



ELECTRONIC TUBE REFERENCE

F6401

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

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Specialized ITT pulse power triode for high-voltage RF pulse operation. Tens of amperes of peak cathode current, kilovolt plate capability, and operation to roughly 600 MHz suit demanding pulsed UHF transmitter systems.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	4.25 V / 400 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	12
MAXIMUM PLATE VOLTAGE	17000 V
MAXIMUM PLATE DISSIPATION	1000 W
MAXIMUM CATHODE CURRENT	145 A
Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.	

Three-electrode pulse tube designed as an oscillator or amplifier in the UHF region, using water cooling on the anode and forced-air cooling on the bulb and seals.

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	6401	The F-6401 is a three-electrode tube designed for pulse operation as an
dissipating	1 W	dissipating 1 kilowatt of plate power, exclusive of filament excitation
Filament Voltage	4.25 V	Filament Voltage 4.25 volts
Filament Current	400 A	Filament Current 400 amperes
Filament Starting Current	1000 A	Filament Starting Current 1000 amperes
Filament Cold Resistance	0.0018	Filament Cold Resistance 0.0018 ohms
Peak Cathode Current	145 A	Peak Cathode Current 145 amperes
Grid-Plate	25	Grid-Plate 25 upf
Grid-Filament	36	Grid-Filament 36 puf
Plate-Filament	2.1	Plate-Filament 2.1 puf
Water Flow Required Anode (Note [1])	1	Water Flow Required Anode (Note 1) 1 min. gpm
Water Flow Required Anode (Note [2])	1	Water Flow Required Anode (Note 1) 1 min. gpm
Outlet Water Temperature	70	Outlet Water Temperature 70 wmax. °C
Maximum Glass Temperature	180	Maximum Glass Temperature 180°ϕC
Published value	2 W	2 minutes after shutdown of filament power,
Note	2	Note 2: Air flow on the cathode and grid terminals ang
maximum temperature to	180	maximum temperature to 180°C.
PULSE	-2	PULSE -2-
D~C Plate Voltage	17 kV	D~C Plate Voltage 17 wax. kv
D-C Grid Voltage	-2 kV	D-C Grid Voltage -2 max, kv

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C Grid Current (peak)	5 A	D-C Grid Current (peak) 5 max. amperes
Pulse Length	15	Pulse Length 15 wax. usec.
Plate Input	1.6 kW	Plate Input 1.6 max, kw
Plate Dissipation	1 kW	Plate Dissipation 1.0 max. kw
D-C Plate Voltage	12 kV	D-C Plate Voltage 12 kv
D-C Grid Voltage	-5 kV	D-C Grid Voltage -5 kv
D-C Plate Current (average)	90 A	D-C Plate Current (average) .090 amperes
D-C Grid Current (average)	5 A	D-C Grid Current (average) .005 amperes
Pulse Length	15	Pulse Length 15 usec,
Power Out (during Pulse)	250 kW	Power Out (during Pulse) 250 kw
Power Gain	4 W	Power Gain 4
~	1300 A	~1300 C " CURRENT CIARAT EL'TS'%IJN
NOT® #	1	NOT® #1: Grid ring must be capable
Plate L3 [1]	7	Plate L37%.007 g4, _.-1 r
Plate L3 [2]	7	Plate L37%.007 g4, _.-1 r
Plate L3 [3]	-1	Plate L37%.007 g4, _.-1 r
Published value	4	4 Filament Contact



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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
Maximum full-rating frequency	600 MHz	—
Cooling method	water+air	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum pulse length	15 us	—
Maximum duty factor	0.002	—