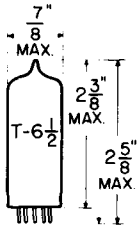
**TUNG-SOL**

# BEAM-POWER PENTODE

MINIATURE TYPE

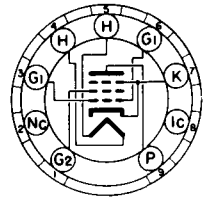



**GLASS BULB**

COATED UNIPOTENTIAL CATHODE

HEATER
6.3 VOLTS 1.2 AMP.
AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**
MINIATURE
SMALL-BUTTON
9 PIN BASE
9HN

THE 6DT5 IS A BEAM POWER PENTODE IN THE 9-PIN MINIATURE CONSTRUCTION. IT IS DESIGNED FOR SERVICE AS A VERTICAL DEFLECTION OUTPUT AMPLIFIER IN TELEVISION RECEIVERS UTILIZING A 110° DEFLECTION ANGLE PICTURE TUBE AND A B+ SUPPLY VOLTAGE OF 250 VOLTS. IT HAS HIGH ZERO BIAS PLATE CURRENT AND A HIGH PLATE CURRENT TO GRID #2 CURRENT RATIO. EXCEPT FOR HEATER RATINGS AND WARM-UP TIME, THE 6DT5 IS IDENTICAL TO THE 12DT5 & 25DT5.

## DIRECT INTERELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

| | | |
|---|---|---|
| GRID #1 TO PLATE | 0.57 | μμf |
| INPUT | 12.5 | μμf |
| OUTPUT | 4.9 | μμf |

## RATINGS[A]

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

VERTICAL DEFLECTION SERVICE[B]

DEFLECTING 110° PICTURE TUBE

| | | |
|---|---|---|
| HEATER VOLTAGE | 6.3 | VOLTS |
| MAXIMUM PLATE VOLTAGE | 315 | VOLTS |
| MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE (ABS. MAX.) | 2 200 | VOLTS |
| MAXIMUM GRID #2 VOLTAGE | 285 | VOLTS |
| MAXIMUM PEAK NEGATIVE PULSE GRID #1 VOLTAGE | -250 | VOLTS |
| MAXIMUM PLATE DISSIPATION[C] | 9.0 | WATTS |
| MAXIMUM GRID #2 DISSIPATION | 2.0 | WATTS |
| MAXIMUM CATHODE CURRENT: | | |
| AVERAGE | 55 | MA. |
| PEAK | 190 | MA. |
| MAXIMUM HEATER POSITIVE OR NEGATIVE WITH RESPECT TO[D] CATHODE (TOTAL DC AND PEAK) | 200 | VOLTS |
| MAXIMUM GRID #1 CIRCUIT VALUES | | |
| FIXED BIAS | 0.5 | MEGOHM |
| CATHODE BIAS | 1.0 | MEGOHM |
| HEATER WARM-UP TIME (APPROX.)* | 11.0 | SECONDS |

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## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| HEATER VOLTAGE | 6.3 | 6.3 | 6.3 | VOLTS |
| HEATER CURRENT | 1.2 | 1.2 | 1.2 | AMP. |
| PLATE VOLTAGE | 60 | 80 ← | 250 | VOLTS |
| GRID #2 (SCREEN) VOLTAGE | 150 | 250 | 250 | VOLTS |
| GRID #1 VOLTAGE | 0[E] | 0[E] | -16.5 | VOLTS |
| TRANSCONDUCTANCE | --- | --- | 6 200 | μMHOS |
| PLATE CURRENT | → .95 | 195[F] | 44 | MA. |
| GRID #2 CURRENT | → 8.5 | 19[F] | 1.5 | MA. |
| GRID #1 CUTOFF VOLTAGE[G] | --- | --- | -35 | VOLTS |

[A] DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.

[B] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

[C] 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.

[E] APPLIED FOR SHORT INTERVAL (MAXIMUM OF 2 SECONDS) SO AS NOT TO DAMAGE TUBE.

