



6SA7  
6SA7-GT/G

# 6SA7, 6SA7-GT/G

## PENTAGRID CONVERTER

Heater <sup>■</sup>		Coated Unipotential Cathode	
Voltage	6.3	a-c or d-c volts	
Current	0.3	amp.	
Direct Interelectrode Capacitances:			
	6SA7	6SA7-GT/G	
Grid #3 to All Other Electrodes (R-F Input)	9.5 <sup>▲</sup>	11 <sup>▲▲</sup>	μf
Plate to All Other Electrodes (Mixer Output)	12 <sup>▲</sup>	11 <sup>▲▲</sup>	μf
Grid #1 to All Other Electrodes (Osc. Input)	7 <sup>▲</sup>	8 <sup>▲▲</sup>	μf
Grid #3 to Plate	0.13 max. <sup>▲</sup>	0.5 max. <sup>▲▲</sup>	μf
Grid #3 to Grid #1	0.15 max. <sup>▲</sup>	0.4 max. <sup>▲▲</sup>	μf
Grid #1 to Plate	0.06 max. <sup>▲</sup>	0.2 max. <sup>▲▲</sup>	μf
Grid #1 to Shell, Grid #5, and All Other Electrodes except Cathode	4.4	-	μf
Grid #1 to All Other Electrodes except Cathode & Grid #5	-	5	μf
Grid #1 to Cathode	2.6	-	μf
Grid #1 to Cathode & Grid #5	-	3	μf
Cathode to Shell, Grid #5, and All Other Electrodes except Grid #1	5	-	μf
Cathode and Grid #5 to All Other Electrodes except Grid #1	-	14	μf
Maximum Overall Length	2-5/8"	3-5/16"	
Maximum Seated Height	2-1/16"	2-3/4"	
Maximum Diameter	1-5/16"	1-5/16"	
Bulb	Metal Shell MT-8	T-9	
Base	{ Small Wafer { Octal 8-Pin	{ Intermed. Sh. { Octal 8-Pin	
Pin 1	{ 6SA7, Shell, Grid #5 { 6SA7-GT/G, No Conn.		
Pin 2	- Heater		
Pin 3	- Plate		
Pin 4	- Grids #2 & #4		
Pin 5	- Grid #1		
Pin 6	{ 6SA7, Cathode { 6SA7-GT/G, Cathode & Grid #5		
Pin 7	- Heater		
Pin 8	- Grid #3		
Mounting Position		Any	
<i>Maximum And Minimum Ratings Are Design-Center Values</i>			
<u>CONVERTER SERVICE</u>			
Plate Voltage		300 max.	volts
Grids #2 & #4 Voltage		100 max.	volts
Grids #2 & #4 Supply Voltage		300 max.	volts
Grid #3 Voltage*		0 min.	volts
Plate Dissipation		1.0 max.	watt
Screen Dissipation		1.0 max.	watt
Total Cathode Current		14 max.	ma.
<sup>■</sup> In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should be kept as low as possible. <sup>▲▲</sup> with shell connected to cathode. <sup>▲▲</sup> with external shield connected to cathode. <sup>*</sup> For self-excited oscillator. <sup>←</sup> Indicates a change.			



6SA7  
6SA7-GT/G



# 6SA7, 6SA7-GT/G PENTAGRID CONVERTER

(continued from preceding page)

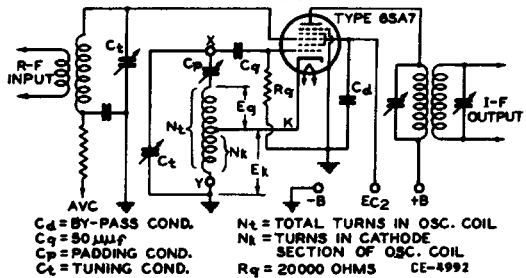
Characteristics:	Self-excitation*		Separate Excitation		
Plate Voltage	100	250	100	250	volts
Grids #2 & #4 Volt.	100	100	100	100	volts
Grid #3 (Control) Volt.	0	0	-2	-2	volts
Grid #1 Resistor	20000	20000	20000	20000	ohms
Plate Res. (Approx.)	0.5	1.0	0.5	1.0	megohm
Conversion Transcond.	425	450	425	450	$\mu\text{hos}$
Conversion Transcond. (Approx.) †	2	2	2	2	$\mu\text{hos}$
Plate Current	3.3	3.5	3.3	3.5	ma.
Grids #2 & #4 Current	8.5	8.5	8.5	8.5	ma.
Grid #1 Current	0.5	0.5	0.5	0.5	ma.
Total Cathode Current	12.3	12.5	12.3	12.5	ma.

