EIMAC
Division of Varian
SAN CARLOS
CALIFORNIA

5K70SH

S-BAND

30 KW CW

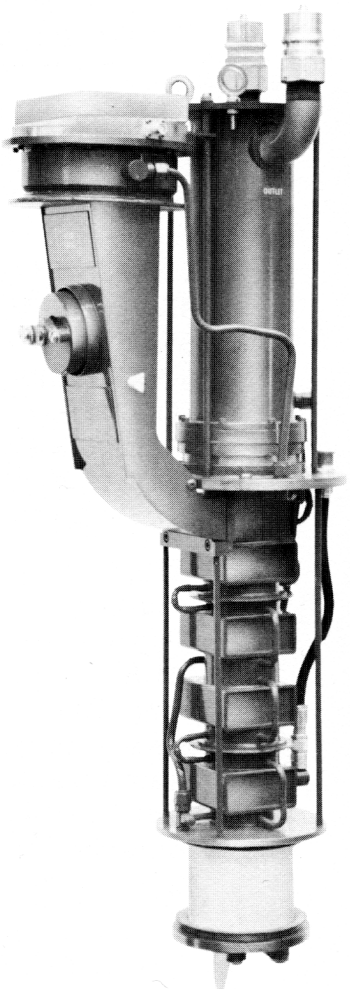
POWER AMPLIFIER KLYSTRON

The EIMAC 5K70SH power amplifier klystron was designed specifically for industrial heating applications. The outstanding characteristic of this klystron is its high efficiency at full power. The 5K70SH delivers 30 kilowatts output power at better than 50% efficiency at 2450 MHz with a minimum gain of 50 db.

An extra large cathode is used in the 5K70SH to assure long life. Five integral cavities are employed for high gain, and all are pre-tuned at the factory. Also, input and output couplings are factory adjusted. In short, no tuning of any kind is required.

The output "window," where microwave power is transferred from the vacuum within the klystron to the external waveguide, is made of beryllium oxide. This insulating material has extremely good heat-transfer and mechanical characteristics. It is virtually indestructible in this application.

A focusing electromagnet, Catalog Number H-226, has been designed for use with the 5K70SH. EIMAC Water Load WL-204 is recommended for use with this klystron.



CHARACTERISTICS

ELECTRICAL

Heater: Voltage (±5%)	7.5	Vac
Current (nominal)	11.5	Aac
Cathode: Oxide Coated		
Heating Time	5	Min
Getter: Voltage	4	Vac
Current	24	Aac
Power Gain	50	db
Output Power	30	kW
Frequency	2450	MHz
Phase Shift as a Function of Beam Voltage	0.0935	°/V

MECHANICAL

Operating Position	Any
Input rf Coupling	Type N Coaxial Fitting
Output rf Coupling	UG435A/U Flange
Weights: 5K70SH	100 lbs
H-226 Electromagnet	186 lbs

Cooling: Forced Air and Water	*Flow Rate*	*Pressure Drop*
Cathode	20 cfm	Free
Klystron Body	0.8 gpm	50 psi
Klystron Collector	18 gpm	30 psi
Electromagnet	2 gpm	30 psi

