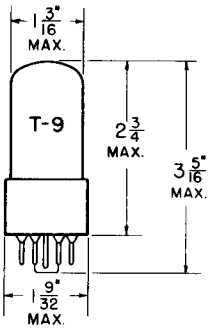
**TUNG-SOL**

# BEAM PENTODE

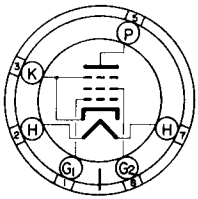



GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
25 VOLTS 300 MA.
AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**
INTERMEDIATE SHELL
6 PIN OCTAL
6CK

THE 25AV5GT IS A BEAM POWER AMPLIFIER INTENDED PRIMARILY FOR OPERATION WITH RELATIVELY LOW SUPPLY VOLTAGE AS A HORIZONTAL DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. IT IS DESIGNED TO WITHSTAND HIGH-SURGE PLATE VOLTAGES FOR RELATIVELY SHORT PERIODS OF TIME. IT CAN BE USED WITH DIRECT OR WITH TRANSFORMER HORIZONTAL-YOKE DRIVE.

## RATINGS

INTERPRETED ACCORDING TO RMA STANDARD M8-210

HORIZONTAL DEFLECTION AMPLIFIER

| | | | |
|---|---|---|---|
| HEATER VOLTAGE | | 25 | VOLTS |
| MAXIMUM HEATER-CATHODE VOLTAGE | | 180 | VOLTS |
| MAXIMUM PLATE SUPPLY VOLTAGE | | 550 | VOLTS |
| MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE | [AB] | 5 500 | VOLTS |
| MAXIMUM GRID #2 VOLTAGE | | 200 | VOLTS |
| MAXIMUM GRID #1 VOLTAGE | | -100 | VOLTS |
| MAXIMUM PEAK NEGATIVE PULSE GRID #1 VOLTAGE | [A] | -400 | VOLTS |
| MAXIMUM PLATE DISSIPATION | | 11 | WATTS |
| MAXIMUM GRID #2 DISSIPATION | | 2.5 | WATTS |
| MAXIMUM PLATE CURRENT | | 100 | MA. |
| MAXIMUM GRID #1 CIRCUIT RESISTANCE | [C] | 1 | MEGOHM |

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

[B] VALUE GIVEN IS TO BE CONSIDERED AS THE ABSOLUTE VOLTAGE BEYOND WHICH THE SERVICEABILITY OF THE TUBE MAY BE IMPAIRED.

[C] THE USE OF A CATHODE RESISTOR OR OTHER SUITABLE PROTECTIVE DEVICE IS NECESSARY TO PROTECT THE TUBE IN EVENT OF LOSS OF EXCITATION AND CONSEQUENT LOSS OF DEVELOPED BIAS.

CONTINUED ON FOLLOWING PAGE

→ INDICATES A CHANGE OR ADDITION.

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1950

**TUNG-SOL**

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## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

### CLASS $A_1$ AMPLIFIER

| | | |
|---|---|---|
| HEATER VOLTAGE | 25 | VOLTS |
| HEATER CURRENT | 300 | MA. |
| PLATE VOLTAGE | 250 | VOLTS |
| GRID #2 VOLTAGE | 150 | VOLTS |
| GRID #1 VOLTAGE | -22.5 | VOLTS |
| TRANSCONDUCTANCE | 5 800 | µMHOS |
| PLATE CURRENT | 55 | MA. |
| GRID #2 CURRENT | 2.1 | MA. |
| GRID #2 TO GRID #1 AMPLIFICATION FACTOR[D] | 4.5 | |

[D] TRIODE CONNECTION (SCREEN TIED TO PLATE) WITH $E_b = E_{c2} = 150$ VOLTS AND $E_{c1} = -22.5$ VOLTS.

