Electronic TUBE
KEN-RAD

14Q7
Description and Rating
PENTAGRID CONVERTER

GENERAL DESCRIPTION

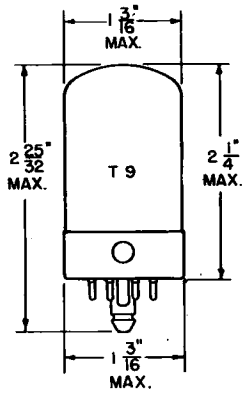
Principal Application: The 14Q7 is a pentagrid converter designed for use as a combined oscillator and mixer in superheterodyne receivers. The electrical characteristics of the 14Q7 are similar to those of the 12SA7. Except for heater rating, the 14Q7 is identical to the 7Q7.

Cathode:	Coated Unipotential
Heater Voltage (A-C or D-C)	12.6 Volts
Heater Current	0.15 Ampere
Envelope:	T-9, Glass
Base:	D8-1, Locking-In 8-Pin
Mounting Position:	Any

Direct Interelectrode Capacitances: #

Grid 3 to All	9.0	μμf
Plate to All	9.0	μμf
Grid 1 to All	7.0	μμf
Cathode to All Except Grid 1	6.0	μμf
Grid 3 to Plate (Max)	0.15	μμf
Grid 3 to Grid 1 (Max)	0.20	μμf
Grid 1 to Plate (Max)	0.15	μμf
Grid 1 to Cathode	2.2	μμf
Grid 1 to All Except Cathode	5.0	μμf

PHYSICAL DIMENSIONS

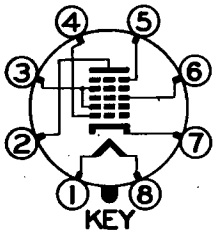


RTMA 9-30

TERMINAL CONNECTIONS

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

BASING DIAGRAM



RTMA 8AL
BOTTOM VIEW

MAXIMUM RATINGS

DESIGN CENTER VALUES:

Plate Voltage	300	Volts
Screen Supply Voltage	300	Volts
Screen Voltage	100	Volts
Positive D-C Grid Number 3 Voltage	0	Volts
Plate Dissipation	1.0	Watt
Screen Dissipation	1.0	Watt
Cathode Current	14	Milliamperes
Heater-Cathode Voltage	90	Volts

 # With external shield #308 connected to base shell and ground

Supersedes ET-T628 dated 8-49

CHARACTERISTICS AND TYPICAL OPERATION

CONVERTER SERVICE *

Plate Voltage	100	250	Volts
Suppressor Voltage	0	0	Volts
Screen Voltage	100	100	Volts
Grid Number 3 Voltage	-2	-2	Volts
Grid Number 1 Voltage (RMS)	10	10	Volts
Grid Number 1 Resistance	20000	20000	Ohms
Plate Resistance (Approx)	0.5	1.0	Megohm
Conversion Transconductance	525	550	Micromhos
Plate Current	3.3	3.5	Milliamperes
Screen Current	8.5	8.5	Milliamperes
Grid Number 1 Current	0.5	0.5	Milliampere
Cathode Current	12.3	12.5	Milliamperes
Grid Number 3 Voltage (Approx) for G_c = 10 Micromhos	-25	-25	Volts
Grid Number 3 Voltage (Approx) for G_c = 100 Micromhos	-8.5	-9.0	Volts

OSCILLATOR CHARACTERISTICS (NOT OSCILLATING)