ELECTROMAGNET POWER SUPPLY REQUIREMENTS

Voltage, Adjustable to	150 Vdc
Current, Adjustable to	25 Adc

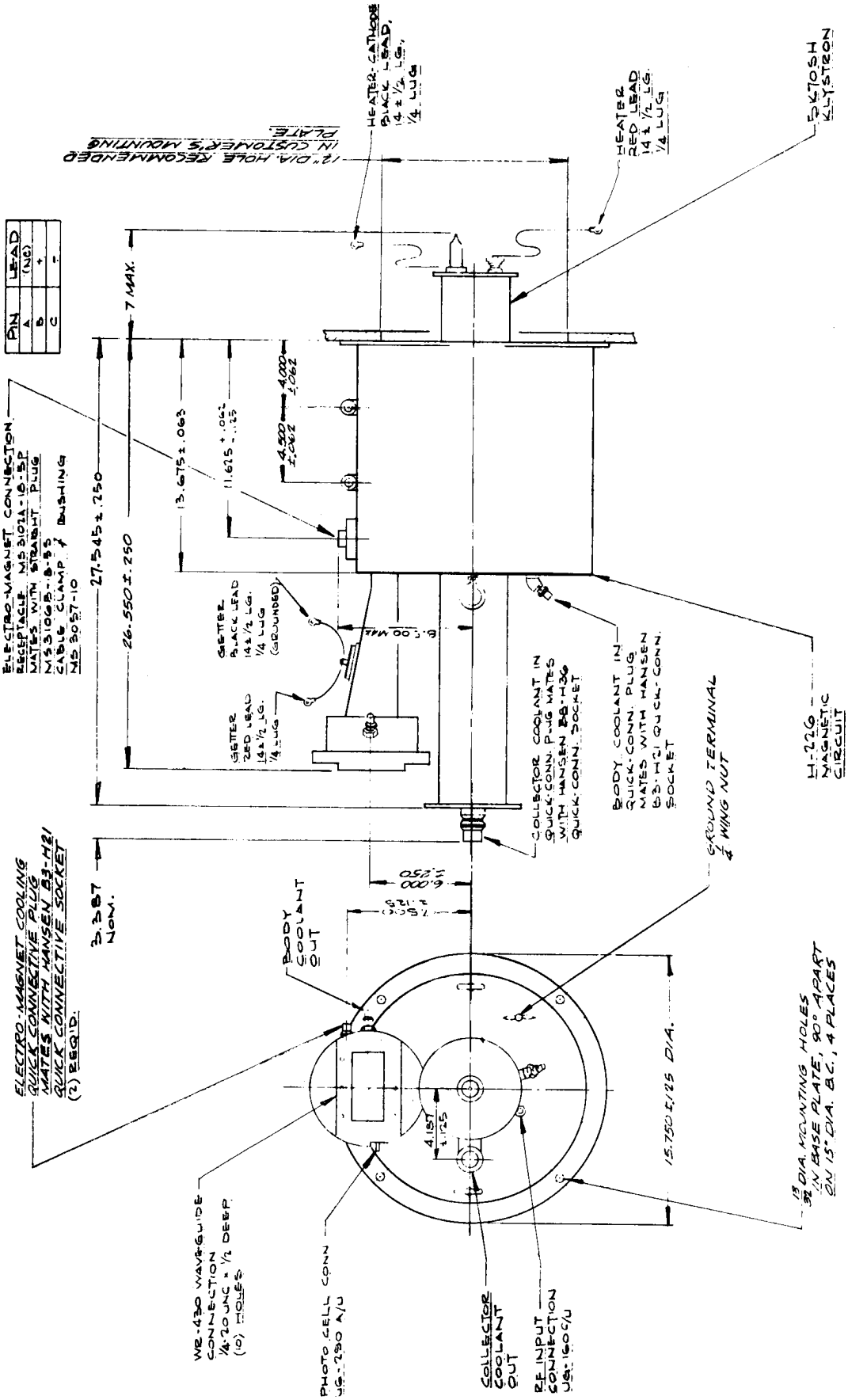
MAXIMUM RATINGS

BEAM VOLTAGE	23 kVdc
BEAM CURRENT	3 Adc
BEAM INPUT POWER	70 kW
BODY CURRENT	100 mAdc
COLLECTOR DISSIPATION	70 kW
INLET COOLANT PRESSURE	125 psig
COOLANT OUTLET TEMPERATURE	80 °C
LOAD VSWR (NON DESTRUCTIVE)	3:1

TYPICAL OPERATION

Frequency	2450 MHz
Output Power	31.5 kW
Driving Power	100 mW
Power Gain	55 db
Beam Voltage	22.5 kVdc
Beam Current	2.66 Adc
Body Current	50 mAdc
Efficiency	52.5 %
Electromagnet Current	16.5 Adc

For additional data or information regarding a specific application, write to EIMAC, Division of Varian, 301 Industrial Way, San Carlos, California.



5K70SH and H-226