



*Excellence in Electronics*

**TYPE**  
**6SN7WGT**  
**12SN7WGT**

The 6SN7WGT is a heater-cathode type medium-mu double triode designed for use as a voltage amplifier or phase inverter, in applications when severe conditions of shock and vibration are encountered.

The 12SN7WGT is identical to the 6SN7WGT except for heater characteristics and is especially useful in AC/DC applications.

**MECHANICAL DATA**

ENVELOPE: T-9 Glass

BASE: Intermediate or Short Intermediate Shell Octal 8-Pin

TERMINAL CONNECTIONS:

- Pin 1 Grid, Unit 2
- Pin 2 Plate, Unit 2
- Pin 3 Cathode, Unit 2
- Pin 4 Grid, Unit 1
- Pin 5 Plate, Unit 1
- Pin 6 Cathode, Unit 1
- Pin 7 Heater
- Pin 8 Heater

MOUNTING POSITION: Any

**ELECTRICAL DATA**

HEATER CHARACTERISTICS:

	6SN7WGT	12SN7WGT
Heater Voltage (ac or dc)	6.3	12.6 volts
Heater Current	0.6	0.3 amps.
Maximum Heater - Cathode Voltage:		
Heater Positive with Respect to Cathode		
DC Component	100	100 volts
Total DC and Peak	200	200 volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	200 volts

DIRECT INTERELECTRODE CAPACITANCES: ( $\mu\text{fds.}$ )

	Unit 1	Unit 2
Grid to Plate: (g to p)	3.7	3.7
Input: g to (h+k)	2.2	2.5
Output: p to (h+k)	0.7	0.8

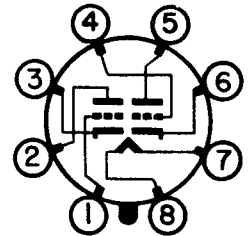
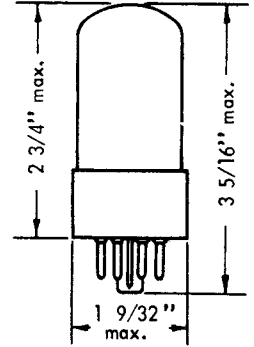
DESIGN CENTER MAXIMUM RATINGS:

Plate Voltage	300 volts
Plate Dissipation $\blacklozenge$	
Each Plate	3.5 watts
Both Plates	5.0 watts
DC Cathode Current	20 ma.
Grid Circuit Resistance	
Fixed Bias	1.0 meg.
Cathode Bias	1.0 meg.

CHARACTERISTICS AND TYPICAL OPERATION - CLASS A1 AMPLIFIER:

Plate Voltage	90	250 volts
Grid Voltage	0	-8.0 volts
Amplification Factor	20	20
Transconductance	3000	2600 $\mu\text{mhos}$
Plate Resistance (approx.)	6700	7700 ohms
Plate Current	10	9 ma.
Plate Current at $E_c = -12.5$	----	1.3 ma.
Grid Voltage (approx.) for $I_b = 10 \mu\text{a.}$	-7.0	-18 volts

$\blacklozenge$  In stages operating with grid-leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.



BOTTOM VIEW

8B D

Tentative Data

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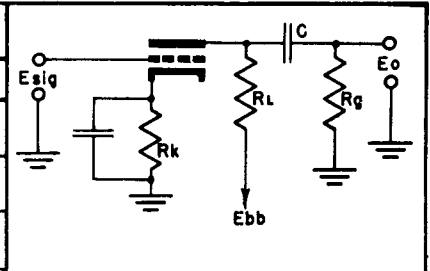
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DOUBLE - TRIODE

