



## ELECTRONIC TUBE REFERENCE

## 6F5P

Voltage - Triode Pentode electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Russian 6F5P miniature triode-pentode designed specifically for television vertical-deflection/sweep circuits, combining a control triode and power-capable pentode in a nine-pin envelope.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | 9             |
| NOMINAL HEATER      | 6.3 V / 925 mA    | PARALLEL HEATER      | — / —         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Dissimilar    |

## SECTION RATINGS

## SECTION1 Triode

|                  |         |
|------------------|---------|
| TRANSCONDUCTANCE | 0.007 S |
|------------------|---------|

Russian 6F5P (6Ф5П) TRI ODE section in triode-pentode for television vertical/frame deflection circuits (NOT horizontal sweep). Original bilingual Mashpriborintorg specification states triode typical plate supply ~100 V, cathode self-bias resistor ~160  $\Omega$ , plate current about  $5.2 \pm 1.8$  mA and transconductance 7 mA/V (0.007 S). Published section capacitances include grid-cathode and grid-plate couplings. Heater shared with pentode 6.3 V 0.925 A, nine-pin miniature B9A; rugged for ambient -60 to +70°C and vibration, guaranteed service 3000 hours. Pulsed/vertical-sweep limits in source must not be treated as unrestricted DC maxima. Separate physical triode row retained.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>SECTION2 Pentode</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |
| <b>TRANSCONDUCTANCE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.0075 S |
| <b>MAXIMUM SCREEN VOLTAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 250 V    |
| <i>Russian 6F5P (6Φ5Π) PENTODE section for television VERTICAL DEFLECTION/frame output, with companion oscillator/control triode. Manufacturer bilingual datasheet typical pentode supply/anode about 185 V, screen ~185 V, cathode self-bias resistor ~340 Ω, plate current approximately 27 mA and gm 7.5 mA/V (0.0075 S) under specified test conditions. Published 250 V screen and other high pulse/sweep ratings are duty/connection dependent; existing max_screen_voltage 250 V retained as approved and no unconditional max plate or dissipation values promoted. Nine-pin 6.3 V 925 mA tube designed for 3000-hour service. Separate physical pentode row retained; vertical sweep is not horizontal-sweep service.</i> |          |

Tpuon-nearox 6P5SI1 npennasnauen aas pabo- The 6@5I1 triode-pentode is designed for ope- Tpuoa-nenron 6P5I1 BHIMyckaeTcss B MHHHA- The 6@5I1 triode-pentodes are miniature devi- Tpuon-nenron 6P5HI1 ycroiiuuB K BO3LEACTBHIO The 6@5I1 triode-pentodes are resistant to am-

## SOURCE OPERATING CONDITIONS

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# 195X Russian

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

## 195X RUSSIAN

## Section 1 · Triode

| OTHER        |                 |                                                                                                                                                           |
|--------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| PARAMETER    | PUBLISHED VALUE | CONDITION / NOTE                                                                                                                                          |
| Service life | 3000 h          | HbIX MHOTOKpaTHBIX 10 12 g. Hau6oabmmit Bec 20 e Maximum weight: 20 gr.<br>[apantupoBaHdas poJaroseydocts 3000 wacos.<br>Service life guarantee: 3000 hr. |
| Service life | 3000 h          | Hau6oabmmit Bec 20 e Maximum weight: 20 gr.<br>[apantupoBaHdas poJaroseydocts 3000 wacos.<br>Service life guarantee: 3000 hr.                             |
| Service life | 3000 h          | [apantupoBaHdas poJaroseydocts 3000 wacos.<br>Service life guarantee: 3000 hr.                                                                            |

