

# AMPEREX TUBE TYPE 7092

The Amperex 7092 is a directly heated triode especially designed for industrial oscillator and amplifier applications for both intermittent and continuous operation. This tube features rugged construction and excellent overload characteristics and can operate at frequencies up to 50 megacycles.

## GENERAL CHARACTERISTICS

### ELECTRICAL DATA

Cathode	thoriated tungsten
Filament Voltages	6.3 volts
Filament Current	32.5 amperes
Amplification Factor $E_b = 4KV, I_p = 190 \text{ mA}$	22
Transconductance $E_b = 4KV, I_p = 190 \text{ mA}$	5100 micromhos
Direct Interelectrode Capacitances	
Grid to Plate	6.2 $\mu\text{mf}$
Grid to Filament	10.5 $\mu\text{mf}$
Plate to Filament	0.25 $\mu\text{mf}$

### MECHANICAL DATA

Maximum Overall Dimensions	
Length	10-1/64 inches
Diameter	6-1/8 inches
Mounting Position	vertical, base up or down
Maximum Seal Temperature	220° C
Maximum Bulb Temperature	350° C
Auxiliary Cooling <sup>1</sup>	forced air
Net Weight	1.32 lbs

### ACCESSORIES

Plate Connector	S-3702
Socket	S-21421

<sup>1</sup> Cooling is generally not required under matched load conditions up to 50 Mc/s when the plate voltage does not exceed 3000 volts. At higher plate voltages, higher frequencies, and non-matched load operation, a low velocity air flow directed at the tube, preferably below the tube socket, is required. A small fan or centrifugal blower will be sufficient.

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## INDUSTRIAL OSCILLATOR - CLASS C CONTINUOUS DUTY THREE PHASE RECTIFIED UNFILTERED PLATE SUPPLY

Maximum Ratings, Absolute Values

Frequency	50 Mc/s max
D-C Plate Voltage	7000 volts max
D-C Grid Voltage	-1250 volts max
D-C Plate Current	750 mA max
D-C Grid Current	300 mA max
D-C Grid Current (no load)	400 mA max
Plate Dissipation	800 watts max
Plate Power Input	4000 watts max
Grid Resistor	10,000 ohms max

### Typical Operation

Frequency	50	50	50	50 Mc/s
D-C Plate Voltage	6000	5000	4000	3000 volts
D-C Grid Voltage	-450	-400	-360	-300 volts
Peak RF Grid Voltage	760	770	730	670 volts
D-C Plate Current (full load)	600	700	700	700 mA
D-C Plate Current (no load)	120	150	170	200 mA
D-C Grid Current (full load)	150	160	180	200 mA
D-C Grid Current (no load)	260	280	300	340 mA
Grid Resistor	3000	2500	2000	1500 ohms
Driving Power (approx)	114	123	131	134 watts
Plate Input	3600	3500	2800	2100 watts
Plate Dissipation	760	780	640	540 watts
Plate Power Output	2840	2720	2160	1560 watts
Efficiency	79	78	77	74 %
Plate Load Impedance	5400	3800	3000	2250 ohms
Feedback Ratio	7.5	6	5	4

## INDUSTRIAL OSCILLATOR - CLASS C CONTINUOUS DUTY SINGLE PHASE RECTIFIED UNFILTERED PLATE SUPPLY

Maximum Ratings, Absolute Values

Frequency	50 Mc/s max
D-C Plate Voltage	6300 volts max
D-C Plate Input	4000 watts max
D-C Grid Voltage	-1250 volts max
D-C Plate Current	670 mA max
D-C Grid Current (loaded)	270 mA max
D-C Grid Current (unloaded)	400 mA max
Plate Dissipation	800 watts max
Grid Resistor	10,000 ohms max

### Typical Operation

Frequency	50	50	50	50 Mc/s
D-C Plate Voltage	5400	4500	3600	2700 volts
D-C Grid Voltage	-420	-375	-325	-270 volts
Peak RF Grid Voltage	750	715	685	625 volts
D-C Plate Current (full load)	530	600	630	630 mA
D-C Plate Current (no load)	100	120	155	180 mA
D-C Grid Current (full load)	140	150	160	180 mA
D-C Grid Current (no load)	240	260	270	305 mA
Grid Resistor	3000	2500	2000	1500 ohms
Driving Power (approx)	105	107	110	113 watts
Plate Input	3520	3320	2800	2100 watts
Plate Dissipation	770	770	640	540 watts
Plate Power Output	2750	2550	2160	1560 watts
Efficiency	78	77	77	74 %
Plate Load Impedance	5400	3800	2850	2140 ohms
Feedback Ratio (full load)	7.5	6.5	6.35	5

## SELF RECTIFIED INDUSTRIAL OSCILLATOR - CLASS C Maximum Ratings, Absolute Values

Frequency	50 Mc/s max	←
Secondary Transformer Voltage (RMS)	5600 volts max	
D-C Grid Voltage <sup>2</sup>	-1250 volts max	
D-C Plate Current <sup>3</sup>	400 mA max	
D-C Grid Current <sup>3</sup>	160 mA max	
D-C Grid Current (no load)	210 mA max	
Plate Dissipation	800 watts max	
Plate Power Input	2250 watts max	
Grid Resistor	10,000 ohms max	