RESISTANCE - COUPLED AMPLIFIER CHART

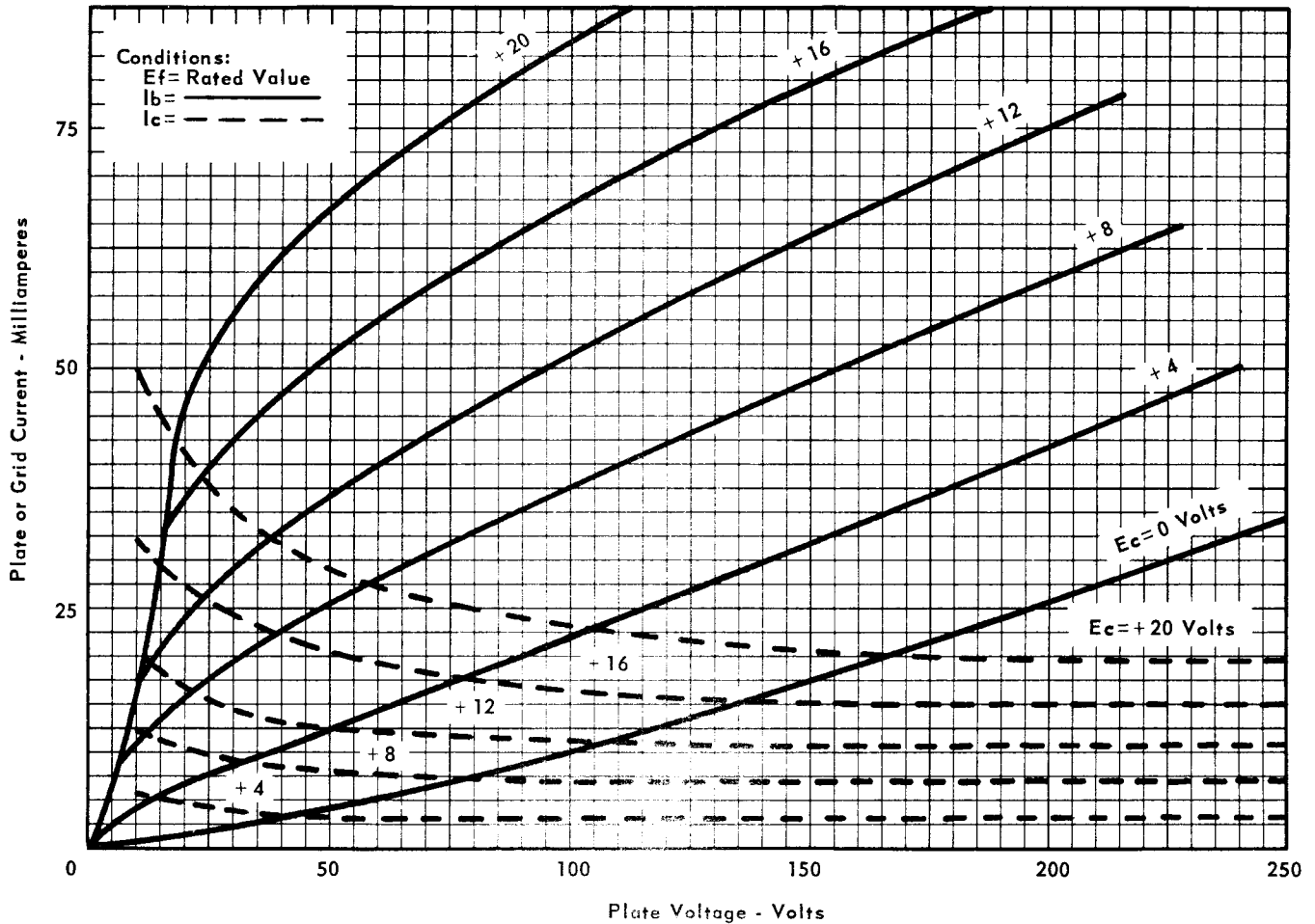
$R_L$	$R_g$	Ebb = 90 volts			Ebb = 180 volts			Ebb = 300 volts		
		$R_k$	$E_o$	Gain ●	$R_k$	$E_o$	Gain ●	$R_k$	$E_o$	Gain ●
0.05	0.05	1650	11	11	1190	24	13	1020	41	13
	0.1	2070	14	12	1490	30	13	1270	51	14
0.1	0.1	3470	12	13	2330	26	14	1900	43	14
	0.25	3940	17	13	2830	34	14	2440	56	14
0.25	0.25	7860	14	13	5560	28	14	4590	46	14
	0.5	9760	18	13	7000	36	14	5770	57	14



$E_o$  = Voltage across  $R_g$  at grid-current point.  
● = At 5 volts (RMS) output.

