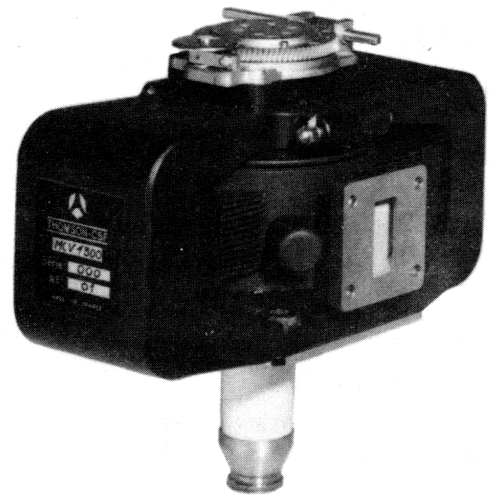
MCV 1300 MAGNETRON

The MCV.1300 is a coaxial magnetron capable of delivering a peak output power of at least 200 kW over the frequency range of 8. 5 to 9. 6 GHz.

It incorporates integral magnets and is cooled by forced air. The frequency is mechanically tunable.

The tube is extremely reliable under the most severe environmental conditions. With the new coaxial structure, radar applications have found improved frequency stability. The MCV.1300 is ideal for use in frequency adjustable systems, airborne and ground based radars.

This tube is a convenient replacement for 7008 and other conventional 200 kW magnetrons.



GENERAL CHARACTERISTICS

Electrical

	min.	nom.	max.	
Stand by heater warm-up voltage	-	13. 75	-	V
Stand by heater warm-up current	2. 9	-	3. 3	A
Heater voltage in operation (for Ia = 27, 5 A)	-	-	0	V
Frequency	8. 5	-	9. 6	GHz
Output power, peak	200	-	-	kW
Anode voltage	20	-	23	kV
Pulling (VSWR = 1. 5 : 1)	-	-	5	MHz
Pushing	-	-	100	KHz/A
RF Band width (VSWR = 1. 5 : 1)	-	-	2/tp	MHz
Side lobe level	9	-	-	dB
Stability, missing pulses	-	-	0. 25	%

Mechanical

Weight	7 kg
Dimensions	see drawing
Operating position	any
Cooling	forced air
Tuning torque	600 cm/g
Shaft rotation rate	1200 r/mn
RF output flange	mates with UG 52/U

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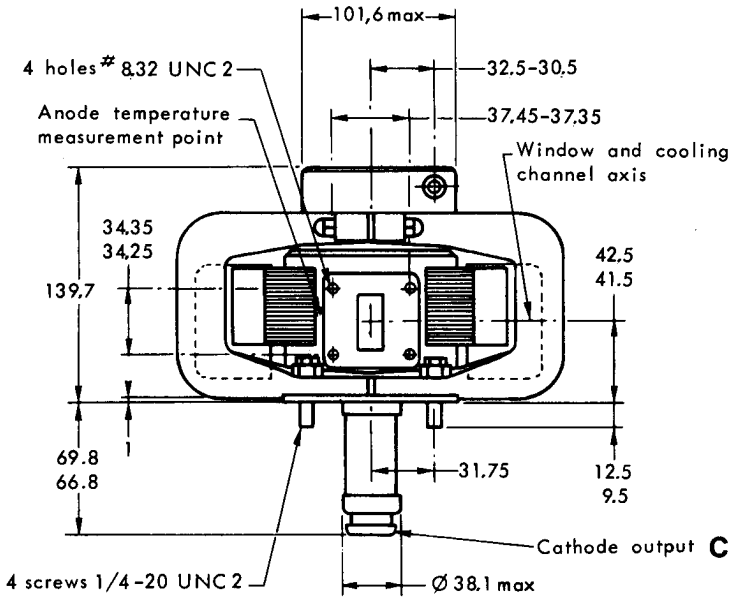
ABSOLUTE RATINGS

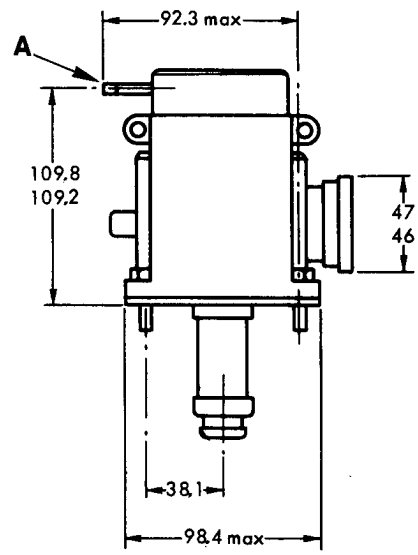
	min.	max.	
Applied power, peak	-	680	kW
Applied power, average	-	680	W
Anode voltage, peak	-	24	kV
Anode current, peak	15	30	A
Duty cycle	-	0.0011	
Pulse duration, tp	0.2	3	µs
Anode temperature	−55	+125	°C
Cathode bushing temperature	−55	+165	°C
Load VSWR	-	1.5 : 1	
Rate of rise of voltage	90	170	kV/µs
Heater surge current	-	12	A
Cooling air flow (at 25 °C)	0.70	-	kg/mn
Warm-up time	3	-	mn