### Typical Operation<sup>4</sup>

Frequency	50 Mc/s
Secondary Transformer Voltage (RMS)	5200 volts
D-C Plate Current (full load) <sup>3</sup>	360 mA
D-C Plate Current (no load) <sup>3</sup>	90 mA
D-C Grid Current (full load) <sup>3</sup>	100 mA
D-C Grid Current (no load) <sup>3</sup>	140 mA
Grid Resistor	1800 ohms
Plate Load Impedance (matched)	3200 ohms
Feedback Ratio (Plate to Grid RF Voltage)	6
Plate Input Power	2080 watts
Plate Dissipation	520 watts
Plate Power Output	1560 watts
Efficiency	75 %

## INDUSTRIAL OSCILLATOR - CLASS C - INTERMITTENT DUTY THREE PHASE RECTIFIED UNFILTERED PLATE SUPPLY

### Maximum Ratings, Absolute Values

Frequency	50 Mc/s max	
D-C Plate Voltage	7000 volts max	
D-C Grid Voltage	-1250 volts max	
D-C Plate Current	1000 mA max	
D-C Grid Current	300 mA max	
D-C Grid Current (no load)	400 mA max	
Plate Dissipation <sup>5</sup>	800 watts max	←
Grid Resistor	10,000 ohms max	
D-C Plate Input	7000 watts max	

### Typical Operation

Frequency	50	50 Mc/s
D-C Plate Voltage	6000	5000 volts
D-C Grid Voltage	-475	-380 volts
Peak RF Grid Voltage	920	900 volts
D-C Plate Current (full load)	950	900 mA
D-C Plate Current (no load)	180	200 mA
D-C Grid Current (full load)	190	190 mA
D-C Grid Current (no load)	390	390 mA
Grid Resistor	2500	2000 ohms
Driving Power (approx)	175	170 watts
Plate Input	5700	4500 watts
Plate Dissipation	1300	1125 watts
Plate Power Output	4400	3375 watts
Efficiency	77	75 %
Plate Load Impedance	3200	2700 ohms
Feedback Ratio (full load)	6	5

<sup>2</sup> At peak of line sinewave

<sup>3</sup> Averaged over line frequency cycle.

<sup>4</sup> Recommended grid blocking capacitor:  
low frequency (1 Mc/s) 1000  $\mu\mu\text{f}$   
high frequency (50 Mc/s) 100  $\mu\mu\text{f}$

<sup>5</sup> See: Intermittent Duty Curves.

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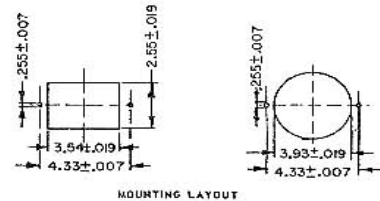
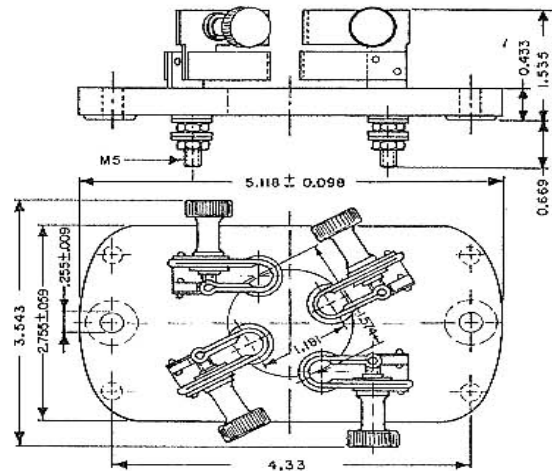
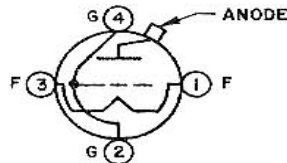
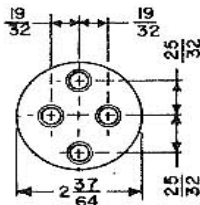
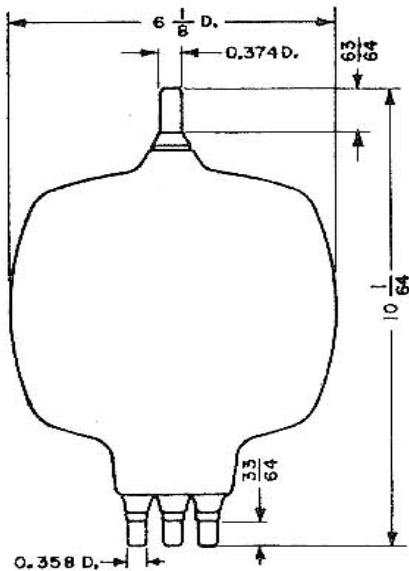
## INDUSTRIAL OSCILLATOR - CLASS C - INTERMITTENT DUTY SINGLE PHASE RECTIFIED UNFILTERED PLATE SUPPLY

