



ELECTRONIC TUBE REFERENCE

F6696

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

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Massive water-cooled ITT transmitting triode for high-power RF systems. Approximately 60 kW plate dissipation and 16 kV capability support very large professional transmitter installations.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	13 V / 205 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	16000 V
MAXIMUM PLATE DISSIPATION	60000 W
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>	

Three-electrode high-power tube with rugged coaxial stem structure for RF amplifiers, oscillators and Class B modulators; F-6696 uses a 60 kW water-cooled anode.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

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

1962 ITT

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The F [1]	6696 kW	The F-6696 has a water cooled, heavy wall anode capable of 60 kw dissipa-
The F [2]	60 kW	The F-6696 has a water cooled, heavy wall anode capable of 60 kw dissipa-
tion. The F	6697	tion. The F-6697 has a forced-air cooled copper anode-radiator assembly
of brazed construction capable of	35 kW	of brazed construction capable of 35 kw dissipation,
Filament Voltage	13 V	Filament Voltage 13 volts
Filament Current	205 A	Filament Current 205 amperes
Filament Starting Current	800 A	Filament Starting Current 800 amperes
Filament Cold Resistance	73	Filament Cold Resistance 0073 ohms
Grid-Plate	55	Grid-Plate 55 puf
Grid-Filament	76	Grid-Filament 76 uuf
Plate-Filament	2.7	Plate-Filament 2.7 puf
Mex. Glass & Seal Temperature *	180	Mex. Glass & Seal Temperature * 180° ¢
Plate Dissipation [1]	60 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
Plate Dissipation [2]	45 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
Plate Dissipation [3]	30 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
Plate Dissipation [4]	35 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
Plate Dissipation [5]	25 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
Plate Dissipation [6]	15 W	Plate Dissipation 60 45 30 35 25 15 kilowatts
the temperature to [1]	180	the temperature to 180°C max.; up to 150 cfm air flow

