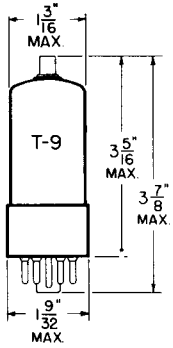
TUNG-SOL

BEAM PENTODE

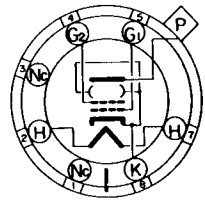


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
25.0 VOLTS 0.3 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
INTERMEDIATE SHELL
7 PIN OCTAL
6AM

THE 25BQ6GT IS A BEAM PENTODE DESIGNED SPECIFICALLY FOR USE AS A HORIZONTAL DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS USING MAGNETIC DEFLECTION. THE PLATE IS BROUGHT OUT TO A TOP CAP FOR ISOLATION OF THE HIGH VOLTAGE AND CONVENIENCE IN CIRCUIT LAYOUT. IT'S ELECTRICAL CHARACTERISTICS ARE SUCH AS TO PROVIDE GOOD PERFORMANCE WHERE THE SUPPLY VOLTAGES ARE LIMITED.

DIRECT INTERELECTRODE CAPACITANCES
WITH NO EXTERNAL SHIELD

GRID TO PLATE: (G_1 TO P)	0.95	μμf
INPUT: G_1 TO (H+K&BP+G_2)	14	μμf
OUTPUT: P TO (H+K&BP+G_2)	9.5	μμf

RATINGS – ABSOLUTE VALUES[A]

HORIZONTAL DEFLECTION AMPLIFIER
FOR OPERATION IN A 525 LINE, 30 FRAME SYSTEM[B]

HEATER VOLTAGE	25.0	VOLTS
MAXIMUM PEAK HEATER-CATHODE VOLTAGE	200	VOLTS
MAXIMUM PLATE SUPPLY VOLTAGE[C]	600	VOLTS
MAXIMUM GRID #2 VOLTAGE	220	VOLTS
MAXIMUM NEGATIVE DC GRID #1 VOLTAGE	-55	VOLTS
MAXIMUM PLATE INPUT	35	WATTS
MAXIMUM PLATE DISSIPATION	12	WATTS
MAXIMUM GRID #2 INPUT	2.8	WATTS
MAXIMUM PLATE CURRENT	110	MA.
MAXIMUM PEAK POSITIVE PLATE SURGE VOLTAGE[D]	5500	VOLTS
MAXIMUM PEAK NEGATIVE GRID #1 SURGE VOLTAGE[D]	-150	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE	0.6	MEGOHM

[A] ABSOLUTE MAXIMUM RATINGS ARE THE LIMITING VALUES ABOVE WHICH THE SERVICEABILITY OF THE TUBE MAY BE IMPAIRED FROM THE VIEWPOINT OF LIFE AND SATISFACTORY PERFORMANCE. THEREFORE, IN ORDER NOT TO EXCEED THESE ABSOLUTE RATINGS, THE EQUIPMENT DESIGNER HAS THE RESPONSIBILITY OF DETERMINING AN AVERAGE DESIGN VALUE FOR EACH RATING BELOW THE ABSOLUTE VALUE OF THAT RATING BY AN AMOUNT SUCH THAT THE ABSOLUTE VALUES WILL NEVER BE EXCEEDED UNDER ANY USUAL CONDITION OF LINE VOLTAGE VARIATION, MANUFACTURING VARIATIONS (INCLUDING COMPONENTS) IN THE EQUIPMENT ITSELF, OR ADJUSTMENTS OF CONTROLS.

[B] AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE CONCERNING TELEVISION BROADCAST STATIONS," FEDERAL COMMUNICATIONS COMMISSION.

[C] LIMITATION ON MAXIMUM DC PLATE SUPPLY POTENTIAL ESTABLISHED BY NO-SIGNAL PLATE DISSIPATION WHICH IN TURN IS DEPENDENT UPON CIRCUITRY.

[D] THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE AND ITS DURATION MUST BE LIMITED TO 10 MICROSECONDS.

