



ELECTRONIC TUBE REFERENCE

TV2014

Specialized - Klystron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

KLYSTRON

Five-cavity high-power sealed-off S-band klystron amplifier designed as an RF power source for linear accelerators, using water/Vapotron 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 TV2014 is a five-cavity high-power sealed-off S-band klystron amplifier intended as an RF power source for linear accelerators. It provides very high peak and average output power and uses water/Vapotron cooling.

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
cavity high power sealed-off klystron amplifier able to ,"" \ s ,	4 W	cavity high power sealed-off klystron amplifier able to ,"" \ s ,4
deliver a [1]	30 kW	deliver a 30 kW average power min and a 25 MW peak
deliver a [2]	25 kW	deliver a 30 kW average power min and a 25 MW peak
given center frequency in the range [1]	2700	given center frequency in the range 2700 - 3100 Mc.
given center frequency in the range [2]	3100	given center frequency in the range 2700 - 3100 Mc.
The rf input is made on a	5011	The rf input is made on a 5011 -N type coaxial
The beam focusing is obtained by a TV	19008	The beam focusing is obtained by a TV 19008
RF input UG	22	RF input UG 22 D/U plug
RF output two RG	48	RF output two RG 48/U waveguides with reduced
Active getter input UG	496	Active getter input UG 496/U plug
Heater voltage (a. c or d. c) [1]	25 V	Heater voltage (a. c or d. c) 25V 5% (1)
Heater voltage (a. c or d. c) [2]	5 V	Heater voltage (a. c or d. c) 25V 5% (1)
Heater voltage (a. c or d. c) [3]	1 V	Heater voltage (a. c or d. c) 25V 5% (1)
Hot heater resistance [1]	1	Hot heater resistance 1 IL 10 %
Hot heater resistance [2]	10	Hot heater resistance 1 IL 10 %
Cold heater resistance [1]	0.14	Cold heater resistance 0.14 10

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cold heater resistance [2]	10	Cold heater resistance 0.14 10
Bandwidth . , min	15	Bandwidth . , min 15 Mc
Peak output power min	25 W	Peak output power min 25 MW
Average output power min	30 kW	Average output power min 30 kW
Efficiency (for an output peak power [1])	10 W	Efficiency (for an output peak power 10 MW) min 40
Efficiency (for an output peak power [2])	40 W	Efficiency (for an output peak power 10 MW) min 40
RF input connector US [1]	21 us	RF input connector US 21 D/U (coaxial line RG 1143/U)
RF input connector US [2]	1143 us	RF input connector US 21 D/U (coaxial line RG 1143/U)
Heater -cathode connector TV	19201	Heater -cathode connector TV 19201
(	1 V	(1) The exact heating voltage is indicated on the testing sheet of each tube.
This voltage is to be observed within +	5 V	This voltage is to be observed within + 5 ~.
Beam voltage	235 kV	Beam voltage 235 kV
Beam current	21 A	Beam current 21f0 A
Output, peak	255	Output, peak 25,5 MW
Output, average	305 kW	Output, average 30,5 kW
Gain	5	Gain 5 db
Bandwidth (- I. db)	30	Bandwidth (- I. db) 30 Mc
Pulse duration	4	Pulse duration 4 }zS
Heater warm-up time min	15	Heater warm-up time min 15 mn
Heater surge current max	50 A	Heater surge current max 50 A
Beam voltage max	270 kV	Beam voltage max 270 kV
Average applied power max	67.5 kW	Average applied power max 67.5 kW
Efficient d. c pulse duration max	11	Efficient d. c pulse duration max 11 is
Cooling water inlet temperature max	50	Cooling water inlet temperature max 50°C
Heater Connection X4	7	Heater Connection X47