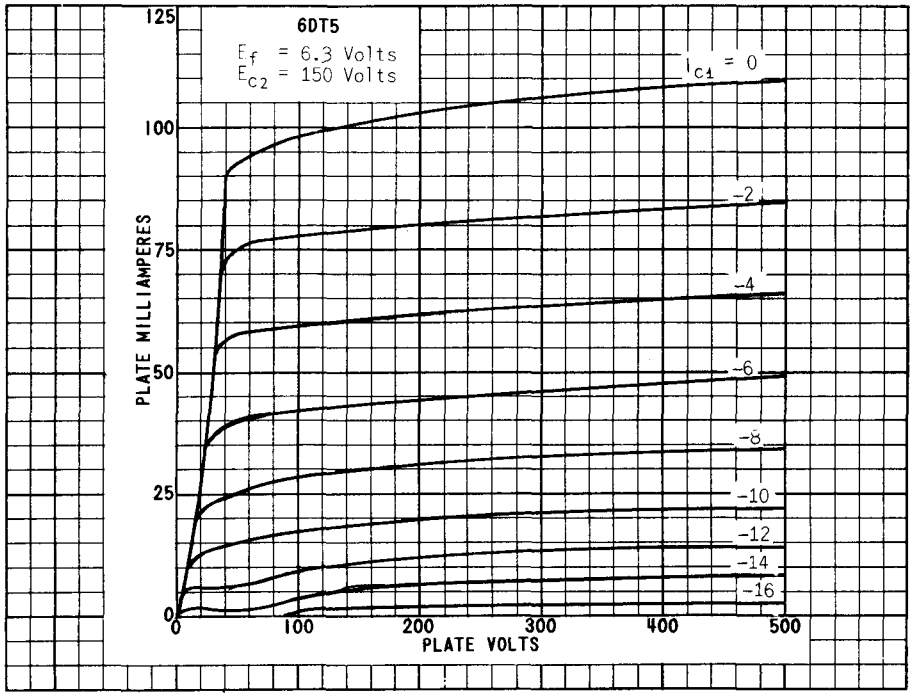
[F] THESE VALUES CAN BE MEASURED BY A METHOD INVOLVING A RE-CURRENT WAVEFORM SUCH THAT THE PLATE DISSIPATION AND GRID #2 INPUT WILL BE KEPT WITHIN RATINGS IN ORDER TO PREVENT DAMAGE TO THE TUBE.

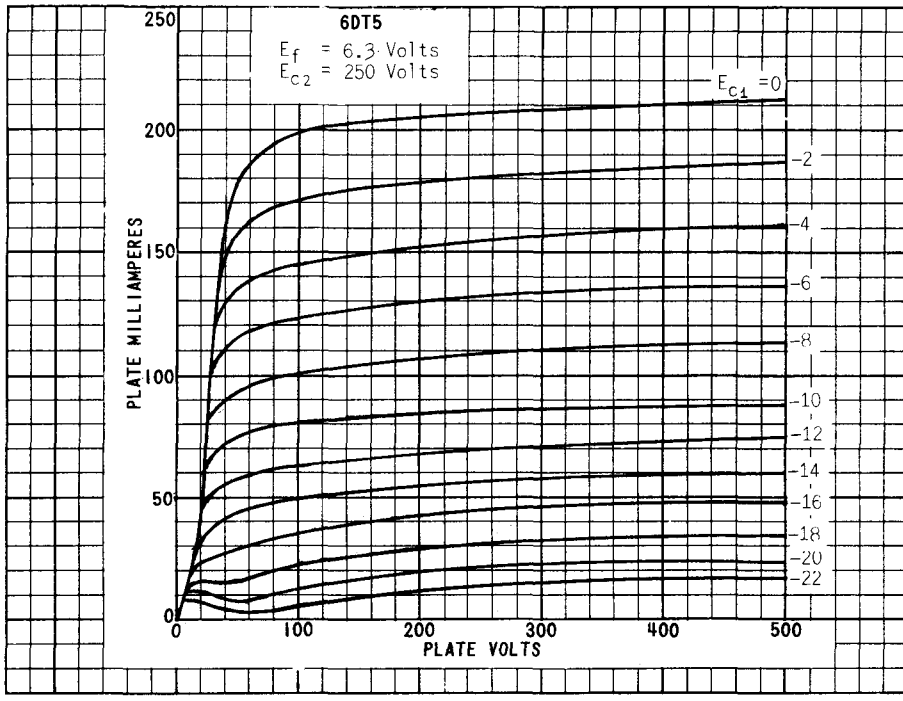
[G] FOR PLATE CURRENT OF 100 μAMPERES.

[*] HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

[⊕] DC COMPONENT MUST NOT EXCEED 100 VOLTS.

→ INDICATES A CHANGE.



