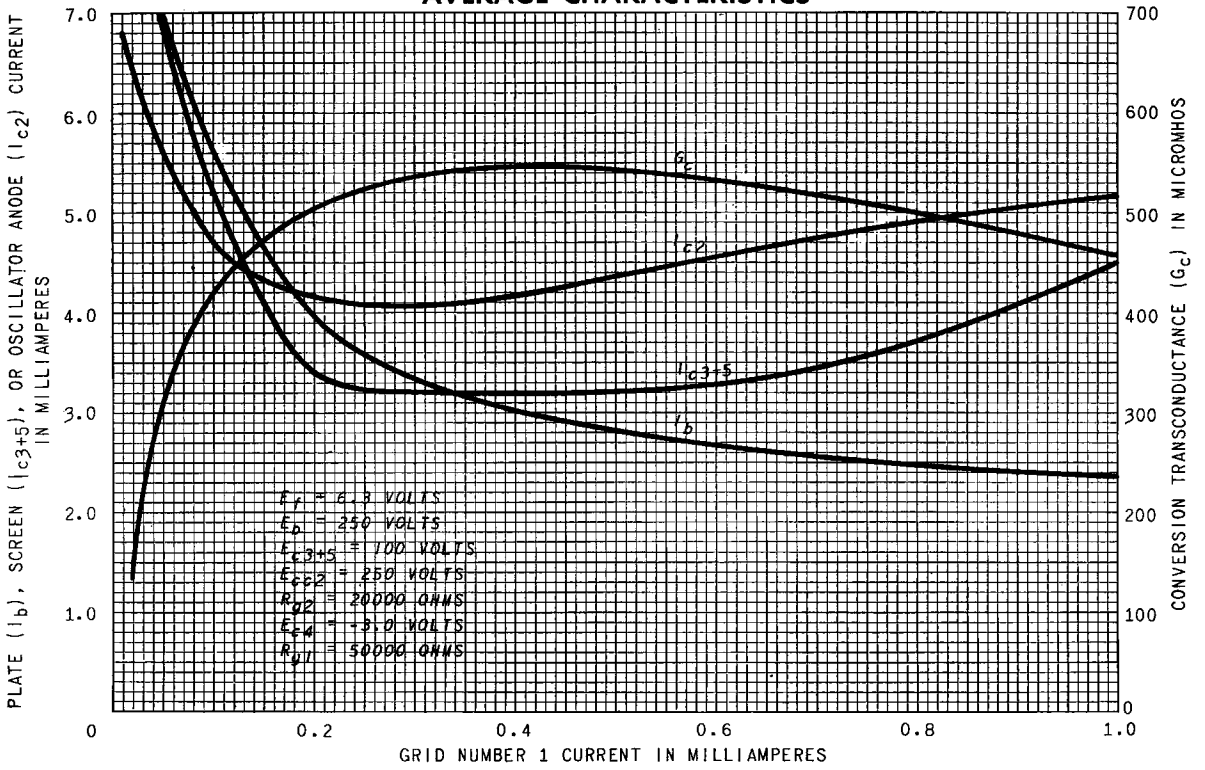
* Applied through a properly by-passed 20000 ohm dropping resistor

