

WESTERN ELECTRIC 7208A ELECTRON TUBE

TYPE DESIGNATION REGISTRATION

September 20, 1960

Manufacturer's Designation:
JEDEC Designation: 7208A
Manufacturer: Western Electric Company

GENERAL CHARACTERISTICS

The 7208A is a pulsed magnetron oscillator tube which operates at a tunable frequency of 15500 to 17500 Mc. The peak power output is approximately 125 kilowatts and the tube is forced-air cooled. The tube uses an integral magnet.

GENERAL ELECTRICAL DATA

Pre-heat Heater Voltage.	12.6 $\pm$ 5% volts
Pre-heat Heater Current at 12.6 Volts.	3.25 $\pm$ 0.25 amperes
Minimum Pre-heat Time.	270 seconds
Heater Cold Resistance	0.4 ohm (approximately)
Anode-Cathode Capacitance	14 μ F (approximately)

ABSOLUTE MAXIMUM RATINGS

Heater Voltage	13.0 volts
Heater Current	3.5 amperes
Heater Surge Current	13.6 amperes
Peak Anode Current	20 amperes
Peak Anode Voltage	20 kilovolts
Average Power Input.	350 watts
Duty Cycle	0.001
Pulse Duration	3.3 microseconds
Rate of Rise of Anode Voltage (above 50% point). . .	120 KV/ μ sec
Output Circuit Pressurization.	15 psia min., 45 psia max.
Maximum Altitude without Pressurization	
Output Circuit.	sea level
Input Terminals	sea level
Body Temperature	150°C
Cathode Stem Temperature	300°C
VSWR (Magnetron Load)	1.5:1 max.

TYPICAL OPERATING RATINGS

Frequency.	15500 to 17500 Mc.
Peak Anode Voltage at 17.5 kmc	17.5 $\pm$ 1.5 kv - 1.0 kv
Pulling Figure (VSWR 1.5/1).	6 Mc.
Pushing Factor	-Mc/a

TYPICAL OPERATING RATINGS (Continued)

Current Pulse Duration	Duty Factor	Peak Anode Current	Stability	Peak Power Output	Voltage Pulse Rate-of-Rise	RF Band Width at 1/4 po pts.	Heater Voltage
μsec		Amperes	% Missing Pulses	Kilo-watts	KV per μsec (above 50 % point)	$\sigma' = 1.5:1$ worst phase 1: Mc	Volts $\pm 5\%$
0.25	0.0007	19	1% max.	125 min.	100	4.5 Mc	8.5
3	0.001	19	1% max.	125 min.	100	0.6 Mc	6.8

GENERAL MECHANICAL CHARACTERISTICS

Mounting Position. any
 Mounting Support See 4 hole
 Mounting Plate in
 outline drawing
 Weight 14 lbs. Max.

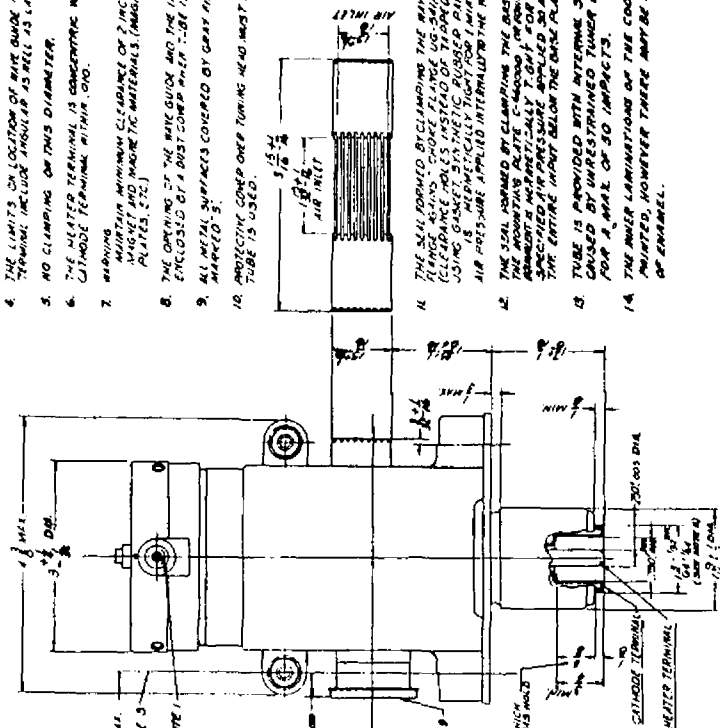
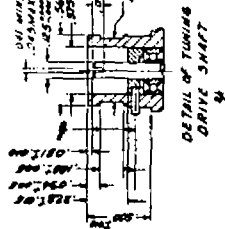
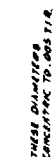
Coupling between Tube and Load:

