

6J7, 6J7-G, 6J7-GT

TRIPLE-GRID DETECTOR AMPLIFIER

Heater		Coated Unipotential Cathode	
Voltage	6.3	a-c or d-c volts	
Current	0.3	amp.	
Direct Interelectrode Cap.			
	6J7 ^o	6J7-G	6J7-GT
Pentode Connection:			
Grid to Plate	0.005 max.	0.007 max.*	0.005 max.* μmf
Input	7	4.6 ^o	4.6 ^o μmf
Output	12	12 ^o	12 ^o μmf
Triode Connection: ††			
Grid to Plate	2	1.8 ^Δ	1.8 ^Δ μmf
Grid to Cathode	5	2.6 ^Δ	2.6 ^Δ μmf
Plate to Cathode	14	17 ^Δ	17 ^Δ μmf
Overall Length	3-1/8" max.	4-7/32" to 4-15/32"	3-5/16" max.
Seated Height	2-9/16" max.	3-21/32" to 3-29/32"	2-3/4" max.
Maximum Diameter	1-5/16"	1-9/16"	1-5/16"
Bulb	Metal Shell, NT-8	ST-12	T-8
Cap	Miniature	Skirted Miniature	Skirted Miniature Style-C
Base	{ Small Wafer Octal 7-Pin	{ Small Shell Octal 7-Pin	{ Sm. Wafer Octal 7-Pin, Sleeve
Basing Designation	7A	G-7R	GT-7R
Pin 1	{ 6J7, Shell 6J7-G, { internal Shield 6J7-GT, Base Sleeve		Pin 4 - Screen
Pin 2 - Heater			Pin 5 - Suppressor
Pin 3 - Plate			Pin 7 - Heater
Pin 4 - Grid			Pin 8 - Cathode
Pin 5 - Suppressor			Cap - Grid
Pin 6 - Cathode			
Pin 7 - Heater			
Pin 8 - Cathode			
Cap - Grid			
Mounting Position			Any



AMPLIFIER (Pentode Connection)

Plate Voltage	300 max. volts	
Screen Voltage	125 max. volts	
Screen Supply Voltage	300 max. volts	
Grid Voltage	0 min. volts	
Plate Dissipation	0.75 max. watt	
Screen Dissipation	0.1 max. watt	
Typical Operation and Characteristics - Class A₁ Amplifier:		
Plate	100	250 volts
Screen	100	100 volts
Grid #	-3	-3 volts
Suppressor	Connected to cathode at socket	
Plate Res.	1.0	↑ megohm
Transcond.	1185	1225 μmhos
Grid Bias (approx.)		
for cathode-current cut-off	-7	-7 volts
Plate Cur.	2	2 ma.
Screen Cur.	0.5	0.5 ma.

* , o , Δ , †† , # , †: See next page.

← Indicates a change.

Sept. 2, 1941

RCA ELECTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

DATA

6J7
6J7-G
6J7-GT



6J7, 6J7-G, 6J7-GT

TRIPLE-GRID DETECTOR AMPLIFIER

(continued from preceding page)

AMPLIFIER (Triode Connection) ††

Plate Voltage	250 max. volts		
Grid Voltage	0 min. volts		
Plate & Screen Dissipation (Total)	1.75 max. watts		
<i>Typical Operation and Characteristics - Class A₁ Amplifier:</i>			
Plate	180	250	volts
Grid #	-5.3	-8	volts
Amp. Fact.	20	20	
Plate Res.	11000	10500	ohms
Transcond.	1800	1900	μmhos
Plate Cur.	5.3	6.5	ma.

DETECTOR

Typical Operation as a Biased Detector:

Plate Supply	100	100	250	250	volts
Screen	12	30	50	100	volts
Grid #	-1.2	-1.8	-2	-4.3	volts
Cathode Res.	18000	10000	3000	10000	ohms
Suppressor	Connected to cathode at socket				
Zero-Sig. Cath. Cur.	0.063	0.183	0.65	0.43	ma.
Plate Resistor	1.0	0.25	0.25	0.5	megohm
Blocking Condenser	0.01	0.01	0.3	0.3	μf
Grid Resistor ^{oo}	1.0	0.5	0.25	0.25	megohm
R-F Signal (RMS) ^{oo}	1.05	1.6	1.18	1.37	volts

■ 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.

○ with shell connected to cathode.

● with close-fitting shield connected to cathode.

