



## ELECTRONIC TUBE REFERENCE

6945

Power - Beam Single (NOT sweep) (under 10W) electronic tube

CONSOLIDATED TECHNICAL  
DATA

**1 SECTION**  
CONSTRUCTION  
**BEAMPOWER**

Premium subminiature beam-power pentode designed specifically for guided-missile service, emphasizing stable performance under severe altitude and mechanical environmental conditions.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | 8             |
| NOMINAL HEATER      | 6.3 V / 350 mA    | PARALLEL HEATER      | — / —         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

| SECTION 1 Beam Power                                                                                               |                |
|--------------------------------------------------------------------------------------------------------------------|----------------|
| PLATE RESISTANCE                                                                                                   | 20000 $\Omega$ |
| TRANSCONDUCTANCE                                                                                                   | 0.0035 S       |
| AMPLIFICATION FACTOR                                                                                               | 5              |
| MAXIMUM PLATE VOLTAGE                                                                                              | 250 V          |
| MAXIMUM SCREEN VOLTAGE                                                                                             | 150 V          |
| MAXIMUM PLATE DISSIPATION                                                                                          | 3 W            |
| MAXIMUM SCREEN DISSIPATION                                                                                         | 0.33 W         |
| MAXIMUM CATHODE CURRENT                                                                                            | 40 mA          |
| <i>Published source ratings/characteristics promoted where applicable; identical repeated sections compressed.</i> |                |

THE 6945 IS A BEAM POWER PENTODE IN THE 8 PIN SUBMINIATURE CONSTRUCTION. IT IS DESIGN- ED SPECIFICALLY FOR GUI DED MISSILE SERVICE. THIS TYPE IS CHARACTERIZED BY

STABLE PERFORMANCE IN OPERATION AT HIGH ALTITUDES WHERE SEVERE CONDITIONS OF MECHANICAL



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1950 SYLVANIA

## Section 1 · Beam Power

| CHARACTERISTIC       |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Resistance     | 1500 ohm        | —                |
| Transconductance     | 3700 $\mu$ S    | —                |
| Amplification Factor | 5               | —                |

| OTHER                      |                 |                  |
|----------------------------|-----------------|------------------|
| PARAMETER                  | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum Plate Voltage      | 250 V           | —                |
| Maximum Plate Dissipation  | 3 W             | —                |
| Maximum Screen Dissipation | 0.33 W          | —                |
| Maximum Cathode Current    | 40 mA           | —                |



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1961 TUNG SOL

## Section 1 · Beam Power

| OTHER          |                 |                                            |
|----------------|-----------------|--------------------------------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE                           |
| Heater voltage | 6.3 V           | Nominal                                    |
| Heater current | 350 mA          | Nominal                                    |
| Plate voltage  | 100 V           | Published operating table; OperatingPoint1 |

| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE                           |
|----------------|-----------------|--------------------------------------------|
| Plate voltage  | 100 V           | Published operating table; OperatingPoint2 |
| Plate voltage  | 150 V           | Published operating table; OperatingPoint1 |
| Plate voltage  | 250 V           | Published operating table; OperatingPoint2 |
| Plate voltage  | 150 V           | Published operating table; OperatingPoint3 |
| Plate voltage  | 150 V           | Published operating table; OperatingPoint1 |
| Plate voltage  | 200 V           | Published operating table; OperatingPoint2 |
| Plate voltage  | 185 V           | Published operating table; OperatingPoint3 |
| Screen voltage | 150 V           | Published operating table; OperatingPoint1 |
| Screen voltage | 100 V           | Published operating table; OperatingPoint1 |
| Screen voltage | 100 V           | Published operating table; OperatingPoint2 |
| Screen voltage | 110 V           | Published operating table; OperatingPoint1 |
| Screen voltage | 125 V           | Published operating table; OperatingPoint2 |
| Screen voltage | 10 V            | Published operating table; OperatingPoint3 |

| CHARACTERISTIC   |                 |                                            |
|------------------|-----------------|--------------------------------------------|
| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE                           |
| Plate current    | 23.8 mA         | Published operating table; OperatingPoint1 |
| Plate current    | 14.2 mA         | Published operating table; OperatingPoint2 |
| Plate current    | 21.5 mA         | Published operating table; OperatingPoint3 |
| Plate current    | 25.3 mA         | Published operating table; OperatingPoint1 |
| Plate current    | 15.5 mA         | Published operating table; OperatingPoint2 |
| Plate current    | 20.5 mA         | Published operating table; OperatingPoint3 |
| Plate current    | 37.5 mA         | Published operating table; OperatingPoint1 |
| Plate current    | 270 mA          | Published operating table; OperatingPoint2 |
| Plate current    | 2.7 mA          | Published operating table; OperatingPoint3 |
| Plate resistance | 1500 ohm        | Published operating table; OperatingPoint1 |
| Plate resistance | 20000 ohm       | Published operating table; OperatingPoint2 |



SOURCE DATA APPENDIX

# 1966 Tung Sol Electronic Tubes 4 of 4

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1966 TUNG SOL ELECTRONIC TUBES 4 OF 4

