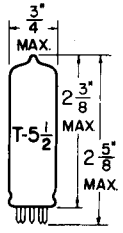
# TUNG-SOL

## PENTODE

MINIATURE TYPE




GLASS BULB

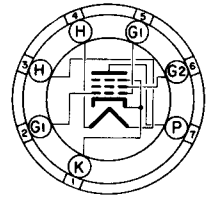
COATED UNIPOTENTIAL CATHODE

HEATER

12.6 VOLTS 0 0.4 AMP.

AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**

MINIATURE BUTTON
7 PIN BASE
7CV

THE 12AS5 IS A HEATER-CATHODE, BEAM PENTODE POWER AMPLIFIER IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED FOR USE AS AN OUTPUT TUBE IN AUTOMOBILE AND AC OPERATED RECEIVERS. EXCEPT FOR HEATER CHARACTERISTICS, THE 12AS5 IS IDENTICAL TO THE 6AS5.

### DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD

| | | |
|---|---|---|
| GRID #1 TO PLATE: (G1 TO P) | 0.6 | μμf |
| INPUT: G1 TO (H+K+G2+G3) | 12 | μμf |
| OUTPUT: P TO (H+K+G2+G3) | 6.2 | μμf |

### RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER MAXIMUM SYSTEM

| | | |
|---|---|---|
| HEATER VOLTAGE | 12.6 | VOLTS |
| MAXIMUM PLATE VOLTAGE | 150 | VOLTS |
| MAXIMUM GRID #2 SUPPLY VOLTAGE | 150 | VOLTS |
| MAXIMUM GRID #2 VOLTAGE | SEE GRID #2 RATING CURVE | |
| MAXIMUM PLATE DISSIPATION | 5.5 | WATTS |
| MAXIMUM GRID #2 DISSIPATION | 1.0 | WATT |
| MAXIMUM GRID #1 CIRCUIT RESISTANCE: | | |
| FIXED BIAS | 0.1 | MEGOHM |
| SELF BIAS | 0.5 | MEGOHM |
| MAXIMUM HEATER-CATHODE VOLTAGE: | | |
| HEATER NEGATIVE WITH RESPECT TO CATHODE | | |
| TOTAL DC AND PEAK | 90 | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE | | |
| TOTAL DC AND PEAK | 90 | VOLTS |