†† Screen and suppressor connected to plate.

‡ without shield-can.

§ The d-c resistance in the grid circuit should not exceed 1.0 megohm.

¶ Greater than 1.0 megohm.

⊖ voltage at plate will be "Plate Supply" voltage minus voltage drop

in plate resistor caused by plate current.

oo For the following amplifier tube.

⊙ with these signal values modulated 20%, the voltage output under each set of conditions is 17 peak volts at the grid of the following amplifier. This value is sufficient to insure full audio output from a 6F6 (class A pentode) at 250 volts on plate.

For additional data, see RESISTANCE-COUPLED AMPLIFIER CHART. Curves under Type 6C8 also apply to the 6J7, 6J7-G, and 6J7-GT.

← indicates a change.

Sept. 2, 1941

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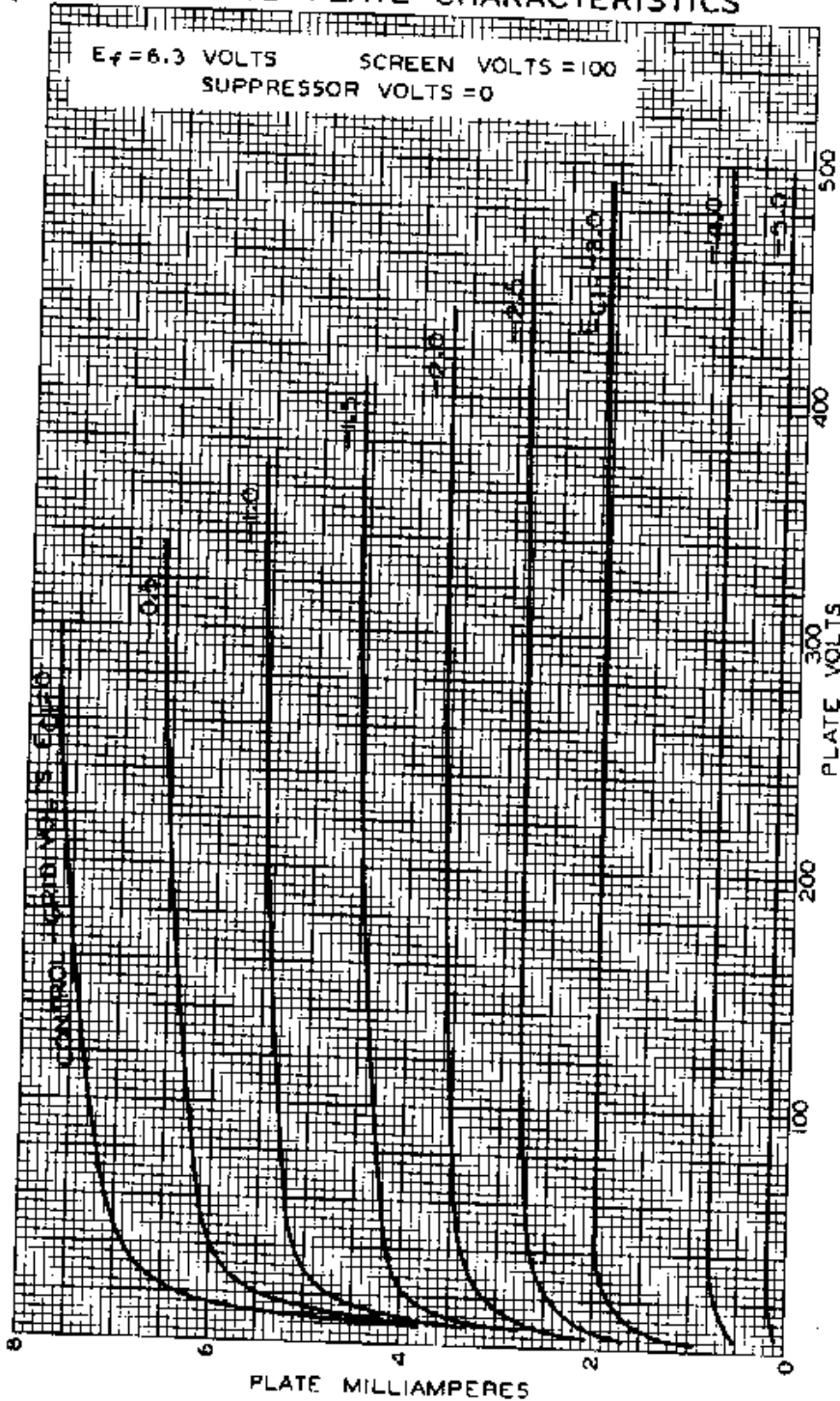
DATA