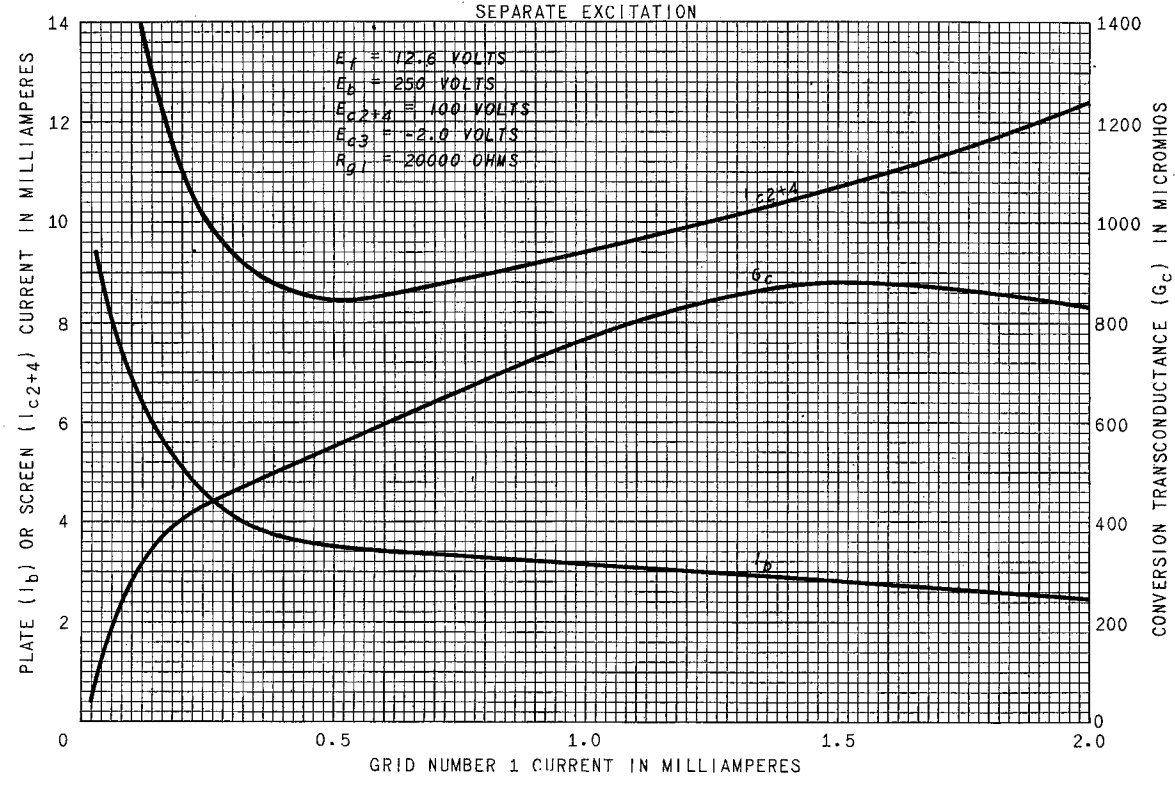
Grids Number 3 and 5 Voltage	0	Volts
Grid Number 1 Voltage	0	Volts
Grids Number 2 and 4 Connected to Plate	100	Volts
Cathode Current	27	Milliamperes
Transconductance **	4500	Micromhos
Amplification Factor **	13	
Grid Number 1 Voltage (Approx) for I_b = 10 Microamperes	-15	Volts

* *Characteristics shown are obtained in the standard RTMA conversion conductance test set which uses separate excitation. The characteristics under these conditions correspond very closely with those obtained in a self-excited oscillatory circuit operating with zero bias.*