## 195X RUSSIAN

## Section 2 · Pentode

| CHARACTERISTICS           |                 |                                                                                                                                                                       |
|---------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE                                                                                                                                                      |
| Published electrical data | 1               | 1) lasi aBTOMATHYECKOTO CMEIleHH                                                                                                                                      |
| Published electrical data | 4; =200; -10    | ) IIPH 4 =200V, Uyp=−10 V.                                                                                                                                            |
| Published electrical data | 2               | 2) Ilpm                                                                                                                                                               |
| Published electrical data | =50; 170; =0    | %) Ha xouene xapakrepuctuxku mpu U, =50V, Ug2= 170 V. u Uy =0.                                                                                                        |
| Published electrical data | =50; 170; =0    | On the characteristic curve bend at U, =50V, Ug2= 170 V and Ugl =0,                                                                                                   |
| Plate current             | 4 mA            | On the characteristic curve bend at U, =50V, Ug2= 170 V and Ugl =0, 4) I, — TOK aHOJa Ha KOJIeHe XapaKTePUCTHKH. I, — plate current on the characteristic curve bend. |
| Plate current             | 4 mA            | 4) I, — TOK aHOJa Ha KOJIeHe XapaKTePUCTHKH. I, — plate current on the characteristic curve bend.                                                                     |
| Published electrical data | 3.5; 8.8        | CgIkT 3,5 pF Cakp 8,8 pF                                                                                                                                              |

| PARAMETER                 | PUBLISHED VALUE     | CONDITION / NOTE                                       |
|---------------------------|---------------------|--------------------------------------------------------|
| Published electrical data | <b>0.25; &lt;07</b> | Cor 0,25 pF Corap <07 pF                               |
| Published electrical data | <b>&lt;18; 0.03</b> | Cgrar <18 pF Capgr < 0,03 pF                           |
| Published electrical data | <b>11.7</b>         | Cglkp 11,7 pF                                          |
| Published electrical data | <b>3</b>            | NPEAEJBHO HONYCTUMBIE<br>3KCNJIVYATAULUOHHBLIE NAHHBIE |

| OTHER                     |                      |                                                        |
|---------------------------|----------------------|--------------------------------------------------------|
| PARAMETER                 | PUBLISHED VALUE      | CONDITION / NOTE                                       |
| Published electrical data | <b>300; 75</b>       | Uap 300V 75 mA                                         |
| Published electrical data | <b>550; 100</b>      | Uap ) 550 V 100 V                                      |
| Published electrical data | <b>2; 2; 3.3</b>     | Uap imp 2y 2kV 3,3 M@                                  |
| Published electrical data | <b>250; 1</b>        | Ugo 250 V 1 MQ                                         |
| Published electrical data | <b>1; 550; 2.2</b>   | Ugse 1 550 V 2,2 MQ                                    |
| Published electrical data | <b>9; 6; 220</b>     | P ap 9w 6asnona 220° C                                 |
| Published electrical data | <b>2</b>             | 2) B cxeMe KaApOBOH DPAasBepTKH.                       |
| Published electrical data | <b>3</b>             | 3) Ilpu aBTOMATHYECKOM CMEIleHHH.                      |
| Published electrical data | <b>4</b>             | 4) Ilpy HUKCHPOBAHHOM CMEIleHHH,                       |
| Published electrical data | <b>78.5</b>          | 78,5 max                                               |
| Published electrical data | <b>71.5</b>          | 71,5 max                                               |
| Published electrical data | <b>6</b>             | Tpuon-nenron 6 m5 l I                                  |
| Published electrical data | <b>4</b>             | / y4uD / AW WAV S 4V4V,                                |
| Published electrical data | <b>250</b>           | 250 Ugr.V                                              |
| Published electrical data | <b>4; -3; -2; -1</b> | Ugr- V-4 -3 -2 -1 g f                                  |
| Published electrical data | <b>1; 1</b>          | Lop=1 (Uar) Lp=1 (UgT)                                 |
| Published electrical data | <b>1</b>             | S, Ry=1(Ugr)                                           |
| Published electrical data | <b>6; 5</b>          | 6φ5 l I Tpuoa-neuton                                   |
| Published electrical data | <b>2</b>             | ogon [ Gr 2 N2 lg7 ATy -                               |
| Published electrical data | <b>0; 200</b>        | 0T i 200 ail Ams= '                                    |
| Published electrical data | <b>50; 15; 24</b>    | 50 “\~';f/ = — _gy 15V 24 \ \ ~ g P SOO<br>l/iz;;]?”/V |
| Published electrical data | <b>200; 250; 0</b>   | 200 250 Ugp¥ 0                                         |
| Published electrical data | <b>170; =-1</b>      | — — —Igp Ugpp=170V R Uy =—1V                           |

## SOURCE OPERATING CONDITIONS

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# 1970 Russian Tubes Mashpriborintorg

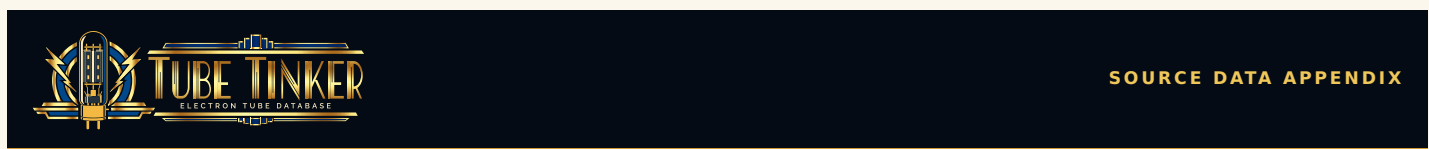
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## 1970 RUSSIAN TUBES MASHPRIBORINTORG

## Section 1 · Triode

| CHARACTERISTIC                        |                 |                                                                                               |
|---------------------------------------|-----------------|-----------------------------------------------------------------------------------------------|
| PARAMETER                             | PUBLISHED VALUE | CONDITION / NOTE                                                                              |
| U                                     | 63 V            | Published datasheet line: U, 63V                                                              |
| I                                     | 925+65 mA       | Published datasheet line: I, 925+65 mA                                                        |
| E                                     | 100 V           | Published datasheet line: E, 100 V [, <20 pA                                                  |
| R D)                                  | 160 Q           | Published datasheet line: R, D) 160Q S 7 mA/V                                                 |
| I                                     | 5,2+1,8 mA      | Published datasheet line: I, 5,2+1,8 mA w 7020                                                |
| E                                     | 18 V            | Published datasheet line: E, 18V I, 2778 mA                                                   |
| Eg2                                   | 185 V           | Published datasheet line: Eg2 185 V Lo ) <0251,Y                                              |
| R                                     | 1 Q             | Published datasheet line: R, 1) 340Q S 7,5 mA/V                                               |
| Ia                                    | 419 mA          | Published datasheet line: Ia 419 mA R, 23                                                     |
| I                                     | 3 mA            | Published datasheet line: I,3) >150 mA                                                        |
| ) IIPH                                | 4 V             | Published datasheet line: ) IIPH 4 =200V, Uyp= −10 V.                                         |
| ) Ha xouene xapakrepuctuxku mpu U     | =50 V           | Published datasheet line: %) Ha xouene xapakrepuctuxku mpu U, =50V, Ug2= 170 V. u Uy =0.      |
| On the characteristic curve bend at U | =50 V           | Published datasheet line: On the characteristic curve bend at U, =50V, Ug2= 170 V and Ugl =0, |
| CglkT                                 | 3,5 pF          | Published datasheet line: CglkT 3,5 pF Cakp 8,8 pF                                            |
| Cor                                   | 0,25 pF         | Published datasheet line: Cor 0,25 pF Corap <07 pF                                            |
| Cgrar                                 | <18 pF          | Published datasheet line: Cgrar <18 pF Capgr < 0,03 pF                                        |
| Cglkp                                 | 11,7 pF         | Published datasheet line: Cglkp 11,7 pF                                                       |
| Uy                                    | 7 V             | Published datasheet line: Uy, 7V                                                              |