6J7

6J7

AVERAGE PLATE CHARACTERISTICS



AUG. 20, 1941

PLATE MILLIAMPERES
RCA RADOTRON DIVISION
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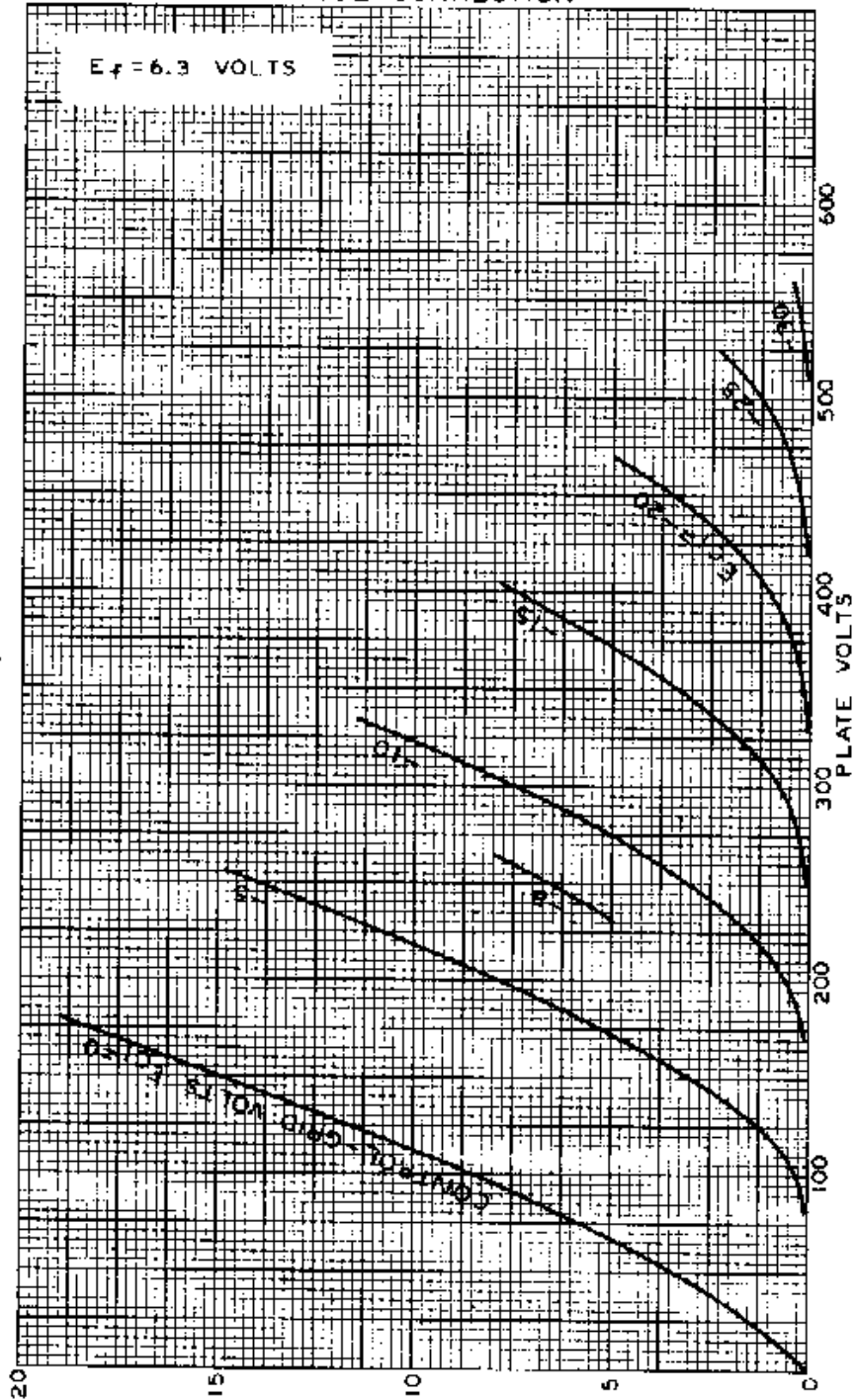
92C-4741R1