CONTINUED ON FOLLOWING PAGE

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CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A_1 AMPLIFIER

HEATER VOLTAGE	25.0	VOLTS
HEATER CURRENT	0.3	AMP.
PLATE VOLTAGE	250	VOLTS
GRID #2 VOLTAGE	150	VOLTS
GRID #1 VOLTAGE	-22.5	VOLTS
PLATE CURRENT	55	MA.
GRID #2 CURRENT	2.1	MA.
TRANSCONDUCTANCE	5500	µMHOS
G_1 TO G_2 AMPLIFICATION FACTOR	4.5	

HORIZONTAL DEFLECTION AMPLIFIER
FOR OPERATION IN A 525 LINE, 30 FRAME SYSTEM[B]

	NOTE E	NOTE F	NOTE G	NOTE H	
HEATER VOLTAGE	25.0	25.0	25.0	25.0	VOLTS
HEATER CURRENT	0.3	0.3	0.3	0.3	AMP.
POWER SUPPLY VOLTAGE:					
FROM DC SUPPLY	250	270	360	250	VOLTS
FROM DC BOOST	0	100	80	100	VOLTS
TOTAL SUPPLY VOLTAGE	250	370	440	350	VOLTS
OPERATING GRID #2 VOLTAGE	130	130	105	140	VOLTS
GRID #2 DROPPING RESISTOR	10 000	24 000	67 000	18 000	OHMS
CATHODE BIAS RESISTOR	47	100	100	43	OHMS
CATHODE BY-PASS CAPACITOR	10	10	10	10	µf
PEAK TO PEAK GRID SIGNAL VOLTAGE (APPROX.)[J]	75	75	75	75	VOLTS
PEAK FORWARD PLATE VOLTAGE (APPROX.)[K]	2 500	3 600	4 500	3 000	VOLTS
PICTURE TUBE ANODE VOLTAGE (APPROX.)[K]	10 000	10 000	10 000	10 000	VOLTS
PLATE CURRENT	90	60	60	99	MA.
GRID #2 CURRENT	12	10	5	11.5	MA.
GRID #1 CURRENT	30	30	40	30	µA.
GRID #1 RESISTANCE	0.47	0.47	0.47	0.47	MEGOHM
PLATE DISSIPATION (APPROX.)	6	8	8	8	WATTS
SWEEP WIDTH (12LP4 PICTURE TUBE)	11.5	11.5	11.5	11.5	INCHES

[B] AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE CONCERNING TELEVISION BROADCAST STATIONS," FEDERAL COMMUNICATIONS COMMISSION.

[E] DIRECT-COUPLED CIRCUIT USING HIGH-IMPEDANCE YOKE, (APPROX. 30 MH), HAZELTINE BULLETIN 7060 MODIFIED TO INCORPORATE CHARGING CHOKE WITH AUTO WINDING FOR HIGH VOLTAGE.

[F] TRANSFORMER-COUPLED CIRCUIT USING 8.3 MH. YOKE AND RAM R33 TRANSFORMER OMITTING DAMPER LOAD RESISTOR.

[G] TRANSFORMER-COUPLED CIRCUIT USING 8.3 MH. YOKE AND ELECTROMETRIC S-10-80 TRANSFORMER.

[H] TRANSFORMER-COUPLED CIRCUIT USING G.E. 77J1 TRANSFORMER.

[J] NEGATIVE PEAKING USED. ADJUST SHAPE OF GRID VOLTAGE FOR MINIMUM PLATE INPUT.

[K] MEASURED WITH 100 UA TOTAL PICTURE TUBE DRAIN.

