6SN7-GTA

MEDIUM-MU TWIN TRIODE

6SN7-GTA

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Voltage	6.3	ac or dc volts
Current	0.6	amp

Direct Interelectrode Capacitances (With no external shield):

	Unit No.1	*Unit No.2*	
Grid to plate	4	3.8	μμf
Grid to cathode and heater	2.2	2.6	μμf
Plate to cathode and heater	0.7	0.7	μμf

Characteristics, Class A_1 Amplifier (Each Unit):

Plate Voltage	90	250	volts
Grid Voltage	0	-8	volts
Amplification Factor	20	20	volts
Plate Resistance (Approx.)	6700	7700	ohms
Transconductance	3000	2600	μmhos
Plate Current	10	9	ma
Plate Current for grid voltage of -12.5 volts	-	1.3	ma
Grid Voltage (Approx.) for plate current of 10 μamp	-7	-18	volts

Mechanical:

Mounting Position	Any
Maximum Overall Length	3-5/16"
Maximum Seated Length	2-3/4"
Maximum Diameter	1-9/32"
Bulb	T-9
Base	Short Intermediate-Shell Octal 8-Pin with External Barriers (JETEC No.B8-58)
Basing Designation for BOTTOM VIEW	8BD

Pin 1 - Grid of Unit No.2
Pin 2 - Plate of Unit No.2
Pin 3 - Cathode of Unit No.2
Pin 4 - Grid of Unit No.1

Pin 5 - Plate of Unit No.1
Pin 6 - Cathode of Unit No.1
Pin 7 - Heater
Pin 8 - Heater

AMPLIFIER - Class A_1

Values are for Each Unit

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	450 max.	volts
CATHODE CURRENT	20 max.	ma

6SN7-GTA

6SN7-GTA
MEDIUM-MU TWIN TRIODE

PLATE DISSIPATION:			
Either plate	5	max.	watts
Both plates (Both units operating)	7.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:			
For fixed-bias operation	1	max.	megohm

Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE-COUPLED AMPLIFIER CHART No.29 at front of this Section

HORIZONTAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, *Design-Center Values:*

For operation in a 525-line, 30-frame system□

DC PLATE VOLTAGE	450	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE♦	600	max.	volts
CATHODE CURRENT:			
Peak	300	max.	ma
Average	20	max.	ma
PLATE DISSIPATION:			
Either plate	5	max.	watts
Both plates (Both units operating)	7.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:			
For fixed-bias, grid-resistor bias, or cathode-bias operation	2.2	max.	megohms

VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, *Design-Center Values:*

For operation in a 525-line, 30-frame system□

DC PLATE VOLTAGE	450	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE#	400	max.	volts
CATHODE CURRENT:			
Peak	70	max.	ma
Average	20	max.	ma

▲,□,♦,#: See next page.

6SN7-GTA

MEDIUM-MU TWIN TRIODE

PLATE DISSIPATION:			
Either plate	5	max.	watts
Both plates (Both units operating)	7.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:			
For fixed-bias, grid-resistor bias, or cathode-bias operation	2.2	max.	megohms

VERTICAL DEFLECTION AMPLIFIER

Values are for Each Unit

Maximum Ratings, *Design-Center Values Except as Noted:*

For operation in a 525-line, 30-frame system□

DC PLATE VOLTAGE	450	max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE# (Absolute Maximum)	1500■	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	250	max.	volts
CATHODE CURRENT:			
Peak	70	max.	ma
Average	20	max.	ma
PLATE DISSIPATION:			
Either plate	5	max.	watts
Both plates (Both units operating)	7.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200▲	max.	volts
Heater positive with respect to cathode	200▲	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:			
For cathode-bias operation	2.2	max.	megohms

▲ The dc component must not exceed 100 volts.

