



ELECTRONIC TUBE REFERENCE

4K50000LQ

Specialized - Klystron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
KLYSTRON

Four-cavity magnetically focused Eimac power-amplifier klystron covering approximately 600–985 MHz, delivering about 10 kW CW with broadband capability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	8 V / 40 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Klystron

No fixed ratings recorded.

Single electrical section; values mapped from printed ratings/characteristics. Klystron represented as SectionType Other because the canonical section vocabulary has no Klystron section type.

The Eimac 4K50,000LQ is a ceramic and metal, four-cavity, magnetically focused, power-amplifier klystron designed for use at frequencies between 600 and 985 megacycles. It will deliver a minimum CW output power of 10 kilowatts with a power gain of more than 55 db. In applications requiring a 6~megacycle bandwidth at the 0.5-db power points, the 4K50, 000LQ will deliver 10 kilowatts output power with a power gain of 30 db. The resonant cavities for the 4K50, 000LQ are completed through the cylindrical ceramic windows of the klystron and all tuning is accomplished outside the vacuum envelope. This design permits a wide tuning range and allows repeated tuning cycling without damage to vacuum seals. An Eimac Klystron Amplifier Circuit Assembly (Catalog Number H-101A) has been designed for use with this tube and covers the frequency range of 720 to 985 megacycles. Other frequency ranges can be provided if required. This assembly includes an electro-magnetic frame and coils, external tuning boxes, an adjustable output coupler, and an Eimac SK-110 Air-System Socket.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

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

1962 EIMAC

Section 1 · Klystron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The Eimac	0 a	The Eimac 4K50,000LQ is a ceramic and metal, four-cavity, mag-
frequencies between	985 megacycles	frequencies between 600 and 985 megacycles. It will deliver a
minimum CW output power of	10 kilowatts	minimum CW output power of 10 kilowatts with a power gain of more
than	6 db	than 55 db. In applications requiring a 6~megacycle bandwidth at
the	10 db	the 0.5-db power points, the 4K50, 000LQ will deliver 10 kilowatts
output power with a power gain of	30 a	output power with a power gain of 30 db.
frequency range of	985 megacycles	frequency range of 720 to 985 megacycles. Other frequency ranges
Voltage - ~	8 volts	Voltage - ~ - - 8.0 volts
Current	40 amperes	Current - - - - 40 amperes
Maximum Starting Current	80 amperes	Maximum Starting Current - - 80 amperes
Voltage	2250 volts	Voltage - - - - 2250 volts
Current	0.71 ampere	Current - - - - 0.71 ampere
Power	1600 watts	Power - - - - 1600 watts
Narrow Band	55 db	Narrow Band - - - 55 db
Broad Band (	30 db	Broad Band (6 mc at 0.5-db points)* 30 db
Output Power	10000 watts	Output Power - - - - 10,000 watts
R-F Output Coupling	50 ohm	R-F Output Coupling - 3 1/8-inch 50-ohm air line
Prefocus~Coil Voltage	25 volts	Prefocus~Coil Voltage - - - - 0to 25 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Prefocus-Coil Current	1 ampere	Prefocus-Coil Current - - - 0 to 1 ampere
Voltage	175 volts	Voltage - - - - 0to 175 volts
Current - - - - - 0to	3 amperes	Current - - - - - 0to 3 amperes
Collector-Coil Voltage	50 volts	Collector-Coil Voltage - - - 0to 50 volts
Collector-Coil Current	5 amperes	Collector-Coil Current - - - 0to1.5 amperes
D-C BEAM CURRENT	2.5 AMPERES	D-C BEAM CURRENT - - - - 2.5 MAX, AMPERES
D-C BODY CURRENT (CONTINUOUS)	0.1 AMPERE	D-C BODY CURRENT (CONTINUOUS) - - - 0.1 MAX, AMPERE
D-C BODY CURRENT (TUNING ONLY)	0.15 AMPERE	D-C BODY CURRENT (TUNING ONLY) - - - 0.15 MAX, AMPERE
FOCUS-ELECTRODE VOLTAGE	500 VOLTS	FOCUS-ELECTRODE VOLTAGE - - - - -500 MAX, VOLTS
D-C CURRENT	0.75 AMPERE	D-C CURRENT - - - - - 0.75 MAX. AMPERE
D-C POWER	1.6 KILOWATTS	D-C POWER - - - - - 1.6 MAX, KILOWATTS
COLLECTOR DISSIPATION	50 KILOWATTS	COLLECTOR DISSIPATION - - - 50 MAX, KILOWATTS
Frequency	900 megacycles	Frequency - - - - 900 900 megacycles
Output Power	11.2 kilowatts	Output Power - - - - 10.15 11.2 kilowatts
Bandwidth (	1.05 db	Bandwidth (0,.5-db power - - 6.85 1.05 megacycles
Driving Power	0.02 watts	Driving Power - - - - 5 0.02 watts
Power Gain	57.5 db	Power Gain - - - - 33 57.5 db
D-C Beam Current	1.59 amperes	D-C Beam Current - - - 1.78 1.59 amperes
Beam Input Power	25.4 kilowatts	Beam Input Power - - - 30.2 25.4 kilowatts
D-C Collector Current	1.51 amperes	D-C Collector Current - - 1.7 1.51 amperes
Collector Dissipation*	1292 kilowatts	Collector Dissipation* - - - 11.51 12,92 kilowatts
Focus-Electrode Voltage	200 volts	Focus-Electrode Voltage - - - -200 -200 volts
Filament Voltage	8 volts	Filament Voltage - - - - 8.0 8.0 volts
Filament Current	40 amperes	Filament Current - - - - 40 40 amperes
Voltage*	2250 volts	Voltage* - - - - 2250 2250 volts
Current*	0.71 ampere	Current* - - - - 0.71 0.71 ampere
Power	1600 watts	Power - - - - - 1600 1600 watts
Prefocus	0.75 ampere	Prefocus - - - - 0.8 0.75 ampere
First Body	1.2 amperes	First Body - - 1.2 1.2 amperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Second Body	1.8 Second	Second Body - - 1.9 1.8 amperes
Third Body	2.3 amperes	Third Body - - 2.5 2.3 amperes
Collector	0.85 ampere	Collector - - 0.85 0.85 ampere
SECTION A-A K	1.1 A	SECTION A-A K 1.030 1.100
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