



5750

PENTAGRID CONVERTER

7-PIN MINIATURE TYPE

For use as a combined mixer and oscillator tube particularly in mobile and aircraft communications receivers in which dependability is paramount. This "premium" type is similar to the 6BE6.

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PREMIUM TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage.	6.3	ac or dc volts
Current.	0.3	amp

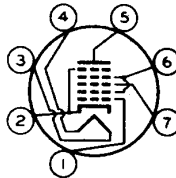
Direct Interelectrode Capacitances:⁰

Grid No.3 to all other electrodes (RF input).	7.1	μf
Plate to all other electrodes (Mixer input).	7.6	μf
Grid No.1 to all other electrodes (Oscillator input).	5.5	μf
Grid No.3 to plate.	0.3 max.	μf
Grid No.3 to grid No.1.	0.15 max.	μf
Grid No.1 to cathode & grid No.5.	3	μf
Cathode & grid No.5 to all other electrodes except grid No.1.	15	μf

Mechanical:

Operating Position	Any
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	T5-1/2
Base	Small-Button Miniature 7-Pin (JEDEC No.E7-1)
Basing Designation for BOTTOM VIEW7CH

Pin 1 - Grid No.1
 Pin 2 - Cathode, Grid No.5
 Pin 3 - Heater
 Pin 4 - Heater



Pin 5 - Plate
 Pin 6 - Grid No.2, Grid No.4
 Pin 7 - Grid No.3

CONVERTER

Maximum Ratings, Absolute Values:

PLATE VOLTAGE.	330 max.	volts
GRID-No.3 (CONTROL-GRID) VOLTAGE:		
Negative-bias value.	55 max.	volts
Positive-bias value.	0 max.	volts
GRIDS-No.2 & No.4 (SCREEN-GRID)		
SUPPLY VOLTAGE	330 max.	volts

⁰: See next page.

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GRIDS-No.2 & No.4 VOLTAGE.	110 max.	volts
TOTAL CATHODE CURRENT.	15.5 max.	ma
GRIDS-No.2 & No.4 INPUT.	1.1 max.	watts
PLATE DISSIPATION.	1.1 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect		
to cathode	100 max.	volts
Heater positive with respect		
to cathode	100 max.	volts
BULB TEMPERATURE (At hottest point		
on bulb surface)	165 max.	°C

Characteristics:

With Separate Excitation*

Plate Voltage.	100	250	volts
Grids-No.2 & No.4 Voltage.	100	100	volts
Grid-No.3 Voltage.	-1.5	-1.5	volts
RMS Grid-No.1 (Oscillator-grid)			
Voltage.	10	10	volts
Grid-No.1 Resistor	20000	20000	ohms
Plate Resistance (Approx.)	0.4	1	megohm
Conversion Transconductance.	455	475	μmhos
Plate Current.	2.6	2.6	ma
Grids-No.2 & No.4 Current.	7.5	7.5	ma
Grid-No.1 Current.	0.5	0.5	ma
Total Cathode Current.	10.6	10.6	ma
Grid-No.3 Voltage (Approx.) for			
conversion transconductance of:			
10 μmhos	-30	-30	volts
100 μmhos.	-6	-6	volts

Oscillator Characteristics (Not Oscillating):■

Plate & Grids-No.2 & No.4 Voltage.	100	volts
Grid-No.3 Voltage.	0	volts
Grid-No.1 Voltage.	0	volts
Amplification Factor§.	22.5	
Oscillator Transconductance§	7800	μmhos
Cathode Current.	25	ma
Grid-No.1 Voltage (Approx.) for		
plate μa. = 10	-11	volts

° Without external shield.

* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

■ With grids No.2 & No.4 connected to plate.

§ Between grid No.1 and grids No.2 & No.4 connected to plate.

SPECIAL RATINGS & PERFORMANCE DATA

Shock Rating:

Impact Acceleration.	450 max.	g
This test is performed in a Navy-Type, High-Impact (fly-		



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weight) Shock Machine.

Fatigue Rating:

Vibrational Acceleration 2.5 max. g
This test is performed for a period of 100 hours minimum at
a frequency of 25 cycles per second.

Heater-Cycling Life Performance:

Cycles of Intermittent Operation 2000 min. cycles
Under the following conditions: heater volts = 7.5 cycled
one minute on and one minute off, heater 135 volts positive
with respect to cathode, and all other elements connected
to ground.

CURVES

shown under Type 6BE6 in the Receiving-Tube
Section also apply to the 5750