□ As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

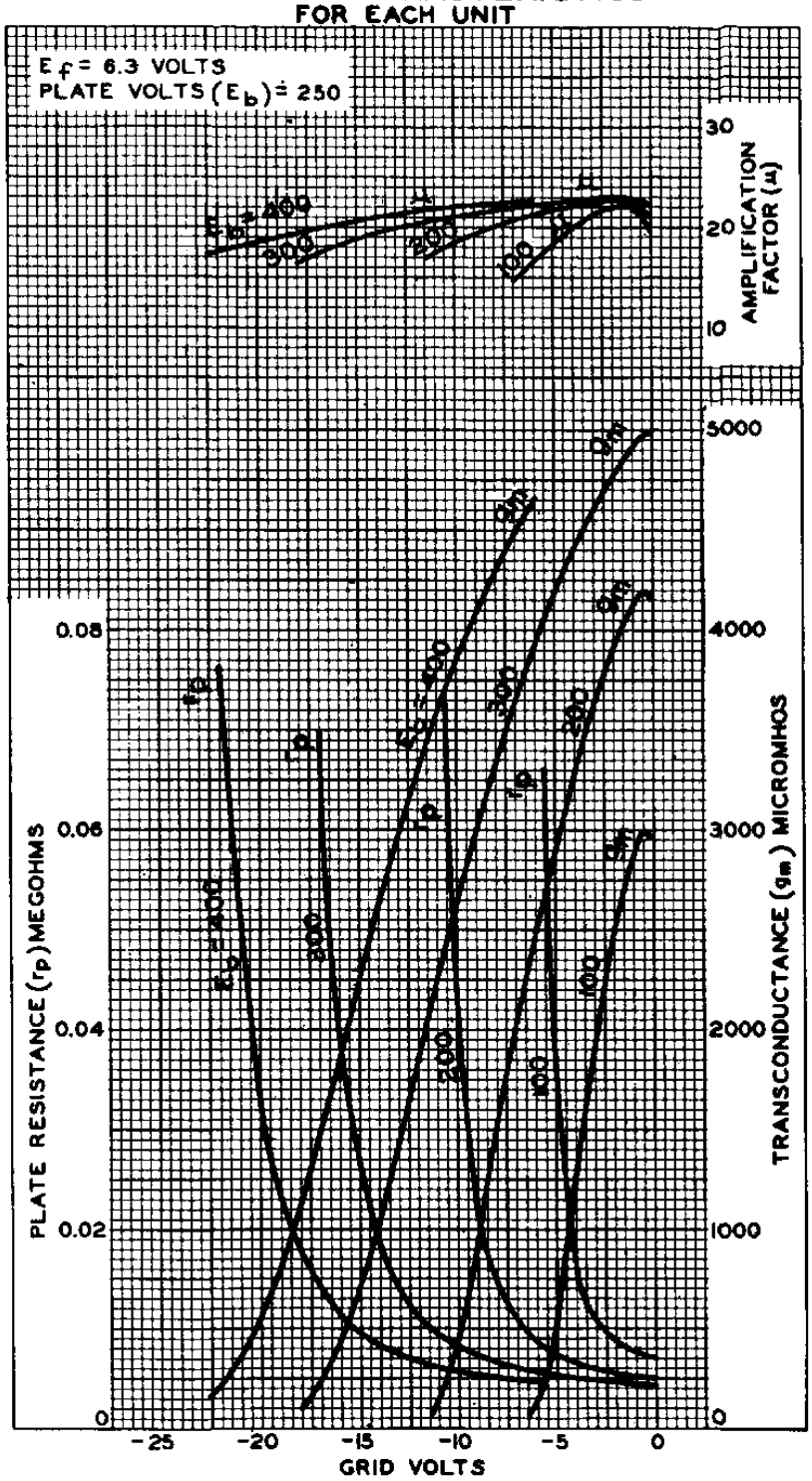
♦ This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

■ Under no circumstances should this absolute value be exceeded.

6SN7-GTA

AVERAGE CHARACTERISTICS
FOR EACH UNIT



OCT. 14, 1953 TUBE DIVISION 92CM-8122
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

RESISTANCE-COUPLED AMPLIFIER CHARTS (Continued)

See Circuit Diagram 1

13

E_{bb}	R_p	R_g	R_{g2}	R_k	C_{g2}	C_k	C	E_o	V.G.
90	0.05	0.05	–	1650	–	2.80	0.06	11	11
		0.1	–	2070	–	2.66	0.029	14	12
		0.25	–	2380	–	1.95	0.012	17	13
	0.1	0.1	–	3470	–	1.85	0.035	12	13
		0.25	–	3940	–	1.29	0.012	17	13
		0.5	–	4420	–	1.0	0.007	19	13
	0.25	0.25	–	7860	–	0.73	0.0135	14	13
		0.5	–	9760	–	0.55	0.007	18	13
		1.0	–	10690	–	0.47	0.004	20	13
180	0.05	0.05	–	1190	–	3.27	0.06	24	13
		0.1	–	1490	–	2.86	0.032	30	13
		0.25	–	1740	–	2.06	0.0115	36	13
	0.1	0.1	–	2330	–	2.19	0.038	26	14
		0.25	–	2830	–	1.35	0.012	34	14
		0.5	–	3230	–	1.15	0.006	38	14
	0.25	0.25	–	5560	–	0.81	0.013	28	14
		0.5	–	7000	–	0.62	0.007	36	14
		1.0	–	8110	–	0.5	0.004	40	14
300	0.05	0.05	–	1020	–	3.56	0.06	41	13
		0.1	–	1270	–	2.96	0.034	51	14
		0.25	–	1500	–	2.15	0.012	60	14
	0.1	0.1	–	1900	–	2.31	0.035	43	14
		0.25	–	2440	–	1.42	0.0125	56	14
		0.5	–	2700	–	1.2	0.0065	64	14
	0.25	0.25	–	4590	–	0.87	0.013	46	14
		0.5	–	5770	–	0.64	0.0075	57	14
		1.0	–	6950	–	0.54	0.004	64	14

6F8-G,6SN7-GT,6J5,12SN7-GT
6CG7,6FQ7,8CG7,7N7,7A4,12FQ7