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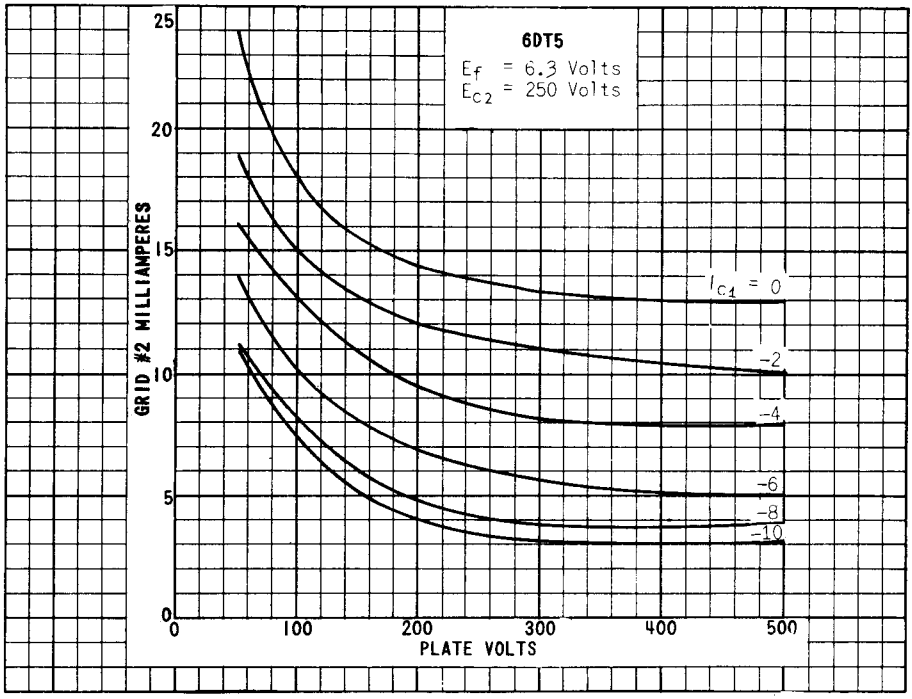
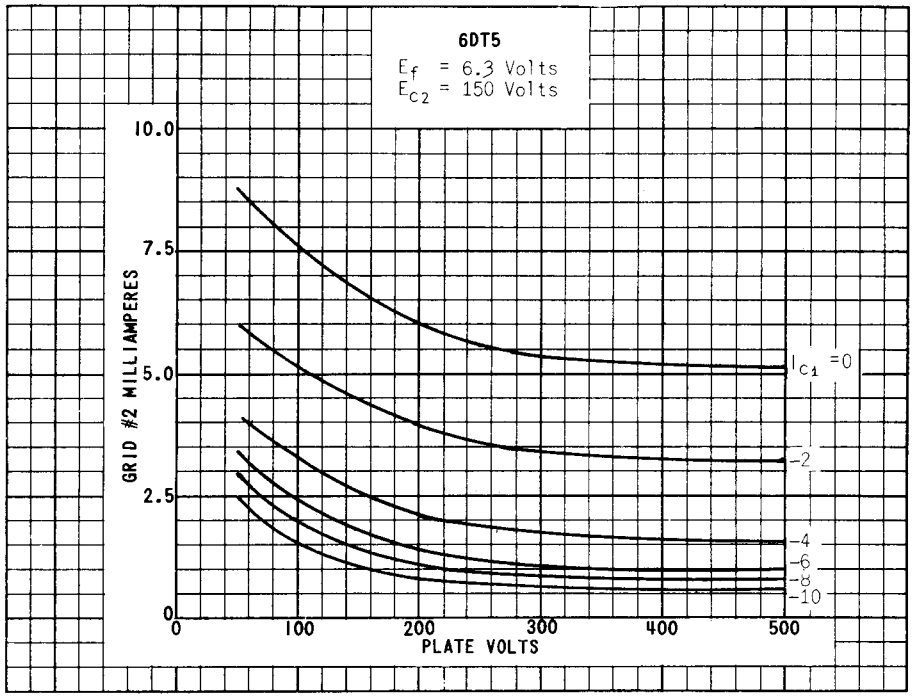
# 6DT5


6DT5
Ef = 6.3 Volts
Ec2 = 250 Volts
GRID #2 MILLIAMPERES
PLATE VOLTS
0
5
10
15
20
25
100
200
300
400
500
Ic1 = 0
-2
-4
-6
-8
-10


6DT5
Ef = 6.3 Volts
Ec2 = 150 Volts
GRID #2 MILLIAMPERES
PLATE VOLTS
0
2.5
5.0
7.5
10.0
100
200
300
400
500
Ic1 =0
-2
-4
-6
-8
-10