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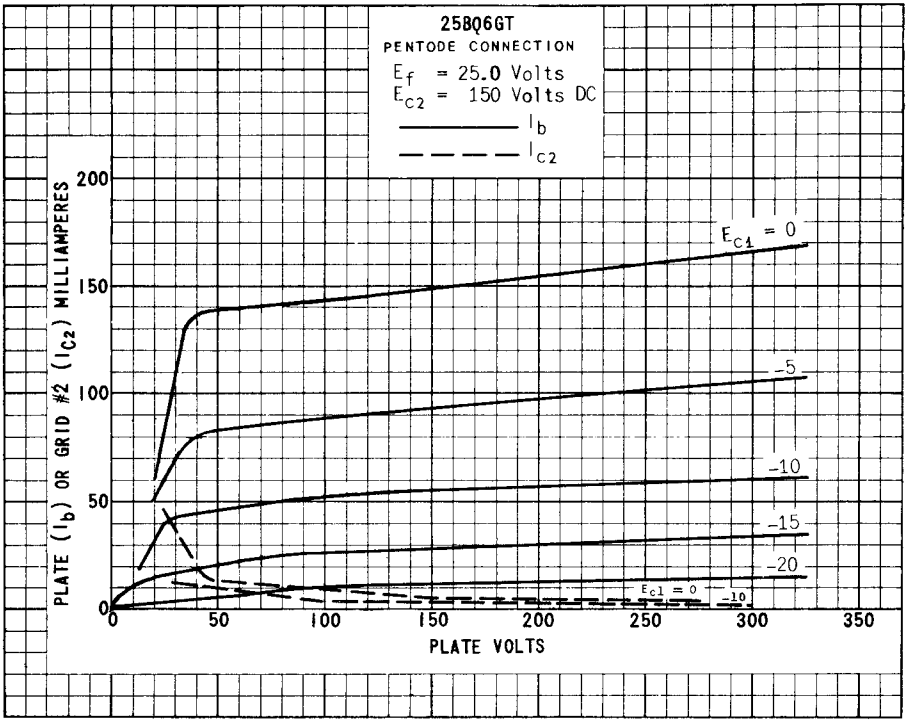

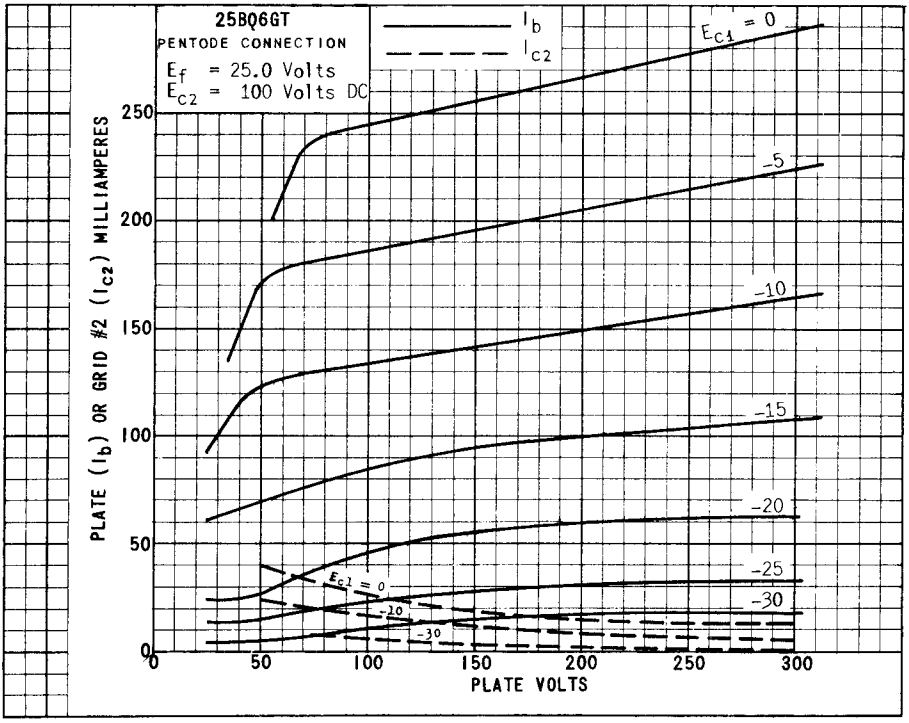

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PLATE
2347
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1950

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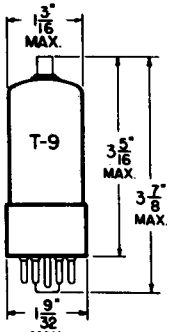
TUNG-SOL

BEAM PENTODE

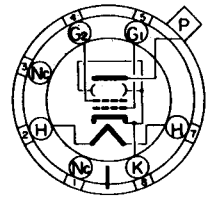


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
25.0 VOLTS 0.3 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
INTERMEDIATE SHELL
7 PIN OCTAL
6AM

