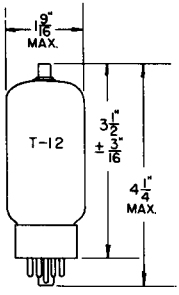
**TUNG-SOL**

# BEAM POWER PENTODE

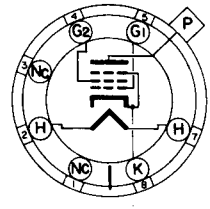



**GLASS BULB**
SKIRTED MINIATURE CAP

UNIPOTENTIAL CATHODE

HEATER
25.0 VOLTS 0.30 AMP.
AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**
SHORT MEDIUM-SHELL 7 PIN OCTAL
WITH EXTERNAL BARRIERS
6AM

THE 25DQ6A IS A HIGH-PERVEANCE BEAM POWER PENTODE DESIGNED FOR USE AS A HORIZONTAL DEFLECTION AMPLIFIER TUBE IN HIGH EFFICIENCY DEFLECTION CIRCUITS OF TELEVISION RECEIVERS. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TUBES WHICH ARE SIMILARLY CONTROLLED. EXCEPT FOR THE CONTROLLED HEATER WARM-UP TIME AND HEATER RATINGS THE 25DQ6A IS IDENTICAL TO THE 6DQ6A.

## DIRECT INTERELECTRODE CAPACITANCES—APPROX.
WITHOUT EXTERNAL SHIELD

| | | |
|---|---|---|
| GRID #1 TO PLATE | 0.55 | μμf |
| GRID #1 TO CATHODE & GRID #3, HEATER AND GRID #2 | 15 | μμf |
| PLATE TO CATHODE & GRID #3, HEATER AND GRID #2 | 7 | μμf |

## RATINGS [A]
INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM
HORIZONTAL DEFLECTION AMPLIFIER

| | | |
|---|---|---|
| HEATER VOLTAGE | 25.0 | VOLTS |
| MAXIMUM PLATE VOLTAGE: | | |
| DC (INCLUDING BOOST) | 700 | VOLTS |
| PEAK POSITIVE-PULSE (ABSOLUTE MAX.) [B] | 6 000 [C] | VOLTS |
| PEAK NEGATIVE-PULSE [B] | 1 375 | VOLTS |
| MAXIMUM DC GRID #2 VOLTAGE | 200 | VOLTS |
| MAXIMUM GRID #1 VOLTAGE: | | |
| DC | −50 | VOLTS |
| PEAK NEGATIVE-PULSE | 300 | VOLTS |
| MAXIMUM CATHODE CURRENT: | | |
| DC | 140 | MA. |
| PEAK | 440 | MA. |
| MAXIMUM GRID #2 INPUT | 3 | WATTS |

[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS; FEDERAL COMMUNICATIONS COMMISSION".

[B] THIS RATING IS APPLICABLE WHERE THE DURATION OF THE VOLTAGE PULSE DOES NOT EXCEED 15% OF ONE HORIZONTAL SCANNING CYCLE. IN A 525-LINE, 30-FRAME SYSTEM, 15% OF THE HORIZONTAL SCANNING CYCLE IS 10 MICROSECONDS.

[C] UNDER NO CIRCUMSTANCES SHOULD THIS ABSOLUTE VALUE BE EXCEEDED.

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## RATINGS[A]– CONT'D.

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HORIZONTAL DEFLECTION AMPLIFIER

| | | |
|---|---|---|
| MAXIMUM PLATE DISSIPATION[D] | 15 | WATTS |
| MAXIMUM PEAK HEATER–CATHODE VOLTAGE: | | |
| HEATER NEGATIVE WITH RESPECT TO CATHODE | | |
| TOTAL DC AND PEAK | 200 | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE | | |
| DC COMPONENT | 100 | VOLTS |
| TOTAL DC AND PEAK | 200 | VOLTS |
| MAXIMUM BULB TEMPERATURE (AT HOTTEST POINT ON BULB SURFACE) | 220 | °C |
| MAXIMUM CIRCUIT VALUES: | | |
| GRID #1 CIRCUIT RESISTANCE: | | |
| FOR GRID RESISTOR–BIAS OPERATION[D] | 1.0 | MEGOHM |
| HEATER WARM–UP TIME (AVERAGE)* | 11.0 | SECONDS |