NOTE: The transconductance between Grid #1 and Grids #2 & #4 connected to plate (not oscillating) is approximately 4500  $\mu\text{hos}$  under the following conditions: Grids #1, #3, and shell at 0 volts; Grids #2 & #4 and plate at 100 volts.

\* Characteristics are approximate only and are shown for a Hartley circuit with a feedback of approximately 2 volts peak in the cathode circuit.

† With Grid #3 bias of -35 volts.

TYPICAL SELF-EXCITED CONVERTER CIRCUIT FOR TYPE 6SA7



The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

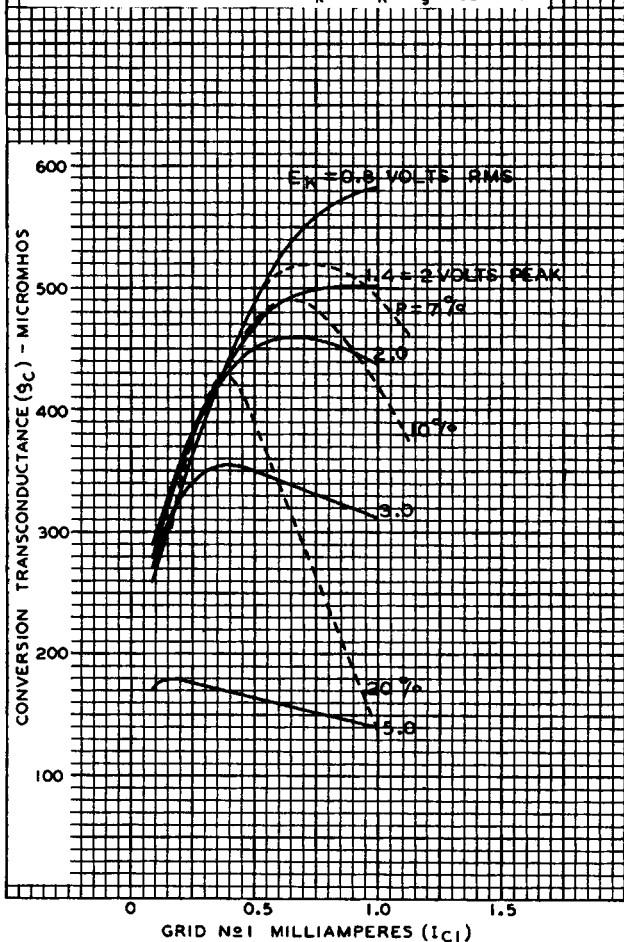


6SA7

6SA7

### OPERATION CHARACTERISTICS WITH SELF-EXCITATION

$E_f = 6.3$  VOLTS  
 PLATE VOLTS = 250  
 GRIDS No 2 & No 4 VOLTS = 100  
 GRID No 3 (CONTROL GRID) VOLTS = -1  
 GRID No 1 RESISTOR - OHMS = 20000  
 P = PERCENTAGE RATIO OF  $E_k$  TO  $E_k + E_g$ : SEE CIRCUIT