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
the temperature to [2]	150	the temperature to 180°C max.; up to 150 cfm air flow
*¥% Maximum incoming air temperature of	50	*¥% Maximum incoming air temperature of 50°C at sea level.
POWER	-2 W	POWER -2 -
D-C Plate Voltage	16000 V	D-C Plate Voltage 16,000 volts
Max. Signal D-C Plate Current [1]	2 A	Max. Signal D-C Plate Current 2 11 amperes
Max. Signal D-C Plate Current [2]	11 A	Max. Signal D-C Plate Current 2 11 amperes
Max. Signal Plate Input	2	Max. Signal Plate Input 2
D-C Plate Voltage [1]	10000 V	D-C Plate Voltage 10,000 12,000 volts
D-C Plate Voltage [2]	12000 V	D-C Plate Voltage 10,000 12,000 volts
D-C Grid Voltage [1]	-450 V	D-C Grid Voltage -450 -600 volts
D-C Grid Voltage [2]	-600 V	D-C Grid Voltage -450 -600 volts
Peak A-F Grid-to~Grid Voltage [1]	1750 V	Peak A-F Grid-to~Grid Voltage 1,750 2,120 volts
Peak A-F Grid-to~Grid Voltage [2]	2120 V	Peak A-F Grid-to~Grid Voltage 1,750 2,120 volts
Peak A-F Plate-to-Plate Voltage [1]	16000 V	Peak A-F Plate-to-Plate Voltage 16,000 19,200 volts
Peak A-F Plate-to-Plate Voltage [2]	19200 V	Peak A-F Plate-to-Plate Voltage 16,000 19,200 volts
Zero Signal D-C Plate Current [1]	3 A	Zero Signal D-C Plate Current 3.0 2.0 amperes
Zero Signal D-C Plate Current [2]	2 A	Zero Signal D-C Plate Current 3.0 2.0 amperes
Max. Signal D-C Plate Current [1]	17.4 A	Max. Signal D-C Plate Current 17.4 20.0 amperes
Max. Signal D-C Plate Current [2]	20 A	Max. Signal D-C Plate Current 17.4 20.0 amperes
Effective Load Resistance, Plate-to-Plate [1]	1170	Effective Load Resistance, Plate-to-Plate 1,170 1,230 ohms
Effective Load Resistance, Plate-to-Plate [2]	1230	Effective Load Resistance, Plate-to-Plate 1,170 1,230 ohms
Max. Signal Driving Power, approx [1]	550 W	Max. Signal Driving Power, approx. 550 600 watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max. Signal Driving Power, approx [2]	600 W	Max. Signal Driving Power, approx. 550 600 watts
Max, Signal Power Output, approx [1]	110 W	Max, Signal Power Output, approx. 110 152 kilowatts
Max, Signal Power Output, approx [2]	152 W	Max, Signal Power Output, approx. 110 152 kilowatts
Published value	2	2 Averaged over any audio frequency
D~C Plate Current	9 A	D~C Plate Current 9.0 amperes
D-C Plate Voltage [1]	12000 V	D-C Plate Voltage 12,000 12,000 volts
D-C Plate Voltage [2]	12000 V	D-C Plate Voltage 12,000 12,000 volts
D-C Grid Voltage ~ [1]	550 V	D-C Grid Voltage ~550 -550 volts
D-C Grid Voltage ~ [2]	-550 V	D-C Grid Voltage ~550 -550 volts
Peak R-F CGrid Voltage [1]	510 V	Peak R-F CGrid Voltage 510 640 volts
Peak R-F CGrid Voltage [2]	640 V	Peak R-F CGrid Voltage 510 640 volts
D-C Plate Current [1]	4.3 A	D-C Plate Current 4.3 6.8 amperes
D-C Plate Current [2]	6.8 A	D-C Plate Current 4.3 6.8 amperes
Peak R~F Plate Voltage [1]	5300 V	Peak R~F Plate Voltage 5,300 5,300 volts
Peak R~F Plate Voltage [2]	5300 V	Peak R~F Plate Voltage 5,300 5,300 volts
D~C Grid Current [1]	0 mA	D~C Grid Current 0 0 milliamperes
D~C Grid Current [2]	0 mA	D~C Grid Current 0 0 milliamperes
R-F Load Resistance [1]	780	R-F Load Resistance 780 500 ohms
R-F Load Resistance [2]	500	R-F Load Resistance 780 500 ohms
Driving Power, approx. # [1]	450 W	Driving Power, approx. # 450 1,500 watts
Driving Power, approx. # [2]	1500 W	Driving Power, approx. # 450 1,500 watts
Power Output, approx [1]	18 W	Power Output, approx. 18 28 kilowatts
Power Output, approx [2]	28 W	Power Output, approx. 18 28 kilowatts
D-C Plate Voltage	10000 V	D-C Plate Voltage 10,000 volts
D-C Grid Voltage	-3200 V	D-C Grid Voltage -3,200 volts
D-C Plate Current	8.5 A	D-C Plate Current 8.5 amperes
D-C Grid Current	2 A	D-C Grid Current 2.0 amperes
Plate Input	81	Plate Input 81 kilowatts
D-C Plate Voltage	9500 V	D-C Plate Voltage 9,500 volts
D-C Grid Voltage	-1600 V	D-C Grid Voltage -1,600 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak R-F Grid Voltage	2300 V	Peak R-F Grid Voltage 2,300 volts
Peak R-F Plate Voltage	7800 V	Peak R-F Plate Voltage 7,800 volts
D-C Plate Current	8.4 A	D-C Plate Current 8.4 amperes
D~C Grid Current	900 mA	D~C Grid Current 0.90 amperes
R-F Load Resistance	510	R-F Load Resistance 510 ohms
Driving Power, approx	2 W	Driving Power, approx. 2.0 kilowatts
Power OOutput, approx	60 W	Power OOutput, approx. 60 kilowatts
D-C Plate Voltage [1]	10000 V	D-C Plate Voltage 10,000 15,000 volts
D-C Plate Voltage [2]	15000 V	D-C Plate Voltage 10,000 15,000 volts
D-C Grid Voltage [1]	-1200 V	D-C Grid Voltage -1,200 -1,600 volts
D-C Grid Voltage [2]	-1600 V	D-C Grid Voltage -1,200 -1,600 volts
Peak R-F Grid Voltage [1]	1900 V	Peak R-F Grid Voltage 1,900 2,120 volts
Peak R-F Grid Voltage [2]	2120 V	Peak R-F Grid Voltage 1,900 2,120 volts
Peak R-F Plate Voltage [1]	8000 V	Peak R-F Plate Voltage 8,000 12,500 volts
Peak R-F Plate Voltage [2]	12500 V	Peak R-F Plate Voltage 8,000 12,500 volts
D-C Plate Current [1]	10 A	D-C Plate Current 10 7.0 amperes
D-C Plate Current [2]	7 A	D-C Plate Current 10 7.0 amperes
D-C Grid Current, approx [1]	810 mA	D-C Grid Current, approx. 0.81 0.30 amperes
D-C Grid Current, approx [2]	300 mA	D-C Grid Current, approx. 0.81 0.30 amperes
R-F Load Resistance [1]	4	R-F Load Resistance 4ho 970 ohms
R-F Load Resistance [2]	970	R-F Load Resistance 4ho 970 ohms
Driving Power, approx [1]	1.5 W	Driving Power, approx. 1.5 0.60 kilowatts
Driving Power, approx [2]	0.6 W	Driving Power, approx. 1.5 0.60 kilowatts
Power Output, approx. T2	80 W	Power Output, approx. T2 80 kilowatts
Frequency ' [1]	30	Frequency ' 30 50 TO megacycles



SOURCE DATA APPENDIX

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling method	water	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-plate capacitance	55 pF	—
Grid-filament capacitance	76 pF	—
Plate-filament capacitance	2.7 pF	—

TUBE TINKER

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