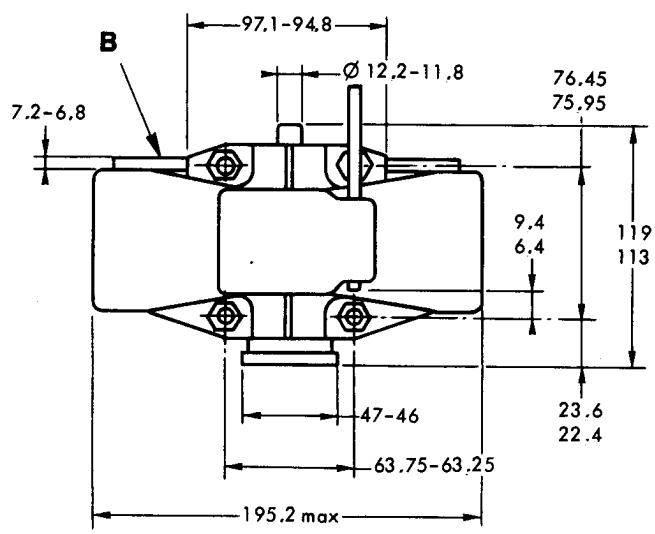
TYPICAL OPERATION

Pulse duration	1	µs
Duty cycle	0.001	
Stand by heater warm-up voltage	13.75	V
Stand by heater warm-up current	3	A
Anode current, peak	27.5	A
Anode voltage, peak	23	kV
RF output power, peak	230	kW
Heater voltage in operation	0	V
Side lobe level	12	dB
RF band width	1.2	MHz
Pulling (VSWR 1.5 : 1)	3	MHz
Pushing	70	kHz/A
Load VSWR	1.1 : 1	
Temperature coefficient	−0.15	MH/°C
Rate of rise of voltage	150	kV/µs
Stability, missing pulses	< 0.1	%

OUTLINE DRAWING







SEE DETAILS A,B,C, page 4

Dimensions in mm.

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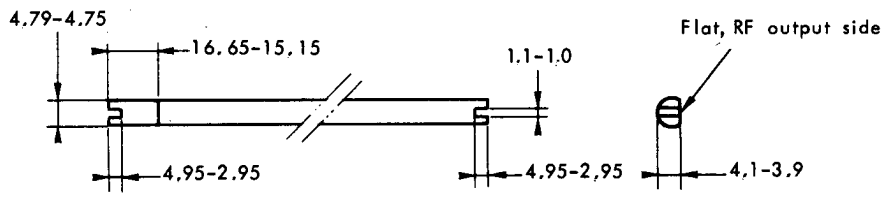
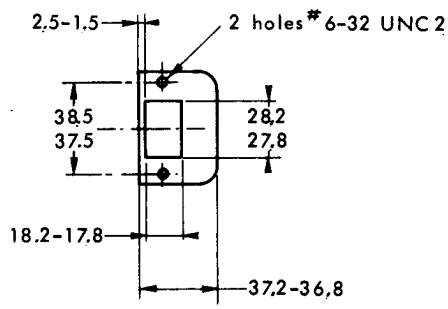
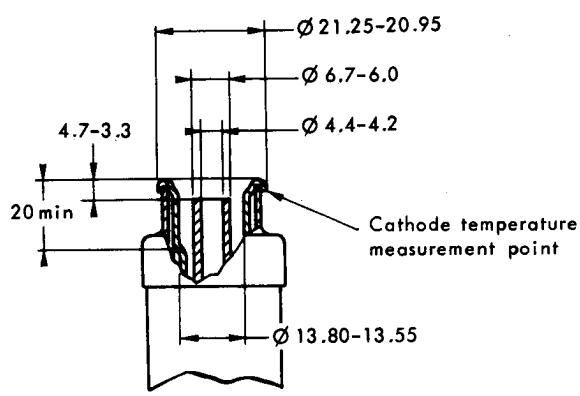
Details



DETAIL A



DETAIL B



DETAIL C

Dimensions in mm.