Value of C selected for desired frequency response.  $R_k$  should be adequately by-passed.

AVERAGE PLATE CHARACTERISTICS



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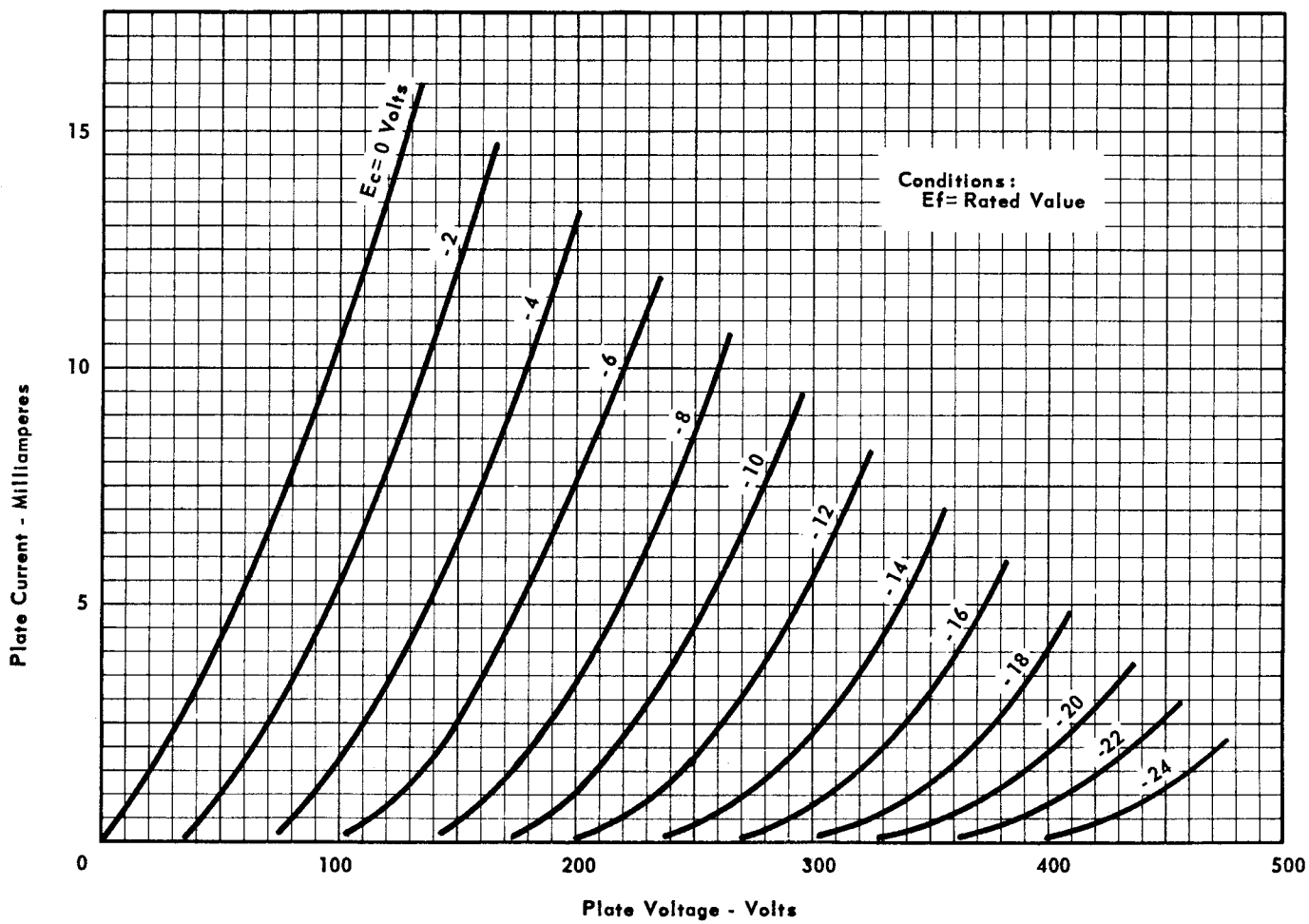
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55 CHAPEL ST., NEWTON 58, MASS.