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS $A_1$ AMPLIFIER

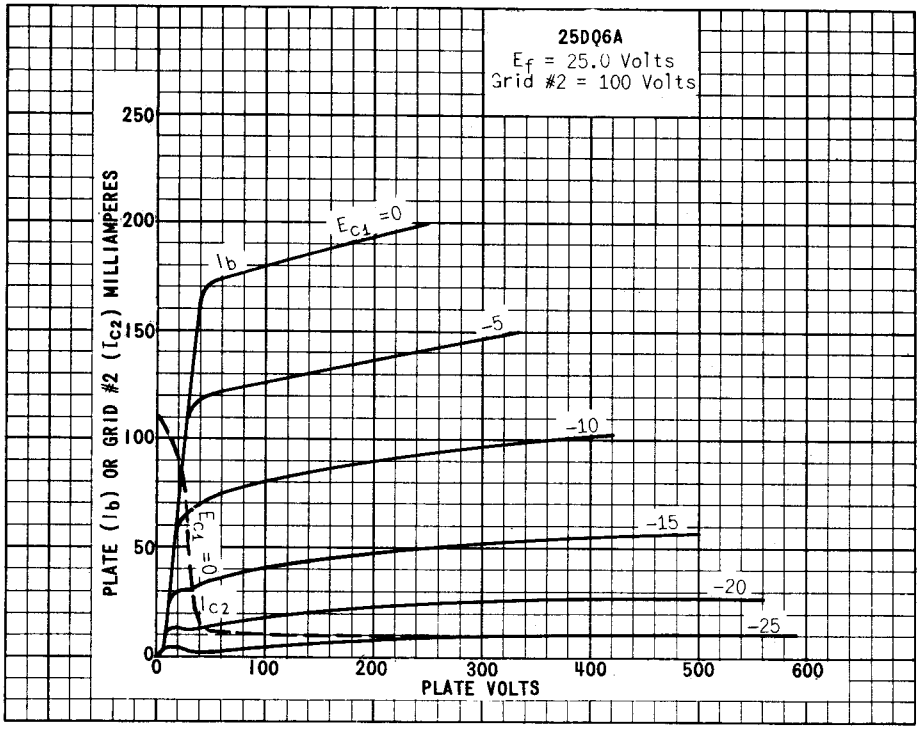
| | | | | |
|---|---|---|---|---|
| HEATER VOLTAGE | 25.0 | 25.0 | 25.0 | VOLTS |
| HEATER CURRENT | 0.30 | 0.30 | 0.30 | AMP. |
| PLATE VOLTAGE | 60 | 150 | 250 | VOLTS |
| GRID #2 VOLTAGE | 150 | 150 | 150 | VOLTS |
| GRID #1 VOLTAGE | 0 | -22.5 | -22.5 | VOLTS |
| MU–FACTOR, GRID #2 TO GRID #1 | --- | 4.1 | --- | |
| PLATE RESISTANCE (APPROX.) | --- | --- | 20 000 | OHMS |
| TRANSCONDUCTANCE | --- | --- | 6 600 | μMHOS |
| PLATE CURRENT | 300[E] | --- | 75 | MA. |
| GRID #2 CURRENT | 27[E] | --- | 2.4 | MA. |
| GRID #1 VOLTAGE (APPROX.) | | | | |
| FOR PLATE CURRENT OF 1 MA. | --- | --- | -46 | VOLTS |

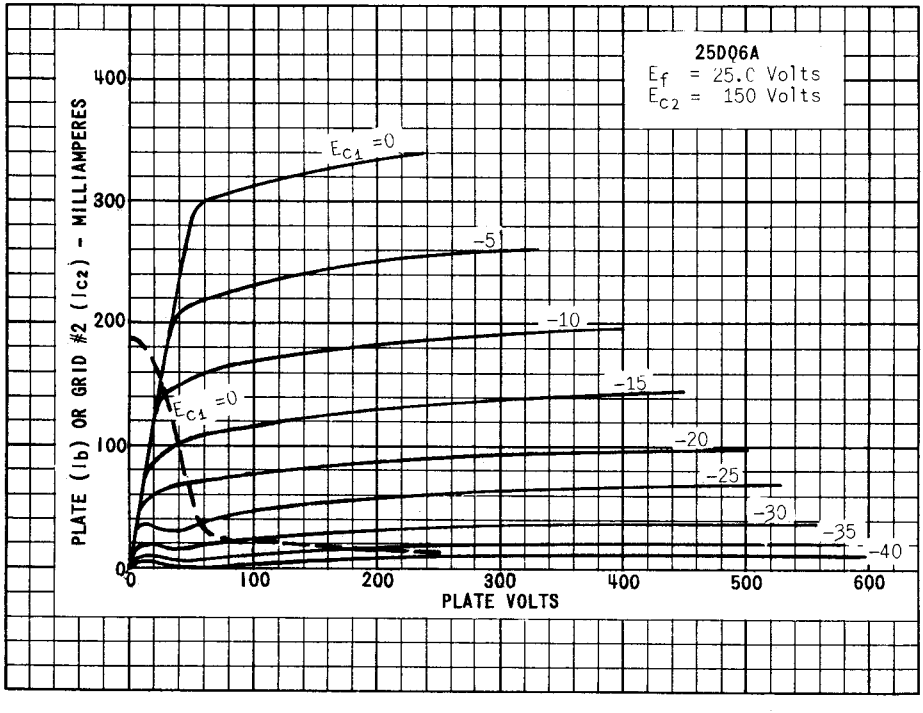
[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS; FEDERAL COMMUNICATIONS COMMISSION".

[D] IT IS ESSENTIAL THAT THE PLATE DISSIPATION BE LIMITED IN THE EVENT OF LOSS OF GRID SIGNAL. FOR THIS PURPOSE, SOME PROTECTIVE MEANS SUCH AS A CATHODE RESISTOR OF SUITABLE VALUE SHOULD BE EMPLOYED.

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

* 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.


25DQ6A
Ef = 25.0 Volts
Grid #2 = 100 Volts
PLATE (Ib) OR GRID #2 (Ic2) MILLIAMPERES
PLATE VOLTS
Ec1 =0
-5
-10
-15
-20
-25
Ib
Ec1 =0
Ic2
0
100
200
300
400
500
600
250
200
150
100
50


25DQ6A
Ef = 25.0 Volts
Ec2 = 150 Volts
PLATE (Ib) OR GRID #2 (Ic2) - MILLIAMPERES
PLATE VOLTS
Ec1 =0
-5
-10
-15
-20
-25
-30
-35
-40
Ec1 =0
0
100
200
300
400
500
600
400
300
200
100