



## ELECTRONIC TUBE REFERENCE

## F6920

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

**1 SECTION**  
CONSTRUCTION  
**TRIODE**

Forced-air-cooled high-voltage pulse triode designed specifically for hard-tube modulator applications.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | —             |
| NOMINAL HEATER      | 11 V / 285 A      | PARALLEL HEATER      | — / —         |
| HEATING             | Direct            | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                                                                           |         |
|---------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SECTION 1</b> Triode                                                                                                   |         |
| AMPLIFICATION FACTOR                                                                                                      | 41      |
| MAXIMUM PLATE VOLTAGE                                                                                                     | 40000 V |
| MAXIMUM PLATE DISSIPATION                                                                                                 | 10000 W |
| MAXIMUM GRID DISSIPATION                                                                                                  | 2000 W  |
| MAXIMUM CATHODE CURRENT                                                                                                   | 200 A   |
| <i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i> |         |

Three-electrode pulse triode designed for hard-tube modulator applications, with a forced-air-cooled anode and thoriated-tungsten filament.

## SOURCE OPERATING CONDITIONS

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## Section 1 · Triode

| OTHER                                                                |                 |                                                                         |
|----------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------|
| PARAMETER                                                            | PUBLISHED VALUE | CONDITION / NOTE                                                        |
| The F [1]                                                            | <b>6920</b>     | The F-6920 1is a three electrode tube designed for pulse applications   |
| The F [2]                                                            | <b>1</b>        | The F-6920 1is a three electrode tube designed for pulse applications   |
| as a hard tube modulator.,<br>The anode is capable of<br>dissipating | <b>10</b>       | as a hard tube modulator., The anode is capable of dissipating 10 kilo~ |
| Filament Voltage                                                     | <b>11 V</b>     | Filament Voltage 11 volts                                               |
| Filament Current                                                     | <b>285 A</b>    | Filament Current 285 amperes                                            |
| Filament Starting Current                                            | <b>1000 A</b>   | Filament Starting Current 1000 amperes                                  |
| Plate Cut                                                            | <b>0</b>        | Plate Cut-0Off                                                          |
| Grid-Plate                                                           | <b>34</b>       | Grid-Plate 34 puf                                                       |
| Plate-Filament                                                       | <b>2.6</b>      | Plate-Filament 2.6 uuf                                                  |
| Maximum Incoming Air<br>Temperature                                  | <b>50</b>       | Maximum Incoming Air Temperature 50°C                                   |
| Plate Dissipation [1]                                                | <b>10 W</b>     | Plate Dissipation 10 8 5 kilowatts                                      |
| Plate Dissipation [2]                                                | <b>8 W</b>      | Plate Dissipation 10 8 5 kilowatts                                      |
| Plate Dissipation [3]                                                | <b>5 W</b>      | Plate Dissipation 10 8 5 kilowatts                                      |
| Maxioum Glass Temperature                                            | <b>180</b>      | Maxioum Glass Temperature 180°C                                         |
| D-C Plate vVoltage [1]                                               | <b>35 V</b>     | D-C Plate vVoltage 35 35% max, kilovolts                                |
| D-C Plate vVoltage [2]                                               | <b>35 V</b>     | D-C Plate vVoltage 35 35% max, kilovolts                                |
| Peak Positive Plate Voltage<br>(Instantaneous)                       | <b>40 V</b>     | Peak Positive Plate Voltage (Instantaneous) 40 Lo max, kilovolts        |
| D-C Grid Voltage [1]                                                 | <b>-2 V</b>     | D-C Grid Voltage -2.0 -2,0% max, kilovolts                              |
| D-C Grid Voltage [2]                                                 | <b>-20 V</b>    | D-C Grid Voltage -2.0 -2,0% max, kilovolts                              |

| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                               |
|--------------------------------|-----------------|------------------------------------------------|
| Peak Positive Grid Voltage [1] | 5 V             | Peak Positive Grid Voltage 5 5% max, kilovolts |
| Peak Positive Grid Voltage [2] | 5 V             | Peak Positive Grid Voltage 5 5% max, kilovolts |
| Pulse Plate Current [1]        | 100 A           | Pulse Plate Current 100 150% max, amperes      |
| Pulse Plate Current [2]        | 150 A           | Pulse Plate Current 100 150% max, amperes      |
| Pulse Grid Current [1]         | 65 A            | Pulse Grid Current 65 100% mwax, amperes       |
| Pulse Grid Current [2]         | 100 A           | Pulse Grid Current 65 100% mwax, amperes       |
| Plate Dissipation [1]          | 10 W            | Plate Dissipation 10 10% max, kilowatts        |
| Plate Dissipation [2]          | 10 W            | Plate Dissipation 10 10% max, kilowatts        |
| Grid Dissipation               | 2 W             | Grid Dissipation 2 0% max, kilowatts           |
| Pulse length [1]               | 15              | Pulse length 15 15% max, iuseconds             |
| Pulse length [2]               | 15              | Pulse length 15 15% max, iuseconds             |
| Pulse Cathode Current [1]      | 140 A           | Pulse Cathode Current 140 200% max, amperes    |
| Pulse Cathode Current [2]      | 200 A           | Pulse Cathode Current 140 200% max, amperes    |
| D-C Plate Voltage [1]          | 18 V            | D-C Plate Voltage 18 30% kilovolts             |
| D-C Plate Voltage [2]          | 30 V            | D-C Plate Voltage 18 30% kilovolts             |
| Pulse Plate Current [1]        | 90 A            | Pulse Plate Current 90 150% amperes            |
| Pulse Plate Current [2]        | 150 A           | Pulse Plate Current 90 150% amperes            |
| D-C Grid Voltage [1]           | -1.2 V          | D-C Grid Voltage -1.2 -1,0% kilovolts          |
| D-C Grid Voltage [2]           | -10 V           | D-C Grid Voltage -1.2 -1,0% kilovolts          |
| Pulse Grid Current [1]         | 25 A            | Pulse Grid Current 25 50% amperes              |
| Pulse Grid Current [2]         | 50 A            | Pulse Grid Current 25 50% amperes              |
| Pulse Positive Grid Voltage    | 2.8 V           | Pulse Positive Grid Voltage 2.8 by kilovolts   |
| Pulse Length                   | 1               | Pulse Length 1 useconds                        |
| Plate Output Voltage [1]       | 16.5 V          | Plate Output Voltage 16.5 27.5% kilovolts      |
| Plate Output Voltage [2]       | 27.5 V          | Plate Output Voltage 16.5 27.5% kilovolts      |
| Filament Voltage [1]           | 11.5 V          | Filament Voltage 11.5 11.9 12.3 volts          |
| Filament Voltage [2]           | 11.9 V          | Filament Voltage 11.5 11.9 12.3 volts          |
| Filament Voltage [3]           | 12.3 V          | Filament Voltage 11.5 11.9 12.3 volts          |
| Filament Emission Ep [1]       | 11.6            | Filament Emission Ep 11.6 v. 170 amperes       |
| Filament Emission Ep [2]       | 170             | Filament Emission Ep 11.6 v. 170 amperes       |
| F                              | 6920            | F-6920 PULSE TRIODE                            |



## SOURCE OPERATING CONDITIONS

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# 1962 ITT Industrial and Transmitting Tubes

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

## 1962 ITT INDUSTRIAL AND TRANSMITTING TUBES

## Section 1 · Triode

| CHARACTERISTICS          |                 |                  |
|--------------------------|-----------------|------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE |
| GridPlateCapacitance     | 34 pF           | —                |
| GridFilamentCapacitance  | 75 pF           | —                |
| PlateFilamentCapacitance | 2.6 pF          | —                |
| FilamentStartingCurrent  | 1000 A          | —                |

| OTHER                           |                 |                  |
|---------------------------------|-----------------|------------------|
| PARAMETER                       | PUBLISHED VALUE | CONDITION / NOTE |
| MaximumPeakPositivePlateVoltage | 40 kV           | Pulse            |
| Maximum DC Grid Voltage         | -2 kV           | Pulse            |
| MaximumPeakPositiveGridVoltage  | 5 kV            | Pulse            |
| MaximumPulsePlateCurrent        | 150 A           | Pulse            |
| MaximumPulseGridCurrent         | 100 A           | Pulse            |
| MaximumDutyFactor               | 0.002           | Pulse            |
| MaximumPulseLength              | 15 us           | Pulse            |

## TUBE TINKER

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