ELECTRONICS

7910

METAL-CERAMIC TRIODE

DESCRIPTION AND RATING

The 7910 is a triode of ceramic-and-metal planar construction primarily intended for use as a plate-pulsed oscillator or amplifier at frequencies up to 7500 megacycles.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.3	Volts
Heater Current‡	0.275	Amperes
Cathode Heating Time, minimum	60	Seconds
Direct Interelectrode Capacitances§		
Grid to Plate: (g to p)	1.0	pf
Input: g to (h + k)	2.1	pf
Output: p to (h + k)	0.02	pf
Heater to Cathode: (h to k)	1.15	pf

MECHANICAL

Operating Position - Any

See Outline Drawing on page 3 for dimensions and electrical connections.

MAXIMUM RATINGS

ABSOLUTE-MAXIMUM VALUES

PLATE-PULSED OSCILLATOR OR AMPLIFIER SERVICE

Peak Positive-Pulse Plate Supply Voltage	1200	Volts
Duty Factor of Plate Pulse¶#	0.001	
Pulse Duration	2.0	Microseconds
Plate Current		
Average#	0.6	Milliamperes
Average During Plate PulseΔ	0.6	Amperes
Negative Grid Voltage		
Average During Plate Pulse	50	Volts
Grid Current		
Average#	0.2	Milliamperes
Average During Plate Pulse	0.2	Amperes
Plate Dissipation#	1.5	Watts
Peak Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	50	Volts
Heater Negative with Respect to Cathode	50	Volts
Envelope Temperature at Hottest Point	250	C

Absolute-Maximum ratings are limiting values of operating and environmental conditions applicable to any electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making no allowance for equipment variations, environmental variations, and the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration and of all other electron devices in the equipment.

The equipment manufacturer should design so that initially and throughout life no absolute-maximum value for the intended service is exceeded with any tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of the tube under consideration and of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	125	Volts
Cathode-Bias Resistor	82	Ohms
Amplification Factor	75	
Transconductance	16000	Micromhos
Plate Current	11.5	Milliamperes

PLATE-PULSED OSCILLATOR SERVICE

Frequency	5900	Megacycles
Heater Voltage	6.3	Volts
Duty Factor	0.001	
Pulse Duration	1.0	Microseconds
Pulse Repetition Rate	1000	Pulses per Second
Peak Positive-Pulse Plate Supply Voltage	1000	Volts
Plate Current		
Average	0.6	Milliamperes
Average During Plate Pulse	600	Milliamperes
Grid Current		
Average	0.2	Milliamperes
Average During Plate Pulse	200	Milliamperes
Useful Power Output		
Average	0.1	Watts
Average During Plate Pulse	100	Watts

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

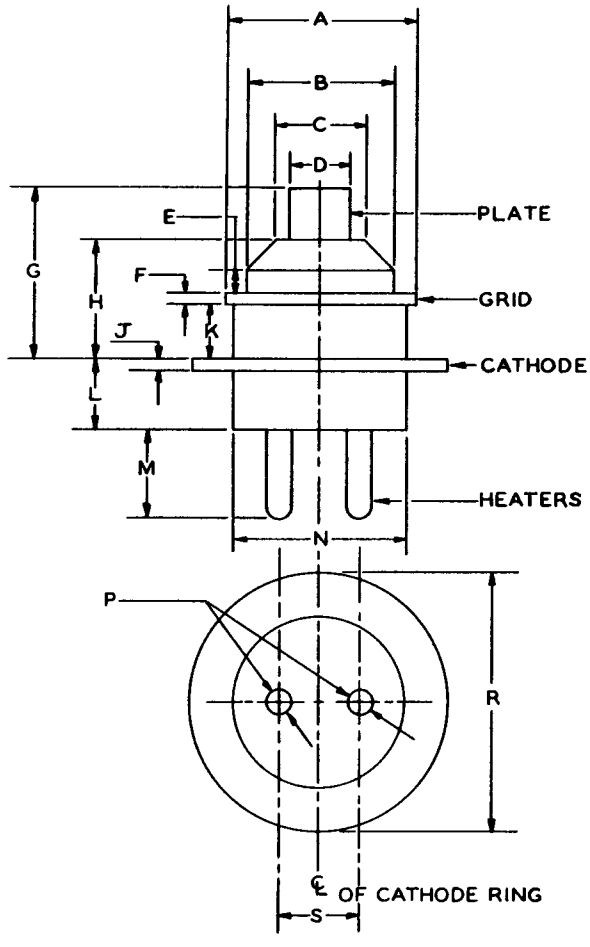
§ Measured with a grounded adapter that provides shielding between external terminals of tube.