Waveguide (RG91/U) per outline drawing. The mating flange may be UG419/U cover flange or a modified (clearance holes instead of tapped 6-32) UG541/U choke flange.

Cooling Data

To limit rise in body temperature to 100°C for a dissipation 200 watts - 10 cfm.

Recommended cathode stem temperature 225°C $\pm$ 25°C.



- NOTES:

1. THE FREQUENCY VARIATIONS WITH DRIVE SHAFT IS DRIVEN IN DIRECTION INDICATED BY ARROW.
 2. THE TUNING MECHANISM OPERATES SIMULTANEOUSLY ON THE ENTIRE SURFACE OF THE COILS. WHEN SUBJECTED TO A DYNAMIC LOAD, THE COILS WILL BECOME STIFFER AND THE TUNING MECHANISM WILL ADJUST THE WINDING TENSION TO MAINTAIN THE WINDING TENSION. THE STIFFNESS OF THE WINDING TENSION WILL BE ADJUSTED TO MAINTAIN THE WINDING TENSION. THE STIFFNESS OF THE WINDING TENSION WILL BE ADJUSTED TO MAINTAIN THE WINDING TENSION.
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 4. THE LIMITS ON LOCATION OF WIRE GUIDE, OUTPUT AND INPUT TERMINALS, INCLUDING SHOULDERS AS WELL AS LATERAL ADJUSTMENTS.
 5. NO CLAMPING ON THIS DIAMETER.
 6. THE HEATED TERMINAL IS CONNECTED WITH THE WIRE GUIDE TERMINAL WITHIN. TWO.
 7. WINDING.
 8. THE WINDING OF THE WIRE GUIDE AND THE INPUT SHALL BE ENCLOSED IN A DUST COVER WHEN TEST IS NOT IN USE.
 9. ALL METAL SURFACES COVERED BY GRAY FINISH EXCEPT THOSE MARKED 5.
 10. PROTECTIVE COVER OVER TUNING HEAD MUST BE REMOVED BEFORE TUBE IS USED.
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11. THE SEAL FORMED BY CLAMPING THE WIRE GUIDE OUTPUT FLANGE AGAINST THE COIL FLANGE USING THE WIRE GUIDE OUTPUT FLANGE HOLES INSTEAD OF THREADED HOLES (NO 30) USING A LOCKWASHER. THE LOCKWASHER MUST BE USED TO MAINTAIN THE AIR PRESSURE APPLIED IN THE WIRE GUIDE.
 12. THE SEAL FORMED BY CLAMPING THE WIRE GUIDE OUTPUT FLANGE AGAINST THE COIL FLANGE USING THE WIRE GUIDE OUTPUT FLANGE HOLES INSTEAD OF THREADED HOLES (NO 30) USING A LOCKWASHER. THE LOCKWASHER MUST BE USED TO MAINTAIN THE AIR PRESSURE APPLIED IN THE WIRE GUIDE.
 13. TUBE IS PROVIDED WITH INTERNAL TUNER FOR IMPACT CAUSED BY UNRESTRAINED TUNER DRIVE ANOTHER FOR A MAX OF 50 IMPACTS.
 14. THE WIRE LAMINATIONS ON THE COOLING TUBE ARE NOT MOUNTED. HOWEVER THERE MAY BE A SLIGHT OVERLAP OF WIRE.