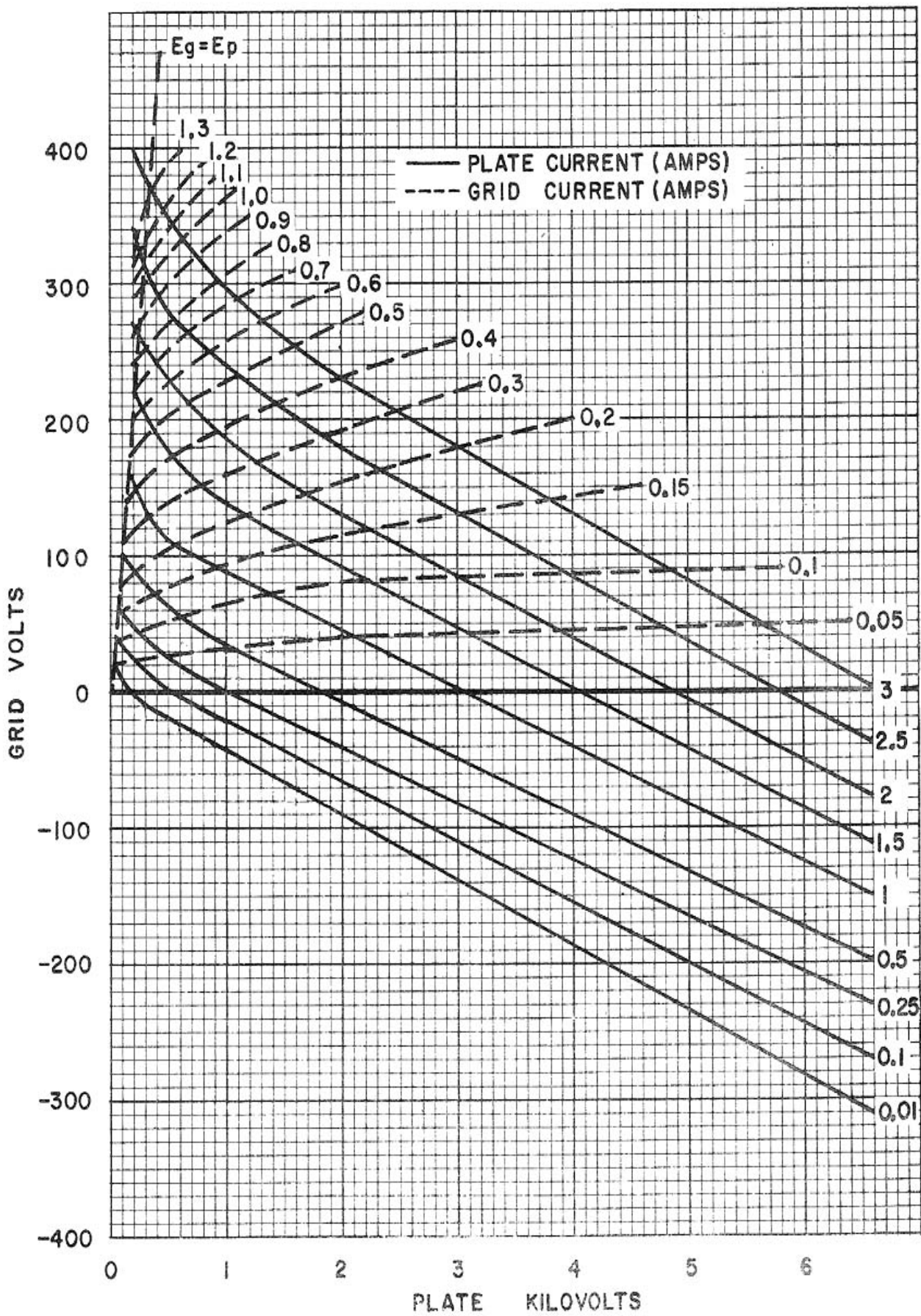
### Maximum Ratings, Absolute Values

Frequency	50 Mc/s max
D-C Plate Voltage	6300 volts max
D-C Grid Voltage	-1250 volts max
D-C Plate Current	900 mA max
D-C Grid Current	270 mA max
D-C Grid Current (no load)	360 mA max
Plate Dissipation <sup>5</sup>	800 watts max
Grid Resistor	10,000 ohms max

### Typical Operation

Frequency	50 Mc/s
D-C Plate Voltage	5000 volts
D-C Grid Voltage	-440 volts
Peak RF Grid Voltage	865 volts
D-C Plate Current	770 mA
D-C Grid Current	175 mA
Grid Resistor	2500 ohms
Driving Power (approx)	169 watts
Plate Load Impedance	3320 ohms
Plate Dissipation	1050 watts
Plate Power Input	4735 watts
Plate Power Output	3685 watts





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## INTERMITTENT SERVICE

