

# RMA Release # 215

Reservation No. 292    Date: 7/24/39    Registration No. 215    Date: 9/18/39

Type No. 20J8 (GM)

Sponsor:- Rogers Radio Tubes Limited, Toronto, Ontario

Type Classification:- Triode Heptode Converter

Physical Specification:-

Type of Cathode:- Unipotential

Pin Connections:-

Pin 1	S	Pin 5	G <sub>0</sub> , G <sub>3</sub>
2	H	6	P <sub>0</sub>
3	P	7	H
4	G <sub>2</sub> , G <sub>4</sub>	8	K, G <sub>5</sub>

Basing Designation: 8H

Top Cap G<sub>1</sub>

Type of Base	Small octal shell
Type of Cap	Miniature
Type of Bulb	ST12 - Metal spray
Maximum Diameter	1 9/16"
Maximum Overall Length	4 11/32"
Maximum Seated Height (Including top cap)	3 25/32"

Mounting Position for Operation:- any

Direct Interelectrode Capacitances:-

Signal Grid to Mixer Plate	0.012	uuf (max.)
Signal Input to all other electrodes	5	uuf
Osc. Output to all other electrodes	5.5	uuf

## CONVERTER

Ratings:-

Heater or Filament Voltage (ac or dc)	20	volts
Heater or Filament Current	0.15	amps
Maximum Plate Voltage	250	volts
Maximum Screen Voltage	100	volts
Maximum Plate Dissipation	2.5	watts
Maximum Screen Dissipation	0.6	watts
Maximum Osc. Anode Voltage	100	volts
Maximum Osc. Anode Dissipation	0.75	watts
Maximum Total Cathode Current	18	ma
Minimum Signal Grid Bias Voltage	-1	volts

Typical Operation:-

Converter Service:-

Plate Voltage	100	250	volts
Screen Voltage (Grid #G2, G4)	100	100	volts
Signal Grid Voltage (Grid #G1)	-3	-3	volts
Osc. Anode Voltage (P0)	100	* 250	volts
Osc. Grid (Grid #G0, G3) Resistor	50,000	50,000	ohms
Peak Osc. Grid Voltage (min.)	25	25	volts
Plate Resistance	1	2	megohms
Conversion Transconductance			
Ec1 = -1 volt	320	350	umhos
Ec1 = -3 volts (rated bias)	240	270	umhos
Ec1 = -5 volts	110	130	umhos
Ec1 = -15 volts (cut-off bias)	10	10	umhos
Plate current	1.4	1.5	ma
Screen current	3.5	3.4	ma
Osc. Anode current	5	6.5	ma
Osc. Grid current	0.4	0.4	ma

Oscillator Section Characteristics:-

Osc. Anode Voltage	100	* 250	volts
Osc. Grid Voltage	0	0	volts
Transconductance	2500	2300	umhos
Amplification Factor	15	15	
Osc. Anode Current	12.5	8.5	ma
Osc. Grid Current at Zgk = 7000 ohms	400	500	uamps
Zgk = 5500 ohms	300	400	uamps
Zgk = 300 ohms	50	60	uamps

\* Plate voltage applied thru 20,000 ohms series resistor.