THE 25BQ6GT IS A BEAM PENTODE DESIGNED SPECIFICALLY FOR USE AS A HORIZONTAL DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS USING MAGNETIC DEFLECTION. THE PLATE IS BROUGHT OUT TO A TOP CAP FOR ISOLATION OF THE HIGH VOLTAGE AND CONVENIENCE IN CIRCUIT LAYOUT. ITS ELECTRICAL CHARACTERISTICS ARE SUCH AS TO PROVIDE GOOD PERFORMANCE WHERE THE SUPPLY VOLTAGES ARE LIMITED.

DIRECT INTERELECTRODE CAPACITANCES

GRID #1 TO PLATE: (G_1 TO P)	0.6	μμf
INPUT: G_1 TO (H+K+G_2+BP)	15	μμf
OUTPUT: P TO (H+K+G_2+BP)	7.5	μμf

RATINGS

INTERPRETED ACCORDING TO RMA STANDARD M8-210

HORIZONTAL DEFLECTION AMPLIFIER[A]

HEATER VOLTAGE	25.0	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE:		
TOTAL DC AND PEAK	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE:		
DC	100	VOLTS
TOTAL DC AND PEAK	200	VOLTS
MAXIMUM DC PLATE SUPPLY VOLTAGE (BOOST + POWER SUPPLY)	550	VOLTS
MAXIMUM PEAK POSITIVE PLATE VOLTAGE (ABSOLUTE MAXIMUM)	5 500	VOLTS
MAXIMUM PEAK NEGATIVE PLATE VOLTAGE	1 250	VOLTS
MAXIMUM PLATE DISSIPATION[B]	11	WATTS
MAXIMUM PEAK NEGATIVE GRID #1 VOLTAGE	300	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	175	VOLTS
MAXIMUM GRID #2 DISSIPATION	2.5	WATTS
MAXIMUM AVERAGE CATHODE CURRENT	110	MA.
MAXIMUM PEAK CATHODE CURRENT	400	MA.
MAXIMUM GRID #1 CIRCUIT RESISTANCE	0.47	MEGOHM
MAXIMUM BULB TEMPERATURE (AT HOTTEST POINT)	220°	CENTIGRADE

[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE.

[B] 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.

CONTINUED ON FOLLOWING PAGE

→ INDICATES A CHANGE OR ADDITION.

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PLATE 3150
FEB. 1 1953

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A_1 AMPLIFIER

HEATER VOLTAGE	25.0	VOLTS
HEATER CURRENT	0.3	AMP.
PENTODE CONNECTION:[C]		
PLATE CURRENT	55	MA.
GRID #2 CURRENT	2.1	MA.
TRANSCONDUCTANCE	5 500	µMHOS
PLATE RESISTANCE	20 000	OHMS
ZERO-BIAS:[D]		
PLATE CURRENT	225	MA.
GRID #2 CURRENT	25	MA.
CUT-OFF:[E]		
GRID #1 VOLTAGE (APPROX.)	-46	VOLTS
TRIODE AMPLIFICATION FACTOR[F]	4.3	

[C] WITH E_b = 250 VOLTS, E_{C2} = 150 VOLTS AND E_{C1} = -22.5 VOLTS.

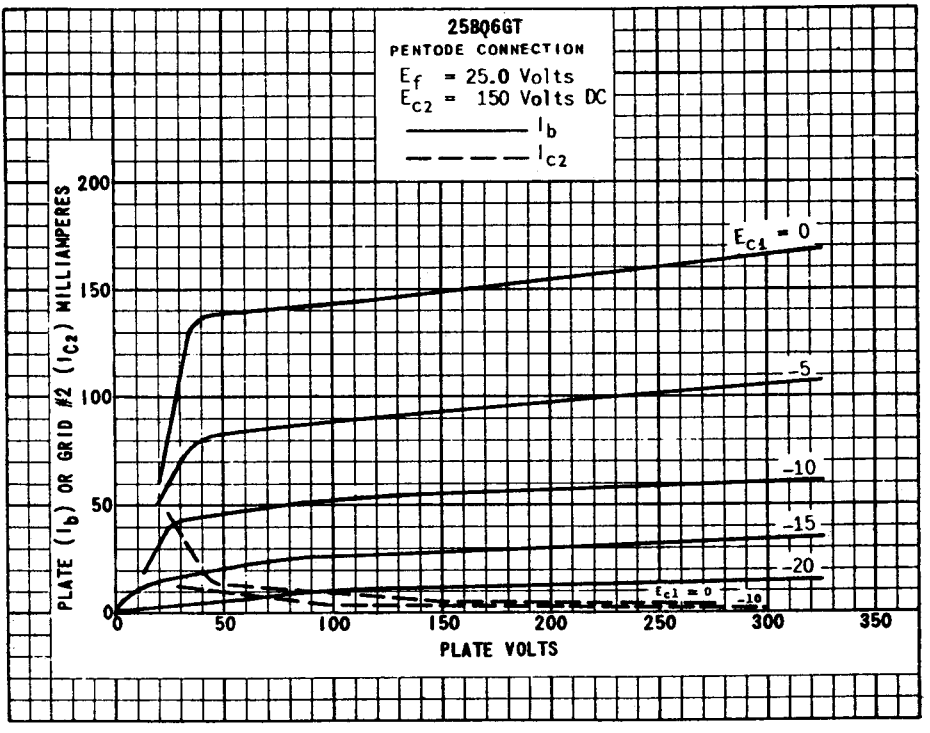
[D] WITH E_b = 60 VOLTS AND E_{C2} = 150 VOLTS.

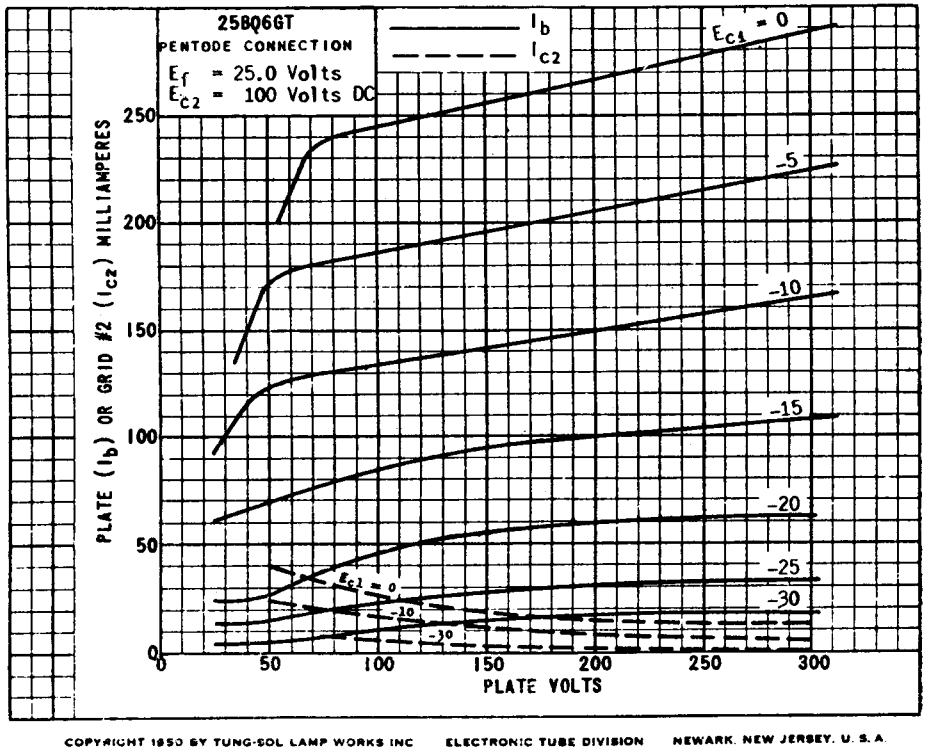
[E] FOR I_b = 1 MA. WITH E_b = 250 VOLTS AND E_{C2} = 150 VOLTS

[F] WITH E_b = E_{C2} = 150 VOLTS AND E_{C1} = -22.5 VOLTS.

→ INDICATES A CHANGE OR ADDITION.

PLATE 3151
FEB. 1 1953





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