

PRELIMINARY TECHNICAL INFORMATION

These ratings represent those of current samples of this type. Refer to the Objective Technical Information sheet for design-objective ratings.

DEVELOPMENTAL
TYPE

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ZM-6600

X-BAND

MULTIPLE-BEAM KLYSTRON

40 KILOWATTS CW

The ZM-6600 is a klystron featuring a multiple-gun assembly in a single compact vacuum envelope. The use of a multiplicity of electron beams provides a power output greatly in excess of that obtainable in the basic single-beam tube. The tube operates at comparatively low voltages, which reduces problems associated with high-voltage power supplies, voltage breakdown and radiation protection.

Other design features include reduced size and weight over conventional klystrons at high-power levels where external paralleling is required.

The multiple-beam klystron is particularly adapted for use in long-range radar and high-power communications systems.

GENERAL

ELECTRICAL

Frequency	8.3 - 8.5	Gigacycles
Tuning Range	80	Megacycles
Cathode - Impregnated Unipotential		
Voltage, maximum	9	Volts
Current, maximum	40	Amperes
Focusing Method - Electromagnet		

MECHANICAL

Connectors - Waveguide		
RF Input and Output - Matches UG-51/U Flange		
Weight		
Tube and Pole - Piece Assembly	100	Pounds
Electromagnet	160	Pounds

THERMAL

Cooling - Water		
Collector		
Inlet Pressure, maximum	100	Pounds per Square Inch
Differential Pressure, maximum (incoming to outgoing)	65	Pounds per Square Inch
Water Flow, minimum	25	Gallons per Minute
Body		
Inlet Pressure, maximum	40	Pounds per Square Inch
Water Flow, minimum	1.5	Gallons per Minute
Cathode		
Pressure, maximum	40	Pounds per Square Inch
Water Flow, minimum	0.1	Gallons per Minute
Magnet		
Pressure, maximum	40	Pounds per Square Inch
Water Flow, minimum	2	Gallons per Minute

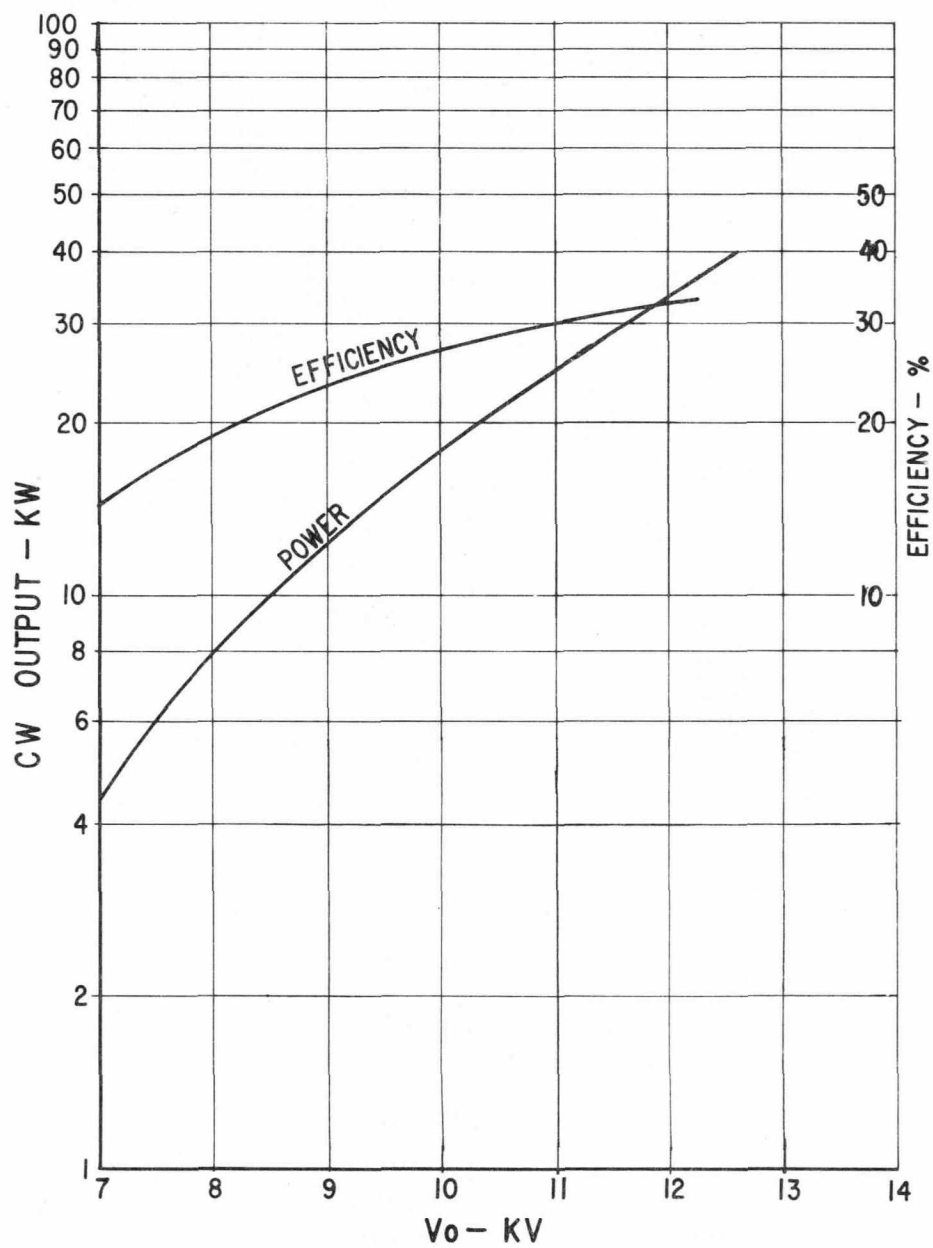
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MAXIMUM RATINGS

Beam Voltage	13	Kilovolts
Cathode Current	11.8	Amperes
Perveance, total	8.0	Micropervs
Magnet		
Current	12.5	Amperes
Power	3.1	Kilowatts
Load VSWR	1.25	
Output, CW	40	Kilowatts

TYPICAL OPERATING CONDITIONS (High-Efficiency Tuning)

Gain	45	Decibels
Efficiency	34	Percent
Bandwidth (3 db)	19	Megacycles
Output, CW	40	Kilowatts
Beam Voltage	11.7	Kilovolts
Cathode Current	10	Amperes



CW Output Power and Corresponding Efficiency for Various Values of Beam Voltage

