

ELECTRONIC TUBE REFERENCE

6F6

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Pentode power amplifier designed for receiver output stages, with documented single-ended Class-A and push-pull Class-A/AB operation. A classic non-beam audio power-output tube.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7S	BASE PINS	8
NOMINAL HEATER	6.3 V / 700 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7S - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – IS	A	IS – Internal Screen	CONNECTED
PIN2 – H	–	H – Heater	CONNECTED
PIN3 – P	A	P – Plate (Anode)	CONNECTED
PIN4 – G2	A	G2 – Screen Grid	CONNECTED
PIN5 – G1	A	G1 – Control Grid	CONNECTED
PIN7 – H	–	H – Heater	CONNECTED
PIN8 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN8 – K	A	K – Cathode	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	80000 Ω
TRANSCONDUCTANCE	0.0025 S
AMPLIFICATION FACTOR	200
MAXIMUM PLATE VOLTAGE	375 V
MAXIMUM SCREEN VOLTAGE	285 V
MAXIMUM PLATE DISSIPATION	11 W
MAXIMUM SCREEN DISSIPATION	3.75 W
<i>Audio output pentode; triode-connected ratings are retained as parameters.</i>	

The 6F6 is a pentode power amplifier intended for receiver power-output stages, with published single-ended Class A and push-pull Class A/AB operating conditions.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1935 RCA All Metal Radio Tubes

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

1935 RCA ALL METAL RADIO TUBES

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	315 V	ClassA;PentodeConnection
Screen voltage	315 V	ClassA;PentodeConnection
Grid voltage	-22 V	ClassA;PentodeConnection
Plate current	42 mA	ClassA;PentodeConnection
Screen current	8 mA	ClassA;PentodeConnection
Load resistance	7000 Ohm	ClassA;PentodeConnection
Power output	5 W	ClassA;PentodeConnection
Total harmonic distortion	7 %	ClassA;PentodeConnection
Power output	19 W	ClassAB;PushPull;TwoTubes;PentodeConnection
Plate voltage	375 V	ClassAB;PushPull;PentodeConnection
Screen voltage	250 V	ClassAB;PushPull;PentodeConnection
Power output	18 W	ClassAB;PushPull;TwoTubes;TriodeConnection



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1937 Raytheon Radio Receiving Tubes

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

1937 RAYTHEON RADIO RECEIVING TUBES

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	315 V	Published table
Plate Voltage	250 V	ClassA; Column1
Plate Voltage	316 V	ClassA; Column2
Plate Voltage	250 V	ClassA; Column3
§ Screen Voltage	250 V	ClassA; Column1
§ Screen Voltage	315 V	ClassA; Column2
Plate Voltage	375 V	ClassA; Column1
Plate Voltage	375 V	ClassA; Column2
Plate Voltage	350 V	ClassA; Column3
Plate Voltage	350 V	ClassA; Column4
Screen Voltage	250 V	ClassA; Column1
Screen Voltage	250 V	ClassA; Column2
No=Signal Plate Current	34 mA	ClassA; Column1
No=Signal Plate Current	54 mA	ClassA; Column2
No=Signal Plate Current	45 mA	ClassA; Column3
No=Signal Plate Current	50 mA	ClassA; Column4
No-Signal Screen Current	5 mA	ClassA; Column1
No-Signal Screen Current	8 mA	ClassA; Column2
Load Resistance(P to P)	10000 ohm	ClassA; Column1
Load Resistance(P to P)	10000 ohm	ClassA; Column2
Load Resistance(P to P)	6000 ohm	ClassA; Column3



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1940 RCA

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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	6.3 V	Published nominal value
Heater current	700 mA	Published nominal value
Transconductance	2650 μ S	Published operating characteristic
Amplification factor	200	Published operating characteristic

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Audio power output	4.5 W	SingleTube; ClassA; 250 V plate
Load resistance	7000 ohm	SingleTube; ClassA