** Between grid number 1 (oscillator grid) and grid number 2 (oscillator anode)

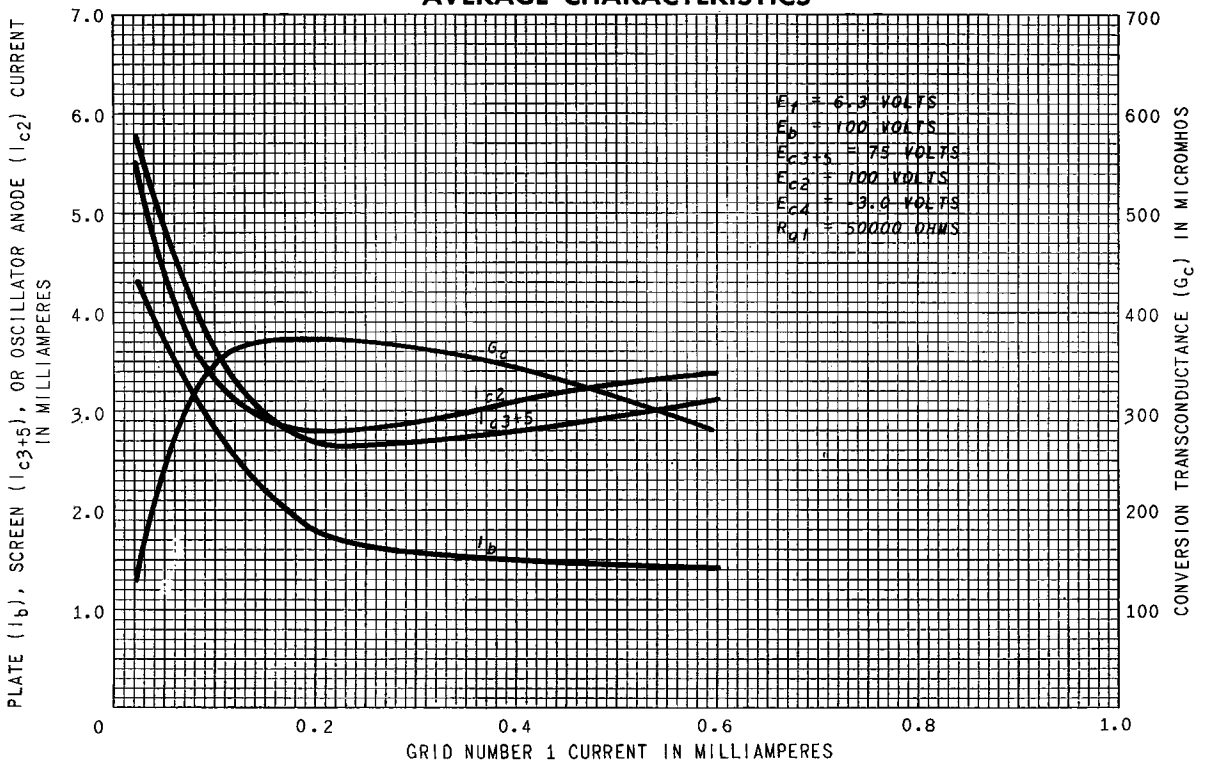
AVERAGE CHARACTERISTICS



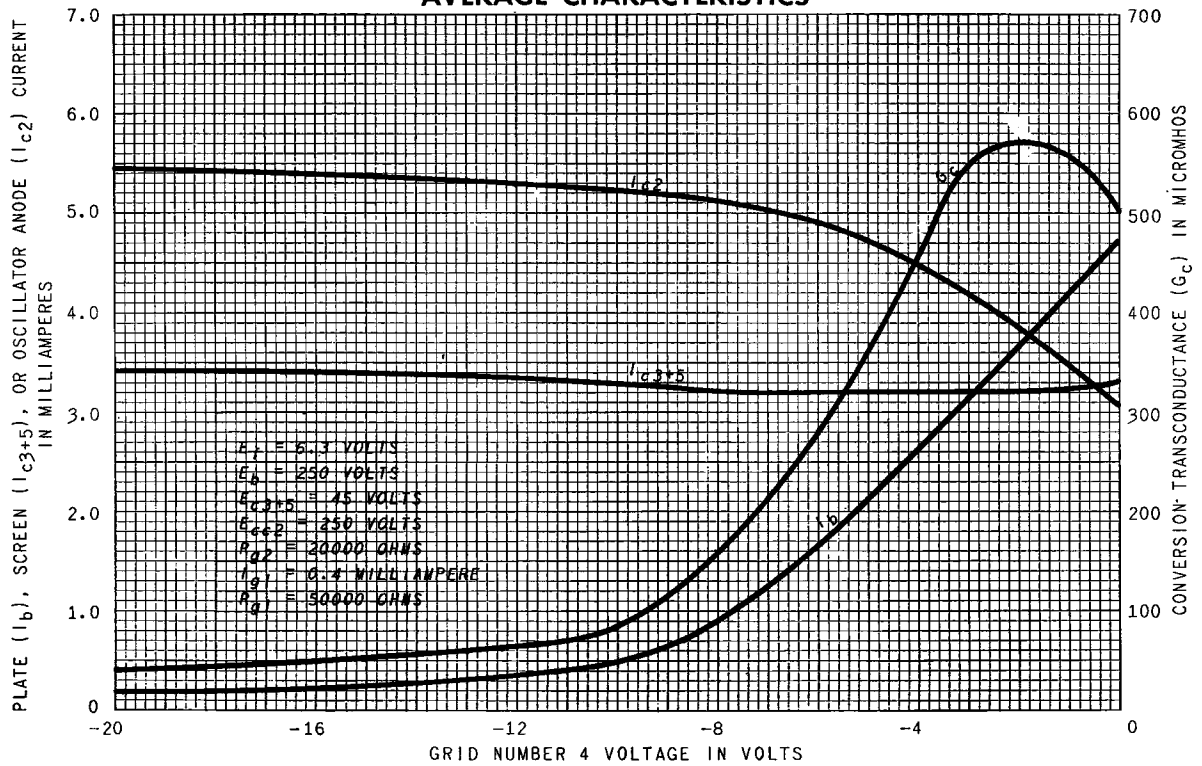
AVERAGE CHARACTERISTICS



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Tube Divisions, Electronics Department



Schenectady, N. Y.