



ELECTRONIC TUBE REFERENCE

TV2019

Specialized - Klystron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

KLYSTRON

Very-high-power sealed-off S-band amplifier klystron for particle accelerators, providing multi-megawatt peak output with Vapotron collector cooling.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Klystron

No fixed ratings recorded.

Published ratings and characteristics audited; detailed numeric data retained in parameter table.

The TV2019 is a very-high-power sealed-off S-band amplifier klystron designed for particle-accelerator service. It provides multi-megawatt peak output, high gain and efficiency, Vapotron collector cooling, and an active getter for long life.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1972 Thomson CSF

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

1972 THOMSON CSF

Section 1 · Klystron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
TV	2019 W	TV 2019 is a very high power sealed-
specified central frequency in the range [1]	2700	specified central frequency in the range 2700 - 3100 Mc/s.
specified central frequency in the range [2]	3100	specified central frequency in the range 2700 - 3100 Mc/s.
Beam focalization is insured by a TV	19.009	Beam focalization is insured by a TV 19.009 focus coil external to the tube.
TV	2019 W	TV 2019 high frequency amplifier, of very large peak and average powers, has
High gain	55	- High gain 55 dB.
Heater voltage [1]	25 V	Heater voltage 25 V 10 % (1)
Heater voltage [2]	10 V	Heater voltage 25 V 10 % (1)
Heater voltage [3]	1 V	Heater voltage 25 V 10 % (1)
Heater .current, approximately	21 A	Heater .current, approximately 21i. A
Heater warm-up time min	15	Heater warm-up time min. 15 mn.
R.F, input UG	22	R.F, input UG 22 D/U plug,
R.F, output RG	48	R.F, output RG 48/U waveguide with
Active getter input UG	296	Active getter input UG 296/U plug
(	1 V	(1) The exact heating voltage is indicated on the testing sheet of each tube. This voltage
R.F, input connector UG [1]	21	R.F, input connector UG 21 D/U (coaxial line RG 143/U)
R.F, input connector UG [2]	143	R.F, input connector UG 21 D/U (coaxial line RG 143/U)
Heater -cathode connector TV	19.201	Heater -cathode connector TV 19.201

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Beam voltage	170 kV	Beam voltage 170 kV
Beam current	150 A	Beam current 150 A
Output, peak	10.2	Output, peak 10.2 MW
Output, average	15.3 kW	Output, average 15.3 kW
Gain	55	Gain 55 dB
Bandwidth ([1]	1	Bandwidth (- 1 dB) 15 Mc/s
Bandwidth ([2]	15	Bandwidth (- 1 dB) 15 Mc/s
Pulse duration	5	Pulse duration 5 }_s
Pulse repetition rate	300	Pulse repetition rate 300 pps
Heater surge current	50 A	Heater surge current 50 A
Beam voltage	190 kV	Beam voltage 190 kV
Average applied .power	50 kW	Average applied .power 50 kW
Collector dissipation	50 kW	Collector dissipation 50 kW
Absolute _ pressure on the output window	4	Absolute _ pressure on the output window 4 kg/cm2
Cooling water inlet temperature	50	Cooling water inlet temperature 50 °C
Heater connection	47	Heater connection 047
Cathode Heater connection	835	Cathode Heater connection 0835

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