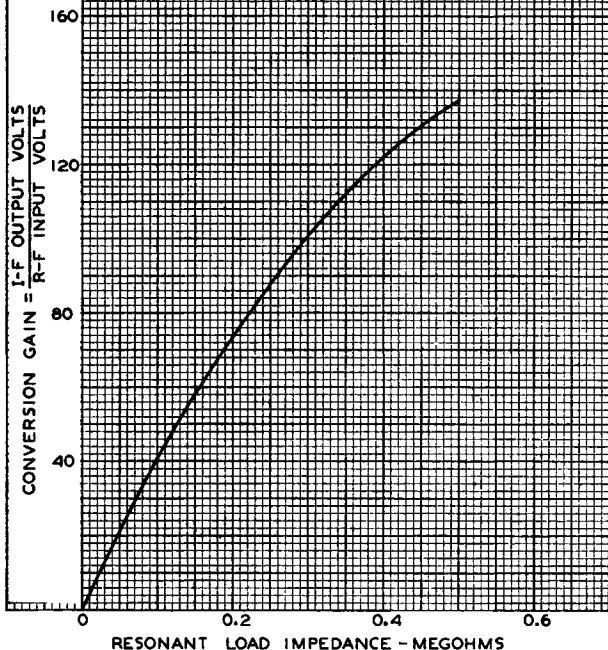
6SA7



6SA7

# OPERATION CHARACTERISTIC WITH SELF-EXCITATION

$E_f = 6.3$  VOLTS  
 PLATE VOLTS = 250  
 GRIDS N<sup>o</sup>2 & N<sup>o</sup>4 VOLTS = 100  
 GRID N<sup>o</sup>3 (CONTROL GRID) VOLTS = 0  
 GRID N<sup>o</sup>1 RESISTOR - OHMS = 20000  
 GRID N<sup>o</sup>1 MILLIAMPERES = 0.5

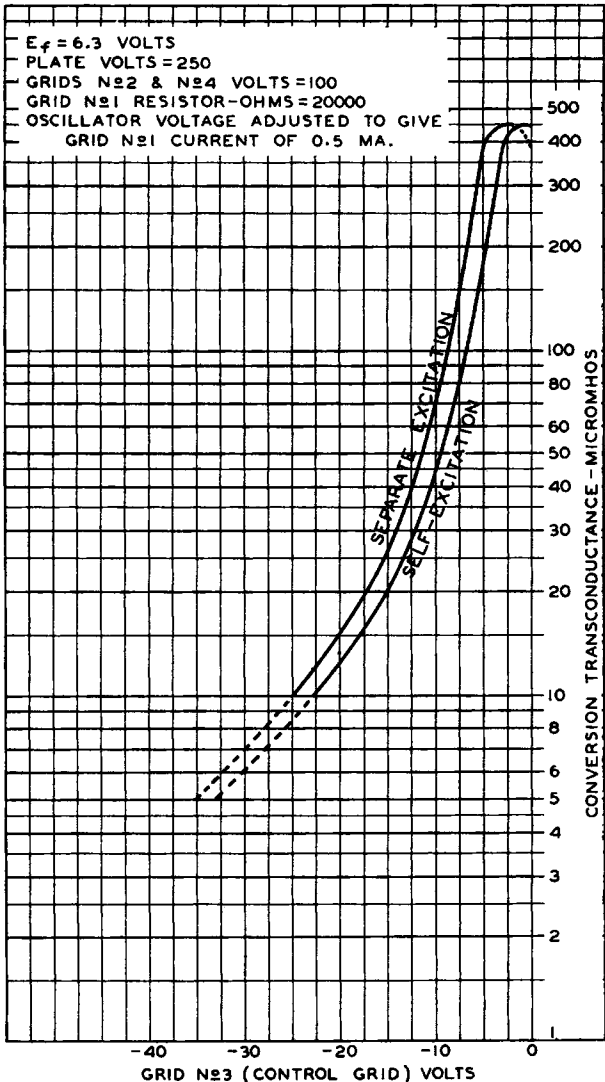




6SA7

6SA7

### OPERATION CHARACTERISTICS



6SA7



6SA7

### OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION

$E_f = 6.3$  VOLTS  
 PLATE VOLTS = 250  
 GRIDS No2 & No4 VOLTS = 100  
 GRID No3 (CONTROL GRID) VOLTS = -2  
 GRID No1 RESISTOR-OHMS = 20000  
 GRID No1 CURRENT VARIED BY ADJUSTMENT  
 OF OSCILLATOR VOLTAGE