### HORIZONTAL DEFLECTION AMPLIFIER

| | 8AP4A | 12KP4A | 16KP4 | |
|---|---|---|---|---|
| HEATER VOLTAGE | 25 | 25 | 25 | VOLTS |
| HEATER CURRENT | 300 | 300 | 300 | MA. |
| TOTAL PLATE VOLTAGE | 240 | 370 | 410 | VOLTS |
| PLATE SUPPLY VOLTAGE | 150 | 250 | 250 | VOLTS |
| BOOST VOLTAGE | 90 | 120 | 160 | VOLTS |
| GRID #2 SUPPLY VOLTAGE | 150 | 250 | — | VOLTS |
| GRID #2 RESISTOR | 1000 | 10 000 | — | OHMS |
| GRID #2 VOLTAGE | 135 | 165 | 122 | VOLTS |
| CATHODE BIAS RESISTOR | 0 | 0 | 0 | OHMS |
| GRID #1 RESISTOR | 0.22 | 0.47 | 1 | MEGOHM |
| PEAK-TO-PEAK GRID SIGNAL VOLTAGE (APPROX.) | 90 | 90 | 220 | VOLTS |
| PEAK POSITIVE PULSE PLATE VOLTAGE (APPROX.) | 2.9 | 3.6 | 4.3 | KV. |
| PLATE CURRENT | 84 | 89 | 87 | MA. |
| GRID #2 CURRENT | 15 | 8.5 | 15 | MA. |
| GRID #1 CURRENT | 66 | 40 | 64 | µA. |
| PICTURE TUBE ANODE VOLTAGE | 8.7[E] | 10.8[F] | 12.8[F] | KV. |
| DEFLECTION ANGLE | 54 | 54 | 65 | DEGREES |
| SWEEP WIDTH | 7 3/4 | 11 1/2 | 13 1/2 | INCHES |

[E] MEASURED WITH 75 MICROAMPERES TOTAL PICTURE TUBE DRAIN.

[F] MEASURED WITH 100 MICROAMPERES TOTAL PICTURE TUBE DRAIN.

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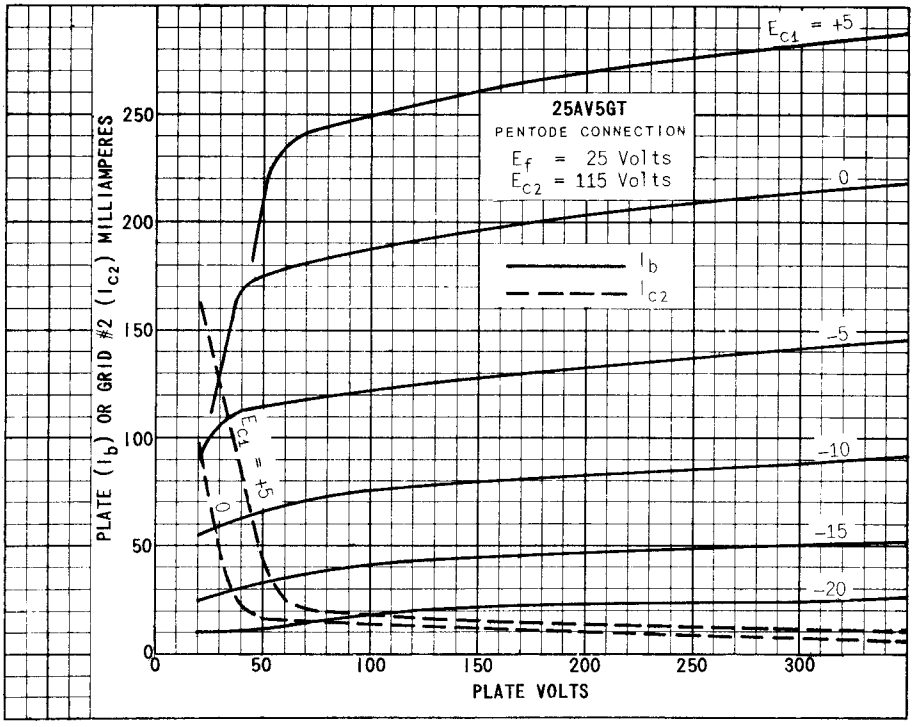