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1950 Sylvania

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

1950 SYLVANIA

Section 1 · Pentode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension chauffage CA ou CC ... 6,3 6,3 volts	6.3 V	Tension chauffage CA ou CC ... 6,3 6,3 volts
Courant chauffage e e e e 0,7 0,7 ampère	700 mA	Courant chauffage e e e e 0,7 0,7 ampère
Tension chauffage CA ou CC, 6,3 6,3 volts	6.3 V	Tension chauffage CA ou CC, 6,3 6,3 volts
Courant chauffage e s 0,7 0,7 ampère	700 mA	Courant chauffage e s 0,7 0,7 ampère
Tension -chauffage 6,3 6,3 6,3 volts	6.3 V	Tension -chauffage 6,3 6,3 6,3 volts
Tension plaque 250 285 283 volts	283 V	Tension plaque 250 285 283 volts
Tension grille -16,5 - 20 -20 volts	20 V	Tension grille -16,5 -20 -20 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Courant plaque (signal zéro) 34 38- 31 ma.	31 mA	Courant plaque (signal zéro) 34 38- 31 ma.
Résistance interne 80,000* 78,000* 2,600 ohms	2.6 ohms	Résistance interne 80,000* 78,000* 2,600 ohms
Conductance mutuelle v e 2,500 2,550 2,600 ymhos	2.6 ymhos	Conductance mutuelle v e 2,500 2,550 2,600 ymhos
Puissance modulée 3,2 4,8 0,85 watts	0.85 W	Puissance modulée 3,2 4,8 0,85 watts
Tension chauffage 6,3 6,3 6,3 volts	6.3 V	Tension chauffage 6,3 6,3 6,3 volts
Tension plaque 315 375 350 volts	350 V	Tension plaque 315 375 350 volts
Tension grille -24 -26 -38 volts	38 V	Tension grille -24 -26 -38 volts
Courant plaque (signal zéro) ... 62 34 48 ma.	48 mA	Courant plaque (signal zéro) ... 62 34 48 ma.
Tension plaque 250 volts	250 V	Tension plaque 250 volts
Tension grille -20 volts	20 V	Tension grille -20 volts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension plaque 375 350 volts max.	350 V	Tension plaque 375 350 volts max.
Dissipation plaque 11 10 watts max.	10 W	Dissipation plaque 11 10 watts max.
Courant plaque (signal max.) ... 80 82 92 ma.	92 mA	Courant plaque (signal max.) ... 80 82 92 ma.



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1953 RFT Rundfunk Technik

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

1953 RFT RUNDFUNK TECHNIK

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	6.3 V	Nominal
HeaterCurrentNominal	700 mA	Nominal
Maximum Plate Voltage	410 V	—
Maximum Screen Voltage	315 V	—
Maximum Plate Dissipation	12 W	—
Maximum Screen Dissipation	2 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	3000 μ S	Typical
Plate Resistance	78000 ohm	Typical



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195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	285 V	ClassA; SingleTube
Screen voltage	285 V	ClassA; SingleTube
Control-grid bias magnitude	20 V	ClassA; SingleTube
Plate current	38 mA	ClassA; SingleTube
Screen current	7 mA	ClassA; SingleTube
Plate resistance	78000 ohm	ClassA; SingleTube
Transconductance	2550 μ S	ClassA; SingleTube
Load resistance	7000 ohm	ClassA; SingleTube

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power output	4.8 W	ClassA; SingleTube
Plate voltage	250 V	ClassA; SingleTube
Screen voltage	250 V	ClassA; SingleTube
Control-grid bias magnitude	16.5 V	ClassA; SingleTube
Plate current	34 mA	ClassA; SingleTube
Screen current	6.5 mA	ClassA; SingleTube
Plate resistance	80000 ohm	ClassA; SingleTube
Transconductance	2500 uS	ClassA; SingleTube
Load resistance	7000 ohm	ClassA; SingleTube
Power output	3.2 W	ClassA; SingleTube


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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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	3.2 W	ClassA;PentodeConnection
Power Output	18.5 W	ClassAB;PushPull;PentodeConnection
Power Output	13 W	ClassAB;PushPull;TriodeConnection


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1966 Tung Sol Electronic Tubes 2 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate_voltage	250 V	ClassA,OneTube
Screen_voltage	250 V	ClassA,OneTube
Control_grid_voltage	-16.5 V	ClassA,OneTube
Load_resistance	7000 ohm	ClassA,OneTube
Power_output	3.2 W	ClassA,OneTube
Total_harmonic_distortion	8 percent	ClassA,OneTube
Plate_voltage	375 V	PushPull,TwoTubes,ClassAB
Screen_voltage	250 V	PushPull,TwoTubes,ClassAB
Power_output	18.5 W	PushPull,TwoTubes,ClassAB
Effective_load_resistance_plate_to_plate	10000 ohm	PushPull,TwoTubes,ClassAB

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Zero_signal_plate_current	34 mA	ClassA,OneTube
Zero_signal_screen_current	6.5 mA	ClassA,OneTube