| OTHER             |                 |                                                           |
|-------------------|-----------------|-----------------------------------------------------------|
| PARAMETER         | PUBLISHED VALUE | CONDITION / NOTE                                          |
| U <sub>y</sub>    | 7 V             | Published datasheet line: U <sub>y</sub> , 7V 57V 2W      |
| U                 | 250 V           | Published datasheet line: U, 250 V 15 mA                  |
| U <sub>h</sub>    | 350 V           | Published datasheet line: U, h 350 V 200 mA               |
| U <sub>ap</sub>   | 300 V           | Published datasheet line: U <sub>ap</sub> 300V 75 mA      |
| U <sub>ap</sub> ) | 550 V           | Published datasheet line: U <sub>ap</sub> ) 550 V 100 V   |
| U <sub>go</sub>   | 250 V           | Published datasheet line: U <sub>go</sub> 250 V 1 MQ      |
| U <sub>gse</sub>  | 1 V             | Published datasheet line: U <sub>gse</sub> 1 550 V 2,2 MQ |
| P . r             | 5 W             | Published datasheet line: P r 05 W 1 MQ                   |
| P ap              | 9 w             | Published datasheet line: P ap 9w 6asnona 220° C          |



#### SOURCE OPERATING CONDITIONS

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# 1981 Russian Tubes Katsnelson and Larionov

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

#### 1981 RUSSIAN TUBES KATSNELSON AND LARIONOV

### Section 1 · Triode

| CHARACTERISTICS                |                 |                                                                 |
|--------------------------------|-----------------|-----------------------------------------------------------------|
| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                                                |
| Published electrical parameter | 185 V           | при (, =6,3 В, Изе= 100 В, Оан= 185 В, Исэп= 185 В,             |
| Published electrical parameter | 160 OM          | [гк.т=160 Ом, Кн,п=340 Эм                                       |
| Published electrical parameter | >0 V            | * При 0 >0 В.                                                   |
| Published electrical parameter | 50 V            | ** При 0 д=50 В, О а7                                           |
| Published electrical parameter | 1 V             | 170 В, О „р =—1 В.                                              |
| Published electrical parameter | 2 %             | * Продолжительность импульса не должна превышать 2% периода (не |

| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                                                  |
|--------------------------------|-----------------|-------------------------------------------------------------------|
| Published electrical parameter | 4 %             | *** Продолжительность импульса не должна превышать 4% периода (не |
| Published electrical parameter | 8 A             | 8 А ми                                                            |
| Published electrical parameter | 58 V            | 64574 -8,5-8 -2,9-д -15-7 -0 0 058 В 28 2076-72 -6 -4 0           |
| Published electrical parameter | 150 V           | при (,=6,3 В, И,=150 В, В,=68 кОм, (с:=150 В                      |
| Published electrical parameter | <20 µA          | Ток утечки между катодом и подогревателем НЕИ <20 мкА             |
| Reverse current                | <0.2 µA         | Обратный ток сетки . . . . . В . . . <0,2 мкА                     |
| Resistance                     | 1 kΩ            | Входное сопротивление на частоте 100 МГц 1 кОм                    |
| Published electrical parameter | 130 Ω           | шумов . . . ЕНЕ й 130 Ом                                          |
| Published electrical parameter | 4.2 пф          | ВХОДНАЯ . г а в о а в о в в а в а 4,2 пф                          |
| Screen current                 | <2.2 mA         | Ток 2-й сетки . . в .. СОВОГ О 3 * <2,2 мА                        |
| Transconductance               | 4 mA/V          | Крутизна — характеристики . . . э * 19_4 мА/В                     |
| Published electrical parameter | 250 Ω           | шумов , .. 250 Ом                                                 |
| Published electrical parameter | <0.02 pF        | проходная & в е э о <<0,02 пФ                                     |
| Service life                   | >2000 h         | Наработка , в в о с е 2>2000 ч                                    |

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