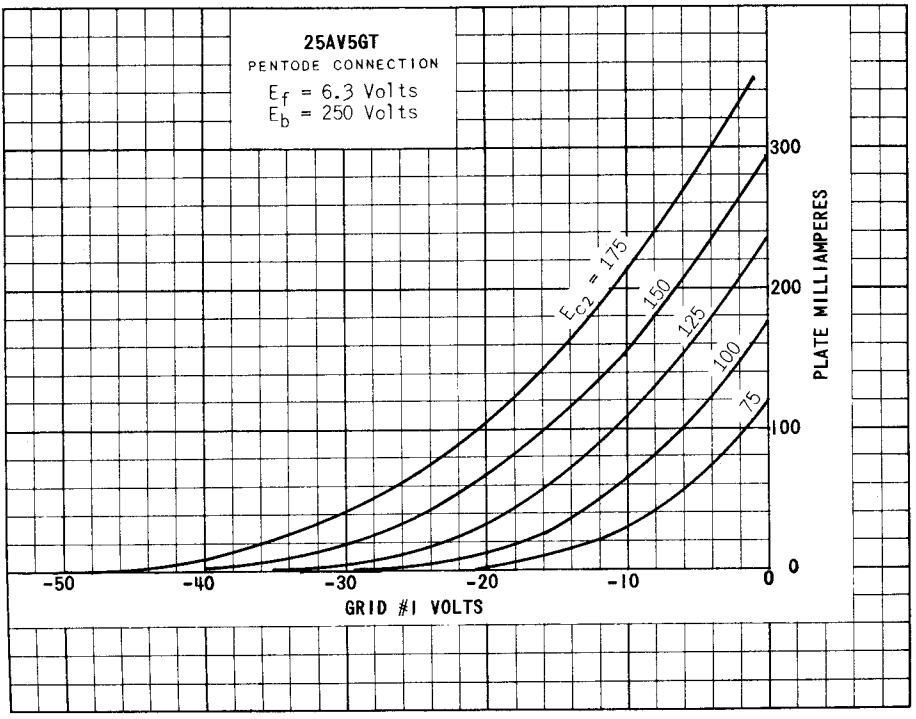


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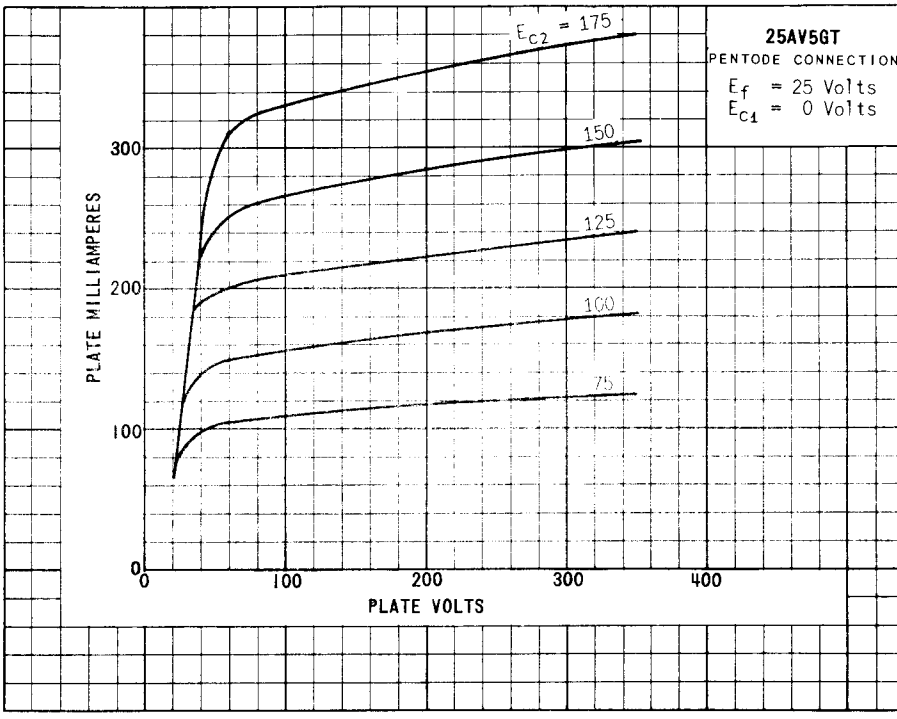
# 25AV5GT (6AV5GT)

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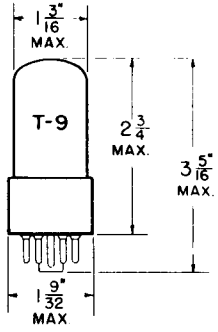
# TUNG-SOL

## BEAM PENTODE

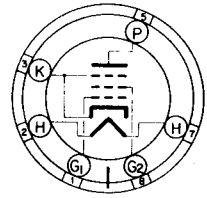



GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
25 VOLTS 0.3 AMP.
AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**
INTERMEDIATE SHELL
6 PIN OCTAL
6CK

THE 25AV5GT IS A BEAM POWER AMPLIFIER INTENDED PRIMARILY FOR OPERATION WITH RELATIVELY LOW SUPPLY VOLTAGE AS A HORIZONTAL DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. IT IS DESIGNED TO WITHSTAND HIGH-SURGE PLATE VOLTAGES FOR RELATIVELY SHORT PERIODS OF TIME. IT CAN BE USED WITH DIRECT OR WITH TRANSFORMER HORIZONTAL-YOKE DRIVE.

### DIRECT INTERELECTRODE CAPACITANCES

| | | |
|---|---|---|
| GRID #1 TO PLATE: ($G_1$ TO P) | 0.7 | μμf |
| INPUT: $G_1$ TO (H+K+$G_2$+$G_3$) | 14 | μμf |
| OUTPUT: P TO (H+K+$G_2$+$G_3$) | 7.0 | μμf |

### RATINGS

INTERPRETED ACCORDING TO RMA STANDARD M8-210

HORIZONTAL DEFLECTION AMPLIFIER[A]

| | | |
|---|---|---|
| HEATER VOLTAGE | 6.3 | 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) | 210° | 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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## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS $A_1$ AMPLIFIER

| | | |
|---|---|---|
| HEATER VOLTAGE | 6.3 | VOLTS |
| HEATER CURRENT | 1.2 | AMP. |
| PENTODE OPERATION:[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 (INSTANEOUS VALUES).

[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.

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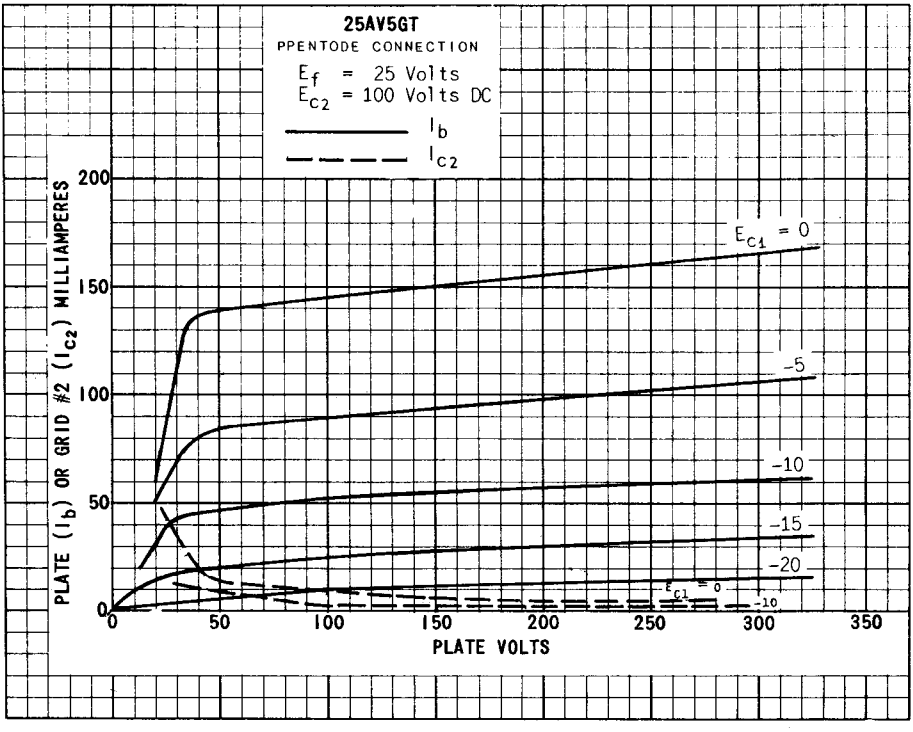


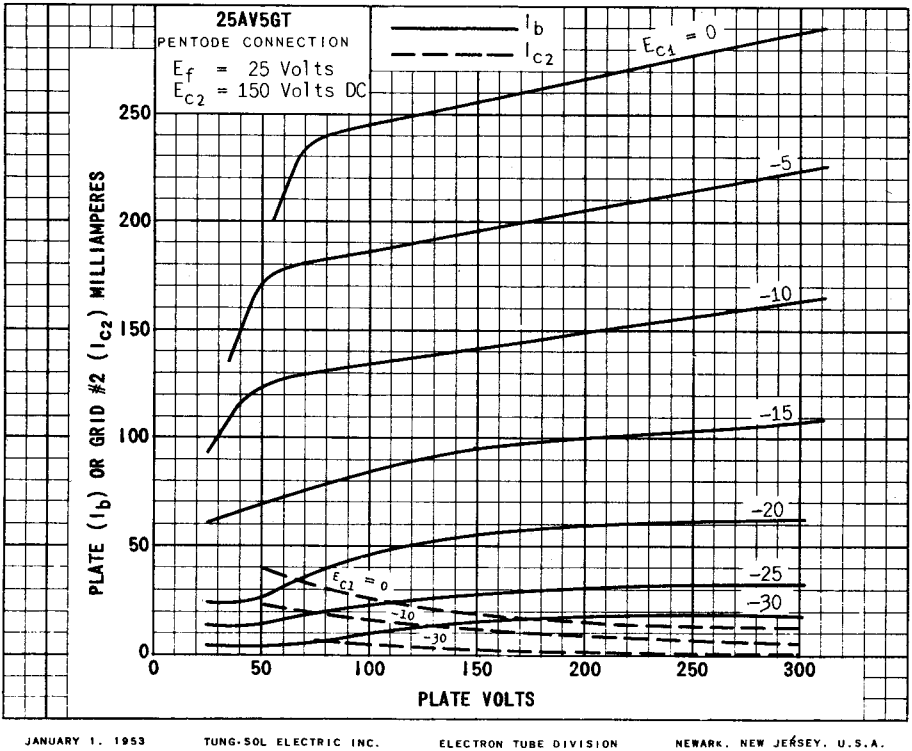


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