

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 ± 5% volts
Pre-heat Heater Current at 12.6 Volts . . . . .	3.25 ± 0.25 amperes
Minimum Pre-heat Time . . . . .	270 seconds
Heater Cold Resistance . . . . .	0.4 ohm (approximately)
Anode-Cathode Capacitance . . . . .	14µµf (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/µsec
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 + 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 K: Mc	Volts±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 ± 25°C.