¶ Applications with a duty factor greater than 0.001 should be referred to your General Electric tube sales representative for recommendations.

In any 5000 microsecond interval.

Δ The regulation and/or series plate-supply impedance must be such as to limit the peak current, with the tube considered as short circuit, to a maximum of 6.0 amperes.

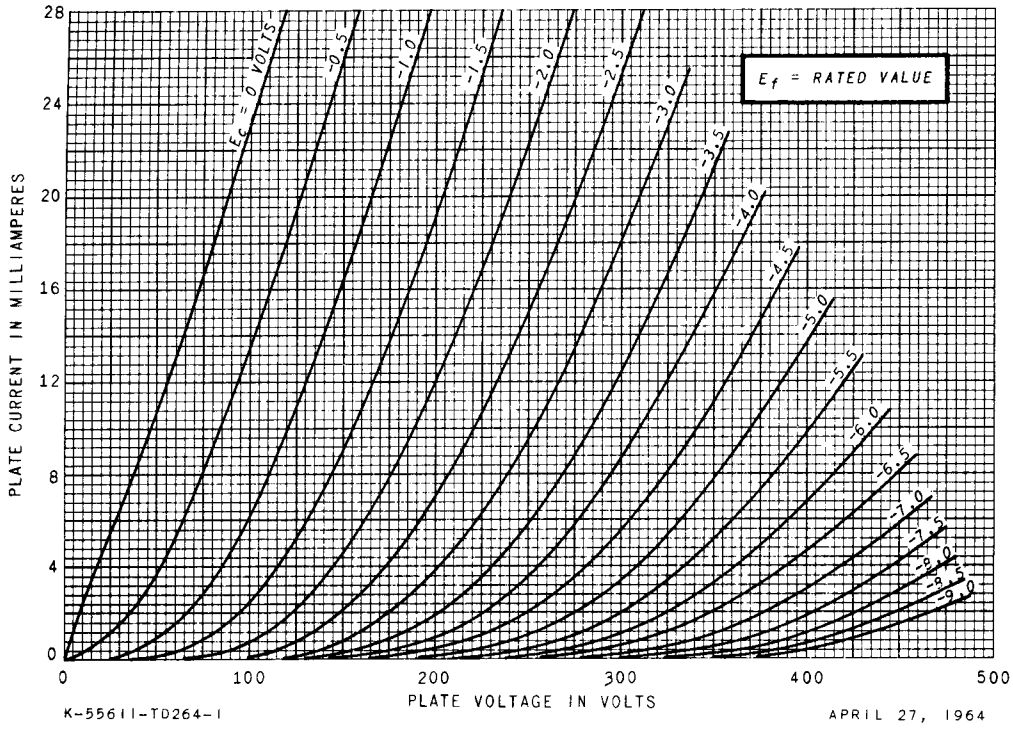
PHYSICAL DIMENSIONS



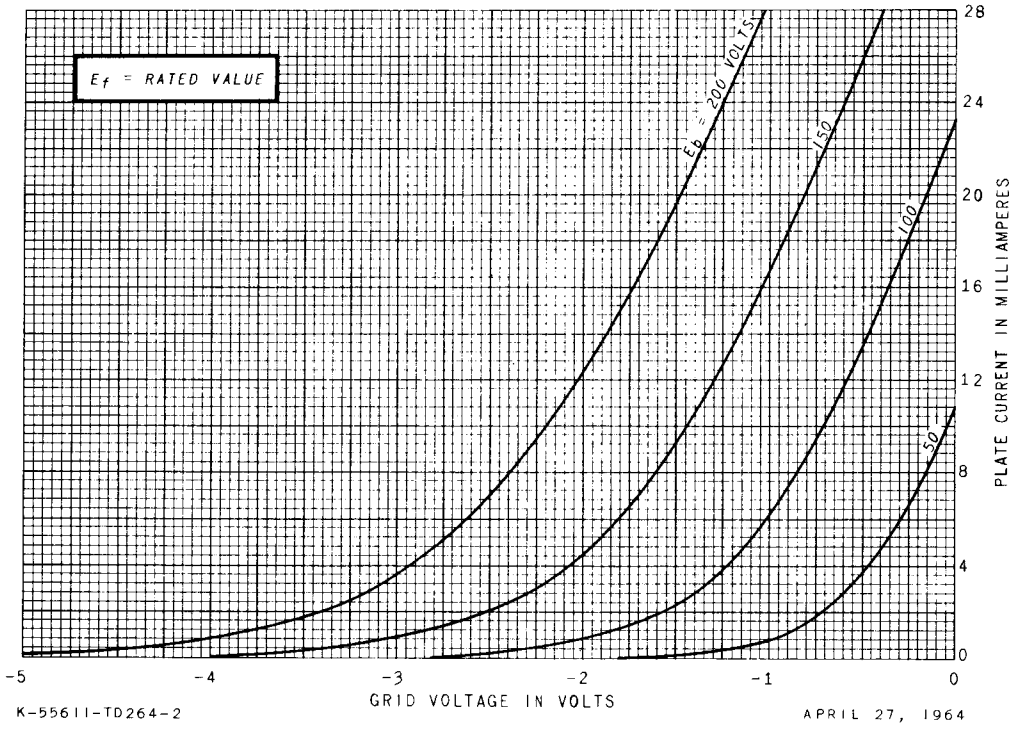
Ref.	INCHES			MILLIMETERS		
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
A	0.357		0.363	9.068		9.220