6J7



6J7

AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION



NOV. 2, 1937

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92C-4842



RESISTANCE-COUPLED AMPLIFIER CHARTS (Continued)

14 See Circuit Diagram 3									
E _{bb}	R _p	R _g	R _{g2}	R _k	C _{g2}	C _k	C	E _o	V.G.
90	0.1	0.1	0.37	1200	0.05	5.2	0.02	17	41
		0.25	0.44	1100	0.05	5.3	0.01	22	55
		0.5	0.44	1300	0.05	4.8	0.006	33	66
	0.25	0.25	1.1	2400	0.03	3.7	0.008	23	70
		0.5	1.18	2600	0.03	3.2	0.005	32	85
		1.0	1.4	3500	0.025	2.5	0.003	33	92
	0.5	0.5	2.18	4700	0.02	2.3	0.005	28	93
		1.0	2.6	5500	0.05	2.0	0.0025	29	120
		2.0	2.7	5500	0.02	2.0	0.0015	27	140
180	0.1	0.1	0.44	1000	0.05	6.5	0.02	42	51
		0.25	0.5	750	0.05	6.7	0.01	52	69
		0.5	0.5	800	0.05	6.7	0.006	59	83
	0.25	0.25	1.1	1200	0.04	5.2	0.008	41	93
		0.5	1.18	1600	0.04	4.3	0.005	60	118
		1.0	1.4	2000	0.04	3.8	0.0025	60	140
	0.5	0.5	2.45	2600	0.03	3.2	0.005	45	135
		1.0	2.9	3100	0.025	2.5	0.0025	56	165
		2.0	2.7	3500	0.02	2.8	0.0015	60	165
300	0.1	0.1	0.44	500	0.07	8.5	0.02	55	61
		0.25	0.5	450	0.07	8.3	0.01	81	82
		0.5	0.53	600	0.06	8.0	0.006	96	94
	0.25	0.25	1.18	1100	0.04	5.5	0.008	81	104
		0.5	1.18	1200	0.04	5.4	0.005	104	140
		1.0	1.45	1300	0.05	5.8	0.005	110	185
	0.5	0.5	2.45	1700	0.04	4.2	0.005	75	161
		1.0	2.9	2200	0.04	4.1	0.003	97	200
		2.0	2.95	2300	0.04	4.0	0.0025	100	230

6C6, 6J7, 6W7, 12J7, 57



RESISTANCE-COUPLED AMPLIFIER CHARTS (Continued)

See Circuit Diagram 1									
E_{bb}	R_p	R_g	R_{g2}	R_k	C_{g2}	C_k	C	E_o	$V.G.$
90	0.05	0.05	—	2800	—	2.0	0.05	14	9
		0.1	—	3400	—	1.62	0.025	17	9
		0.25	—	3800	—	1.3	0.01	20	10
	0.1	0.1	—	4800	—	1.12	0.025	16	10
		0.25	—	6400	—	0.84	0.01	22	11
		0.5	—	7500	—	0.66	0.005	23	12
	0.25	0.25	—	11400	—	0.52	0.01	18	12
		0.5	—	14500	—	0.4	0.006	23	12
		1.0	—	17300	—	0.33	0.004	26	13
180	0.05	0.05	—	2200	—	2.2	0.055	34	10
		0.1	—	2700	—	2.1	0.03	45	11
		0.25	—	3100	—	1.85	0.015	54	11
	0.1	0.1	—	3900	—	1.7	0.035	41	12
		0.25	—	5300	—	1.25	0.015	54	12
		0.5	—	6200	—	1.2	0.008	55	13
	0.25	0.25	—	9500	—	0.74	0.015	44	13
		0.5	—	12300	—	0.55	0.008	52	13
		1.0	—	14700	—	0.47	0.004	59	13
300	0.05	0.05	—	2100	—	3.16	0.075	57	11
		0.1	—	2600	—	2.3	0.04	70	11
		0.25	—	3100	—	2.2	0.015	83	12
	0.1	0.1	—	3800	—	1.7	0.035	65	12
		0.25	—	5300	—	1.3	0.015	84	13
		0.5	—	6000	—	1.17	0.008	88	13
	0.25	0.25	—	9600	—	0.9	0.015	73	13
		0.5	—	12300	—	0.59	0.008	85	14
		1.0	—	14000	—	0.37	0.003	97	14

6C5, 6C5-GT, (wired as triode)
6C6, 6J7, 6W7, 12J7, 57