### Section 1 · Beam Power

| OTHER                       |                 |                                 |
|-----------------------------|-----------------|---------------------------------|
| PARAMETER                   | PUBLISHED VALUE | CONDITION / NOTE                |
| Heater voltage              | 6.3 V           | Nominal                         |
| Heater current              | 350 mA          | Nominal                         |
| Maximum plate voltage       | 250 V           | Promoted published value        |
| Maximum screen voltage      | 150 V           | Promoted published value        |
| Maximum plate dissipation   | 3 W             | Promoted published value        |
| Maximum screen dissipation  | 0.33 W          | Promoted published value        |
| Maximum cathode current     | 40 mA           | Promoted published value        |
| DC PLATE VOLTAGE            | 250 V           | MAXIMUM RATINGS                 |
| PEAK-PLATE FORWARD VOLTAGE  | 360 V           | MAXIMUM RATINGS                 |
| GRID 2 VOLTAGE              | 150 V           | MAXIMUM RATINGS                 |
| PLATE DISSIPATION           | 3 W             | MAXIMUM RATINGS                 |
| GRID 2 DISSIPATION          | 0.33 W          | MAXIMUM RATINGS                 |
| CATHODE CURRENT             | 40 mA           | MAXIMUM RATINGS                 |
| GRID 1 CIRCUIT RESISTANCE   | 0.5 ohm         | MAXIMUM RATINGS                 |
| BULB TEMPERATURE            | 250 C           | MAXIMUM RATINGS                 |
| PLATE VOLTAGE               | 150 V           | CLASS A~ AMPLIFIER -SINGLE TUBE |
| GRID 2 VOLTAGE              | 110 V           | CLASS A~ AMPLIFIER -SINGLE TUBE |
| PEAK AF GRID 1 VOLTAGE      | 10.6 V          | CLASS A~ AMPLIFIER -SINGLE TUBE |
| ZERO -SIGNAL PLATE CURRENT  | 21.5 mA         | CLASS A~ AMPLIFIER -SINGLE TUBE |
| MAX, -SIGNAL PLATE CURRENT  | 20.5 mA         | CLASS A~ AMPLIFIER -SINGLE TUBE |
| ZERO -SIGNAL GRID 2 CURRENT | 0.8 mA          | CLASS A~ AMPLIFIER -SINGLE TUBE |
| - - - ~                     |                 |                                 |
| MAX. -SIGNAL GRID 2 CURRENT | 3.23 mA         | CLASS A~ AMPLIFIER -SINGLE TUBE |
| MAX, -SIGNAL POWER OUTPUT   | 1.22 W          | CLASS A~ AMPLIFIER -SINGLE TUBE |
| LOAD RESISTANCE             | 7000 ohm        | CLASS A~ AMPLIFIER -SINGLE TUBE |
|                             |                 |                                 |

| PARAMETER                             | PUBLISHED VALUE | CONDITION / NOTE          |
|---------------------------------------|-----------------|---------------------------|
| PLATE VOLTAGE                         | 185 V           | CLASS A~ CLASS ABZ        |
| GRID2 VOLTAGE                         | 110 V           | CLASS A~ CLASS ABZ        |
| GRID 1 VOLTAGE – – –                  | 15 V            | CLASS A~ CLASS ABZ        |
| PEAK AF GRID TO GRID VOLTAGE          | 31.2 V          | CLASS A~ CLASS ABZ        |
| ZERO–SIGNAL PLATE CURRENT             | 26.7 mA         | CLASS A~ CLASS ABZ        |
| MAX. –SIGNAL PLATE CURRENT            | 46 mA           | CLASS A~ CLASS ABZ        |
| ZERO –SIGNAL GRID 2 CURRENT           | 0.67 mA         | CLASS A~ CLASS ABZ        |
| MAX,–SIGNAL GRID 2 CURRENT            | 5.9 mA          | CLASS A~ CLASS ABZ        |
| MAX. SIGNAL POWER OUTPUT              | 4.76 W          | CLASS A~ CLASS ABZ        |
| LOAD RESISTANCE -PLATE TO PLATE       | 10000 ohm       | CLASS A~ CLASS ABZ        |
| ALTITUDE –ABSOLUTE MAXIMUM 80, 000 FT | 0 mA            | SPECIAL TESTS AND RATINGS |

| CHARACTERISTIC                   |                 |                                          |
|----------------------------------|-----------------|------------------------------------------|
| PARAMETER                        | PUBLISHED VALUE | CONDITION / NOTE                         |
| Plate resistance                 | 20000 ohm       | Promoted published value                 |
| Transconductance                 | 3500 uS         | Promoted published value                 |
| LIMITS OF APPLIED VOLTAGE 5.5 TO | 6.9 V           | AVERAGE CHARACTERISTICS 6.3 VOLTS 350 mA |
| DC PLATE VOLTAGE                 | 100 V           | AVERAGE CHARACTERISTICS                  |
| DC GRID 2 VOLTAGE                | 100 V           | AVERAGE CHARACTERISTICS                  |
| DC PLATE CURRENT                 | 25 mA           | AVERAGE CHARACTERISTICS                  |
| DC GRID 2 CURRENT                | 1.5 mA          | AVERAGE CHARACTERISTICS                  |
| AMPLIFICATION FACTOR 5.0         | 5 A             | AVERAGE CHARACTERISTICS                  |
| PLATE RESISTANCE - APPROX. 1, _` | 20000 ohm       | AVERAGE CHARACTERISTICS                  |
| DC GRID 1 VOLTAGE FOR 16 = 35 pA | -40 V           | AVERAGE CHARACTERISTICS                  |