B			0.285			7.24
C		0.180			4.57	
D	0.108		0.112	2.743		2.845
E		0.040			1.02	
F	0.025		0.031	0.635		0.787
G	0.315		0.335	8.00		8.51
H	0.216		0.232	5.49		5.89
J	0.025		0.031	0.635		0.787
K	0.094		0.102	2.388		2.591
L	0.143		0.157	3.63		3.99
M	0.165		0.185	4.19		4.70
N			0.330			8.38
P	0.048		0.054	1.219		1.372
R	0.476		0.484	12.090		12.294
S	0.130		0.142	3.30		3.61

Note: The millimeter dimensions are derived from the original inch dimensions.

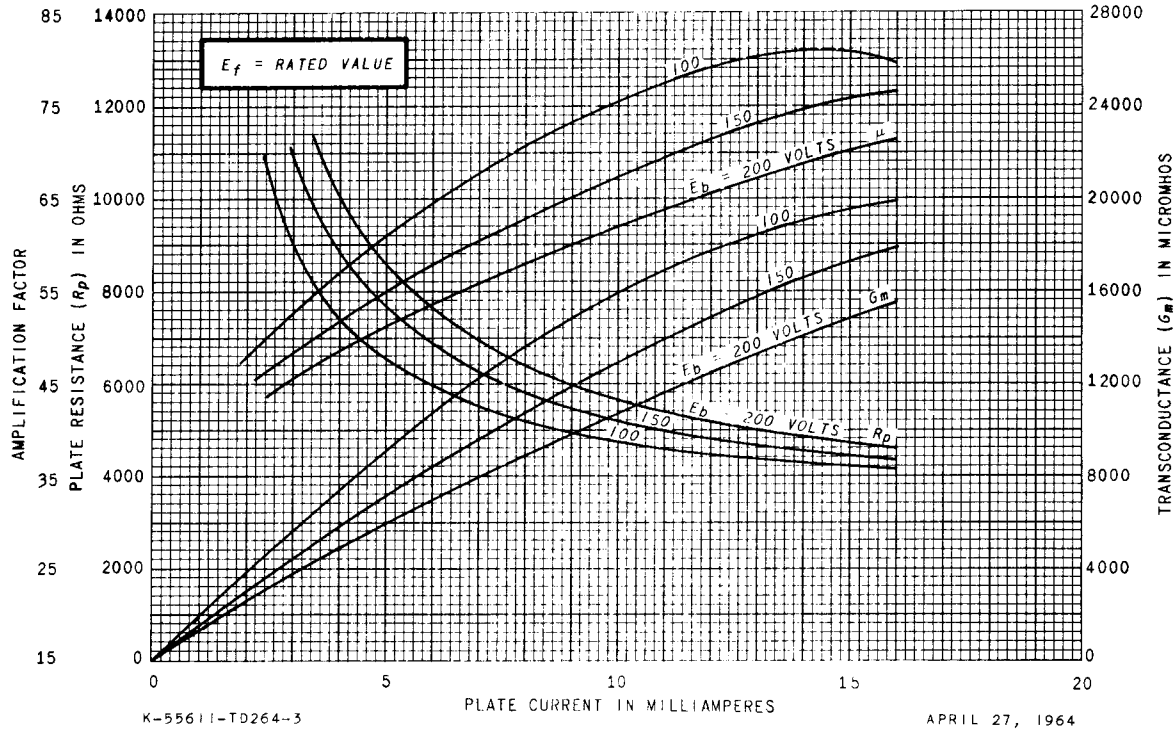
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS



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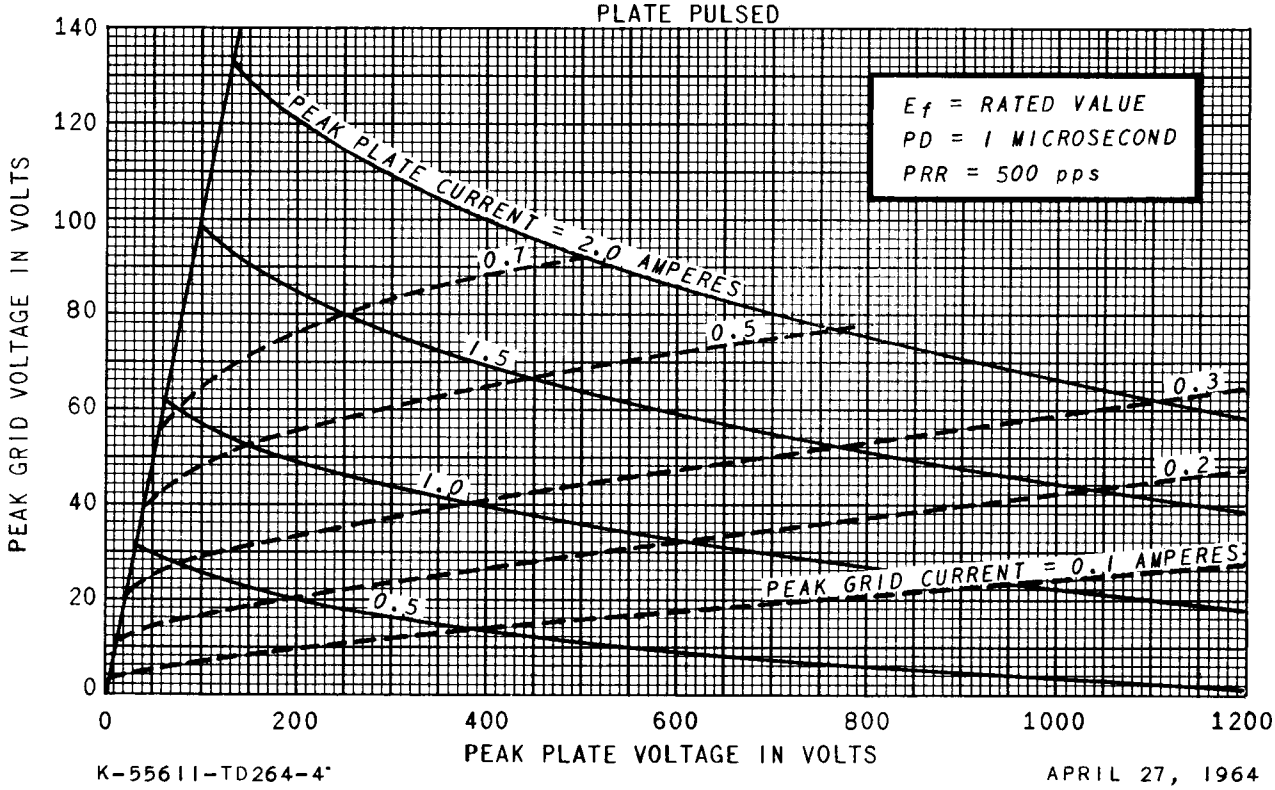
AVERAGE CONSTANT-CURRENT CHARACTERISTICS



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TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky