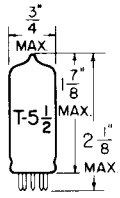
**TUNG-SOL**

# PENTODE

## MINIATURE TYPE



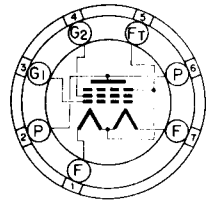

GLASS BULB

COATED FILAMENT

| SERIES FILAMENT | PARALLEL FILAMENT |
|---|---|
| $E_f$ APPLIED BETWEEN PINS 1 & 7 | $E_f$ APPLIED BETWEEN PIN 5 AND PINS 1 & 7 TIED TOGETHER |
| $E_{g1}$ REFERRED TO PIN 1 | $E_{g1}$ REFERRED TO -F |
| 2.8 VOLTS 50 MA. | 1.4 VOLTS 100 MA. |

DC

A SHUNTING RESISTOR MUST BE CONNECTED BETWEEN PINS 1 AND 5 FOR SERIES-FILAMENT OPERATION TO BY-PASS ANY CATHODE CURRENT IN EXCESS OF THE 6 MA. RATED MAXIMUM PER SECTION. AN ADDITIONAL SHUNTING RESISTOR MAY BE NECESSARY BETWEEN PINS 1 AND 7 IF OTHER TUBES USED IN SERIES-FILAMENT ARRANGEMENT CONTRIBUTE TO THE FILAMENT CURRENT OF THE 3Q4.




BOTTOM VIEW

MINIATURE BUTTON 7 PIN BASE

ANY MOUNTING POSITION

THE 3Q4 IS A FILAMENTARY TYPE POWER OUTPUT PENTODE IN THE MINIATURE CONSTRUCTION. IT IS CHARACTERIZED BY ECONOMY OF FILAMENT POWER AND HIGH POWER SENSITIVITY ADAPTING IT TO USE IN THE "3-WAY" OPERATED PORTABLE RECEIVERS.

## RATINGS

INTERPRETED ACCORDING TO DESIGN-MAXIMUM SYSTEM

| | SERIES FILAMENT | PARALLEL FILAMENT | |
|---|---|---|---|
| FILAMENT VOLTAGE | 2.8 | 1.4 | VOLTS |
| MAXIMUM PLATE VOLTAGE | 90 | 90 | VOLTS |
| MAXIMUM GRID #2 VOLTAGE | 90 | 90 | VOLTS |
| MAXIMUM CATHODE CURRENT | 6[A] | 6[A] ← | MA. |

[A] FOR EACH 1.4 VOLT FILAMENT SECTION.

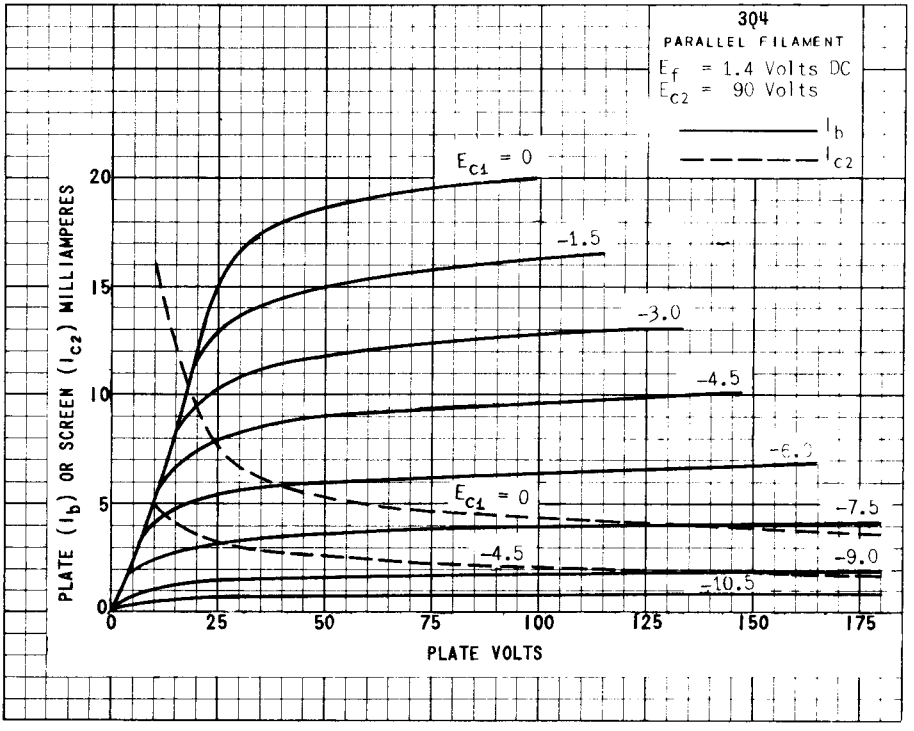
## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

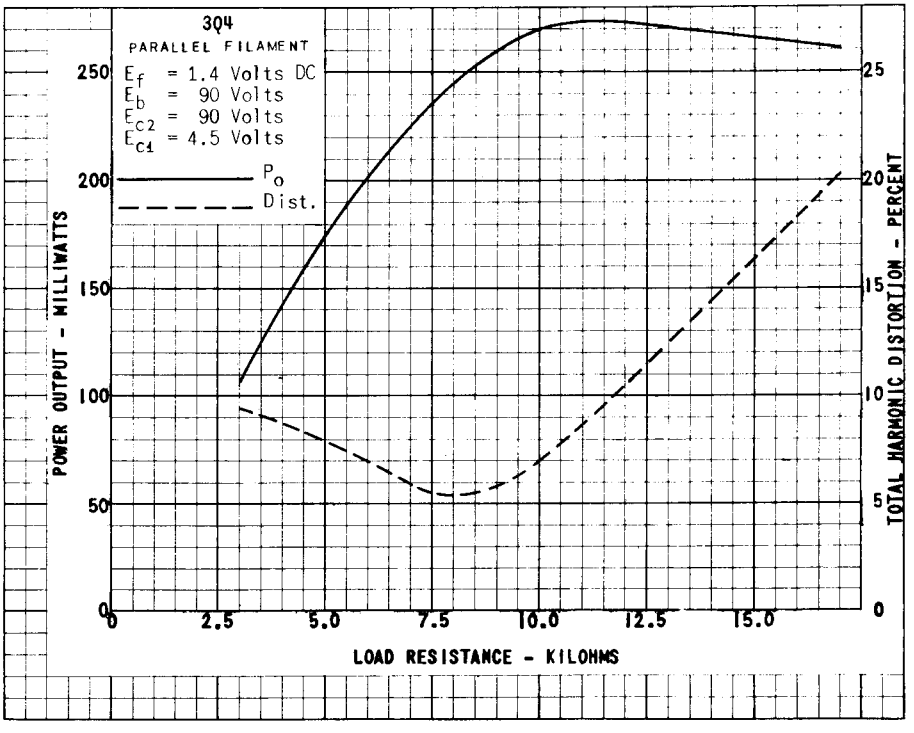
CLASS $A_1$ AMPLIFIER

| | | | | |
|---|---|---|---|---|
| FILAMENT VOLTAGE | 2.8 | 1.4 | 1.4 | VOLTS |
| FILAMENT CURRENT | 50 | 100 | 100 | MA. |
| PLATE VOLTAGE | 90 | 85 | 90 | VOLTS |
| GRID #2 VOLTAGE | 90 | 85 | 90 | VOLTS |
| GRID #1 VOLTAGE | -4.5 | -5 | -4.5 | VOLTS |
| PEAK AF SIGNAL VOLTAGE | 4.5 | 5 | 4.5 | VOLTS |
| ZERO-SIGNAL PLATE CURRENT | 7.7 | 6.9 | 9.5 | MA. |
| ZERO-SIGNAL GRID #2 CURRENT (NOMINAL) | 1.7 | 1.5 | 2.1 | MA. |
| PLATE RESISTANCE (APPROX.) | 0.12 | 0.12 | 0.1 | MEGOHM |
| TRANSCONDUCTANCE | 2 000 | 1 975 | 2 150 | μMHOS |
| LOAD RESISTANCE | 10 000 | 10 000 | 10 000 | OHMS |
| TOTAL HARMONIC DISTORTION | 7 | 10 | 7 | PERCENT |
| POWER OUTPUT | 240 | 250 | 270 | MW |

→ INDICATES A CHANGE.

# 3Q4


3Q4
PARALLEL FILAMENT
$E_f$ = 1.4 Volts DC
$E_{c2}$ = 90 Volts
$I_b$
$I_{c2}$
$E_{c1}$ = 0
-1.5
-3.0
-4.5
-6.0
$E_{c1}$ = 0
-7.5
-4.5
-9.0
-10.5
PLATE ($I_b$) OR SCREEN ($I_{c2}$) MILLIAMPERES
PLATE VOLTS
0
5
10
15
20
0
25
50
75
100
125
150
175


3Q4
PARALLEL FILAMENT
$E_f$ = 1.4 Volts DC
$E_b$ = 90 Volts
$E_{c2}$ = 90 Volts
$E_{c1}$ = 4.5 Volts
$P_o$
Dist.
POWER OUTPUT - MILLIWATTS
TOTAL HARMONIC DISTORTION - PERCENT
LOAD RESISTANCE - KILOHMS
0
50
100
150
200
250
0
5
10
15
20
25
0
2.5
5.0
7.5
10.0
12.5
15.0