CONTINUED ON FOLLOWING PAGE

**TUNG-SOL**

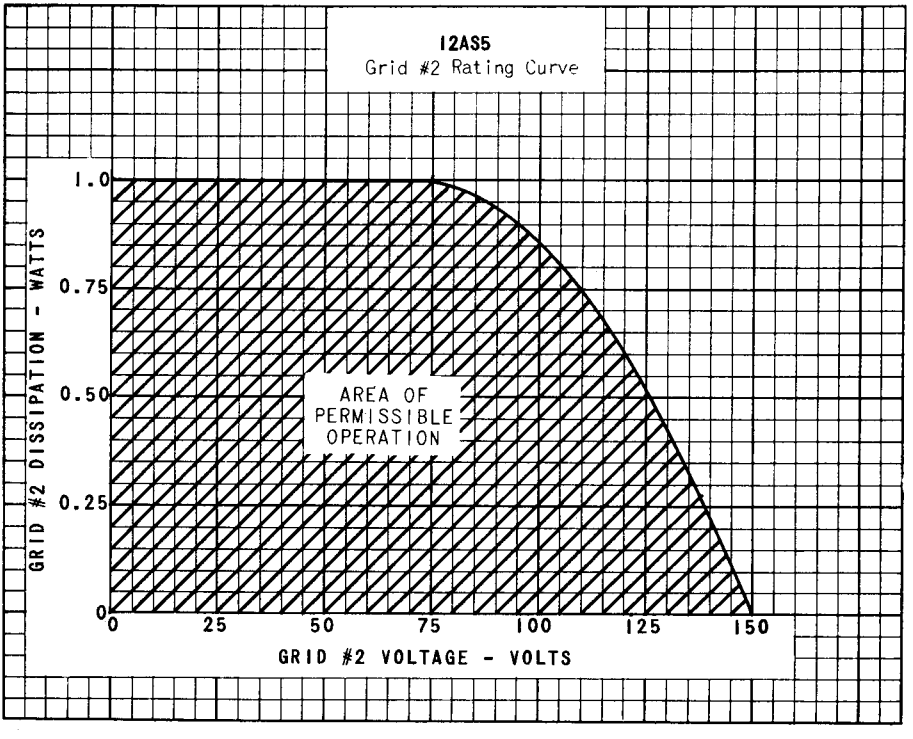
CONTINUED FROM PRECEDING PAGE

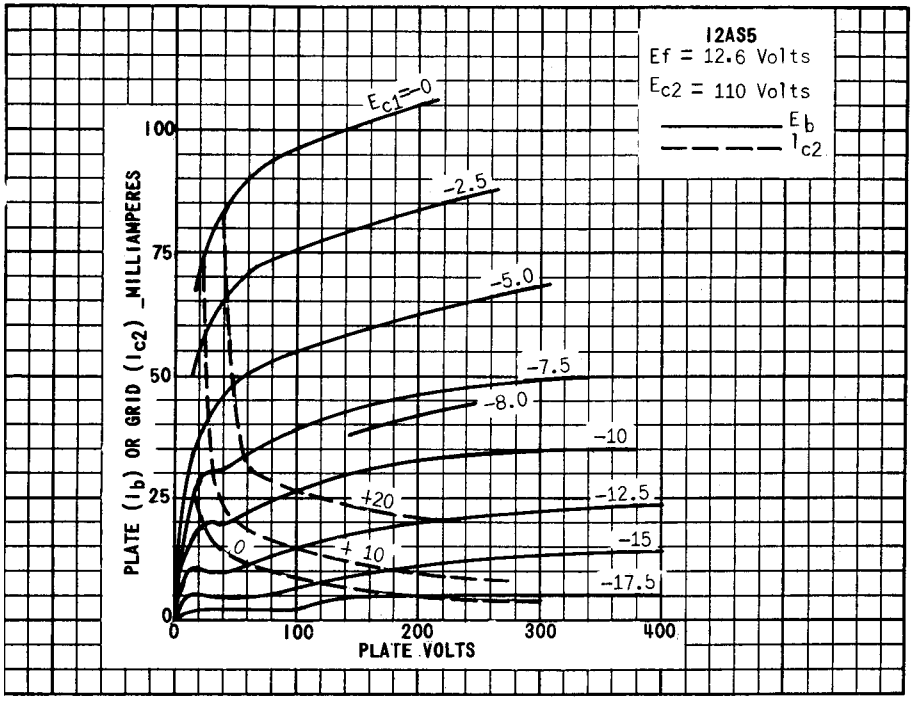
## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

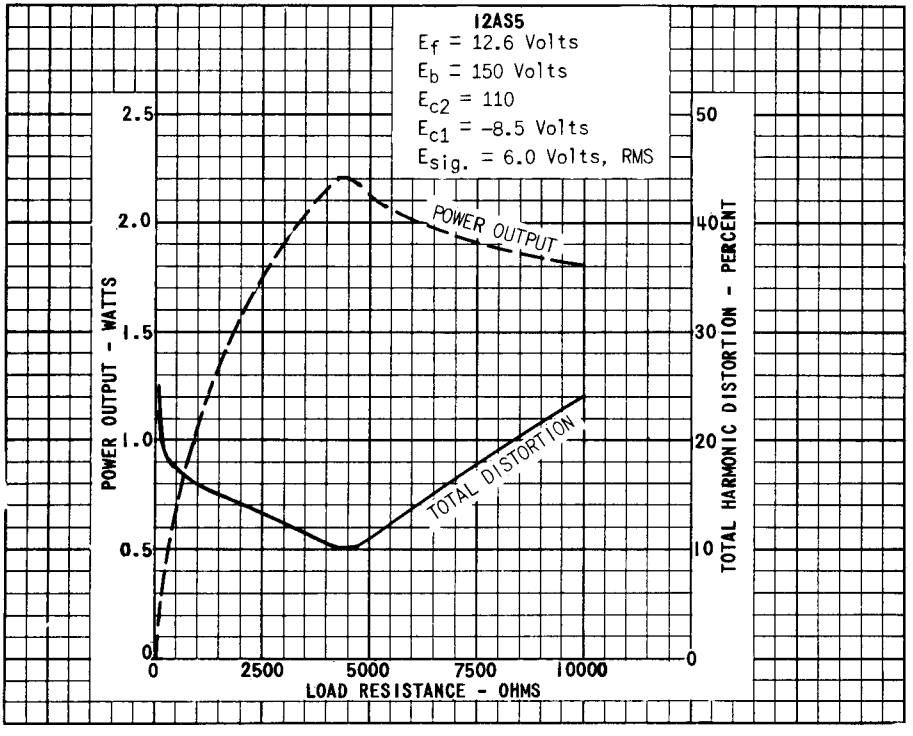
CLASS $A_1$ AMPLIFIER

| | | |
|---|---|---|
| HEATER VOLTAGE | 12.6 | VOLTS |
| HEATER CURRENT | 0.4 | VOLTS |
| PLATE VOLTAGE | 150 | VOLTS |
| GRID #2 VOLTAGE | 110 | VOLTS |
| GRID #1 VOLTAGE[A] | -8.5 | VOLTS |
| PEAK AF GRID #1 VOLTAGE | 8.5 | VOLTS |
| ZERO-SIGNAL PLATE CURRENT | 35 | MA. |
| MAX. SIGNAL PLATE CURRENT | 36 | MA. |
| ZERO-SIGNAL GRID #2 CURRENT (APPROX.) | 2 | MA. |
| MAX.-SIGNAL GRID #2 CURRENT (APPROX.) | 6.5 | MA. |
| TRANSCONDUCTANCE | 5600 | μMHOS |
| LOAD RESISTANCE | 4500 | OHMS |
| TOTAL HARMONIC DISTORTION | 10 | PERCENT |
| MAX.-SIGNAL POWER OUTPUT | 2.2 | WATTS |

[A]UNDER MAX. RATED CONDITIONS THE DC RESISTANCE OF THE GRID #1 CIRCUIT SHOULD NOT EXCEED 0.1 MEG. FOR FIXED BIAS OPERATION OR 0.5 MEG. FOR CATHODE BIAS OPERATION.




12AS5
Ef = 12.6 Volts
Ec2 = 110 Volts
Eb
Ic2
Ec1=0
-2.5
-5.0
-7.5
-8.0
-10
-12.5
-15
-17.5
+20
0
+10
PLATE (Ib) OR GRID (Ic2) _MILLIAMPERES
PLATE VOLTS
0
25
50
75
100
0
100
200
300
400


12AS5
Ef = 12.6 Volts
Eb = 150 Volts
Ec2 = 110
Ec1 = -8.5 Volts
Esig. = 6.0 Volts, RMS
POWER OUTPUT
TOTAL DISTORTION
POWER OUTPUT - WATTS
TOTAL HARMONIC DISTORTION - PERCENT
LOAD RESISTANCE - OHMS
0
0.5
1.0
1.5
2.0
2.5
10
20
30
40
50
2500
5000
7500
10000