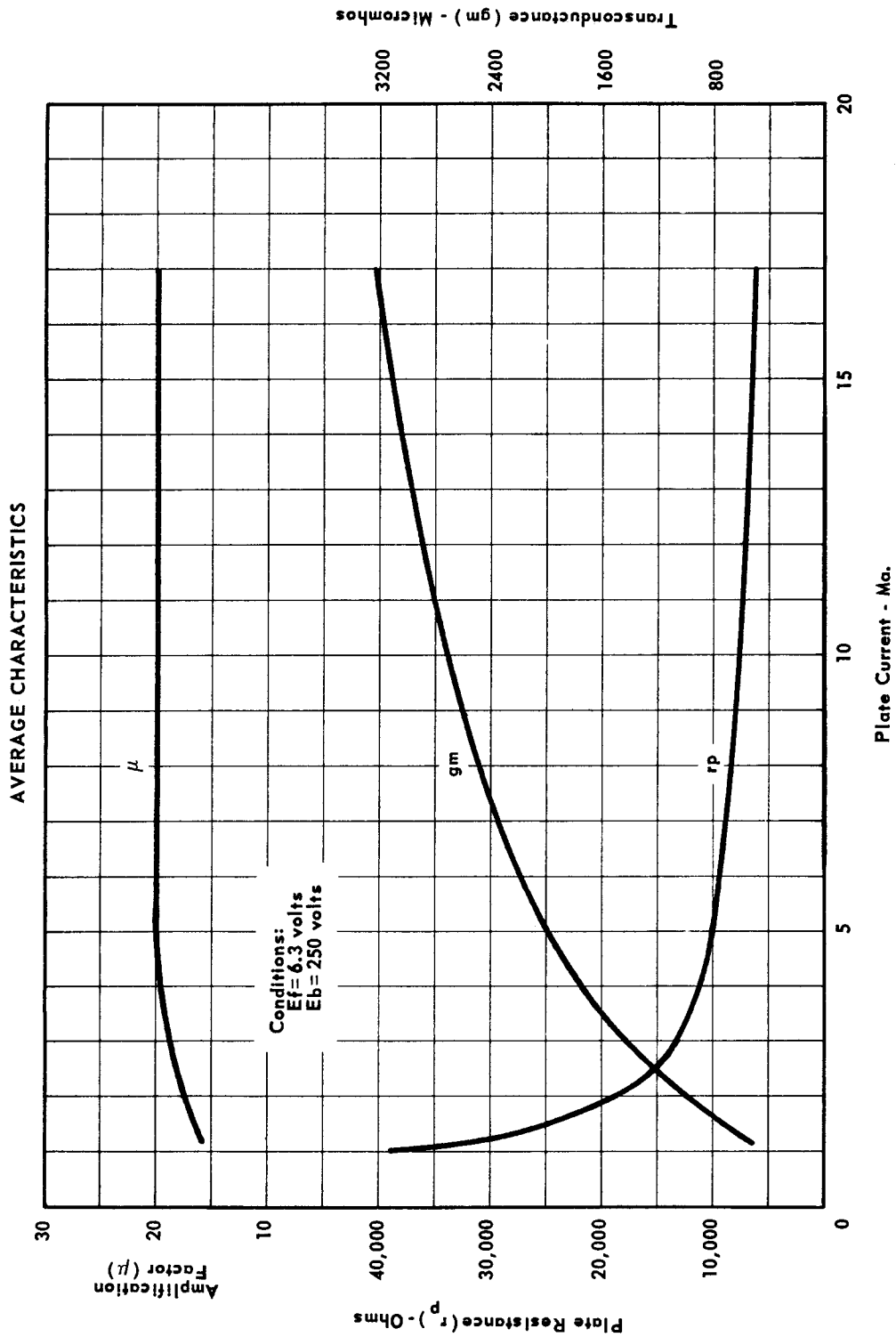
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AVERAGE PLATE CHARACTERISTICS





DOUBLE - TRIODE



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