** *Between grid number 1 and grids 2 and 4 connected to plate*

AVERAGE CHARACTERISTICS

SEPARATE EXCITATION



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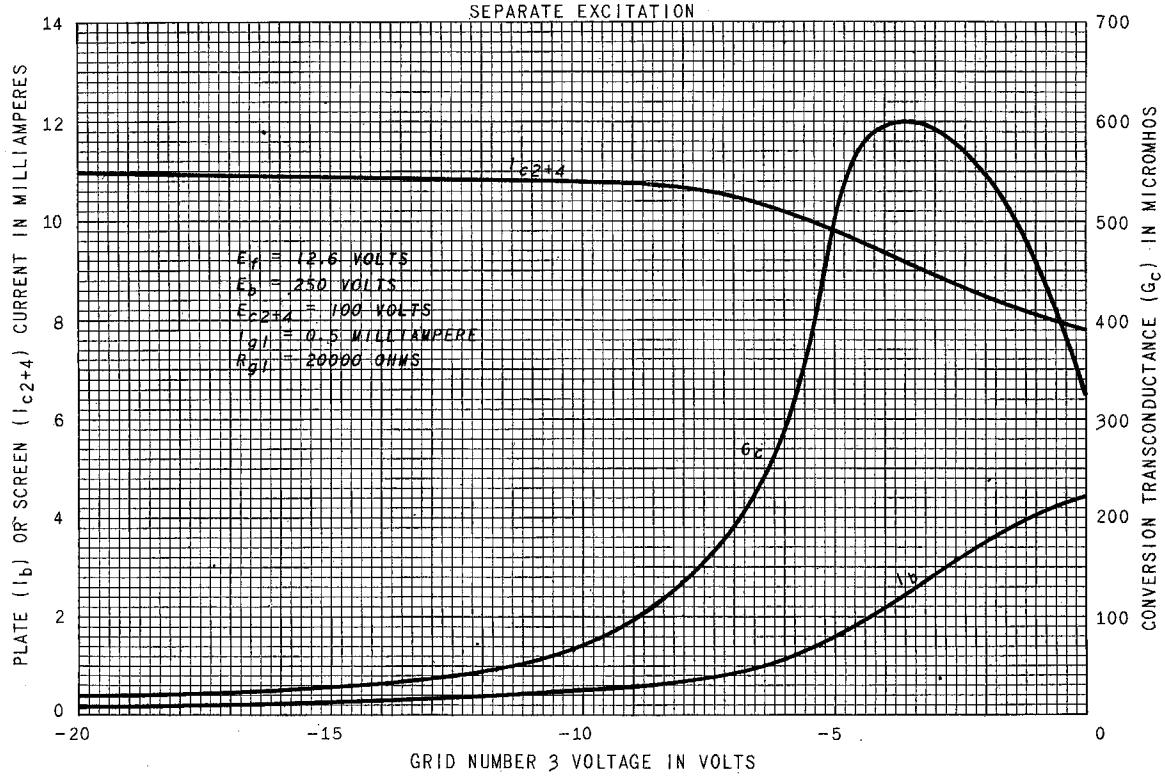
SEPARATE EXCITATION



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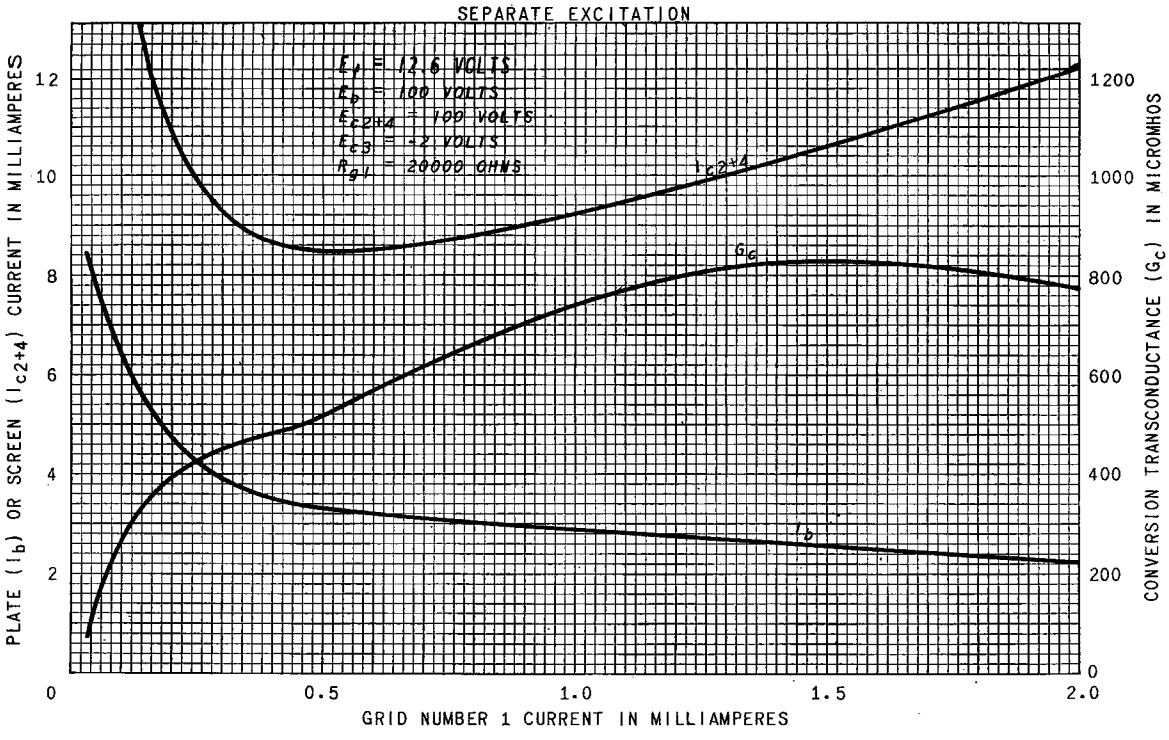
SEPARATE EXCITATION



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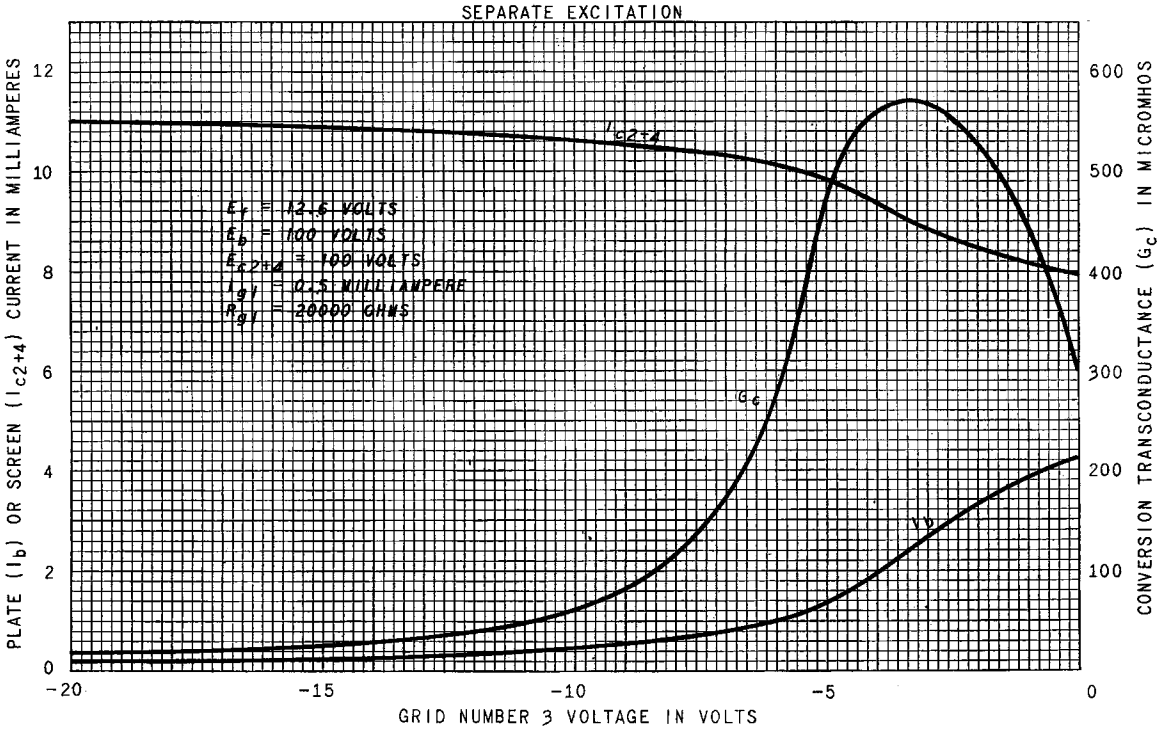

Tube Department, Electronics Division

GENERAL ELECTRIC

Schenectady, N. Y.

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