



ELECTRONIC TUBE REFERENCE

7815R

Voltage - Triode (single high frequency) electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRIODE

Forced-air radiator version of the rugged 7815 ceramic-metal planar triode for high-frequency electronic service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6 V / 1 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
TRANSCONDUCTANCE	0.025 S
AMPLIFICATION FACTOR	100
MAXIMUM PLATE VOLTAGE	3500 V
MAXIMUM PLATE DISSIPATION	10 W
MAXIMUM GRID DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	4.8 A
Ruggedized high-mu planar triode for pulsed oscillator, multiplier, or power-amplifier service.	

Forced-air radiator version of 7815.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1962 EIMAC

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
oscillator, amplifier or frequency multiplier service up to	3	oscillator, amplifier or frequency multiplier service up to 3
voltage regulator service. The	7815	voltage regulator service. The 7815R is normally supplied
The [1]	7815	The 7815 and 7815R feature high mu, high transduc-
The [2]	7815	The 7815 and 7815R feature high mu, high transduc-
Heater: Voltage ot ittt i ittt ettt et eenenn [1]	6	Heater: Voltage ot ittt i ittt ettt et eenenn 6.0: 0.3 V
Heater: Voltage ot ittt i ittt ettt et eenenn [2]	0.3	Heater: Voltage ot ittt i ittt ettt et eenenn 6.0: 0.3 V
Current, at [1]	6	Current, at 6.0 VOItS . . v v v o vt it it e et e e et e e 1.00 A
Current, at [2]	1	Current, at 6.0 VOItS . . v v v o vt it it e et e e et e e 1.00 A
Amplification Factor (Average) o v v i v ittt it ittt s iie e annnn	100	Amplification Factor (Average) o v v i v ittt it ittt s iie e annnn 100
Published value	2	2. Capacitance values are for a cold tube as measured in a special shielded fixture. When the cathode is heated to
the proper temperature, the grid-cathode capacitance will increase from the cold value by approximately	1 pF	the proper temperature, the grid-cathode capacitance will increase from the cold value by approximately 1 pF due

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value [1]	3	3. Measured with one milliampere plate current and a plate voltage of 1 kvdc.
Published value [2]	1	3. Measured with one milliampere plate current and a plate voltage of 1 kvdc.
CW RF POWER AMPLIFIER OR OSCILLATOR OPERATING CONDITIONS FOR [1]	7815	CW RF POWER AMPLIFIER OR OSCILLATOR OPERATING CONDITIONS FOR 7815 AND 7815R IN
CW RF POWER AMPLIFIER OR OSCILLATOR OPERATING CONDITIONS FOR [2]	7815	CW RF POWER AMPLIFIER OR OSCILLATOR OPERATING CONDITIONS FOR 7815 AND 7815R IN
Frequency v	500 MHz	Frequency v 500 MHz
DC PLATE VOLTAGE [1]	2500 V	DC PLATE VOLTAGE 2500 VOLTS Heater Voltage. 6.0 V
DC PLATE VOLTAGE [2]	6 V	DC PLATE VOLTAGE 2500 VOLTS Heater Voltage. 6.0 V
DC GRID VOLTAGE < [1]	150 V	DC GRID VOLTAGE <150 VOLTS DCPlate Voltage 900 Vdc
DC GRID VOLTAGE < [2]	900 V	DC GRID VOLTAGE <150 VOLTS DCPlate Voltage 900 Vdc
INSTANTANEOUS PEAK GRID- DC Grid Voltage ([1]	8	INSTANTANEOUS PEAK GRID- DC Grid Voltage (8pprox} -40 Vdc
INSTANTANEOUS PEAK GRID- DC Grid Voltage ([2]	-40	INSTANTANEOUS PEAK GRID- DC Grid Voltage (8pprox} -40 Vdc
CATHODE VOLTAGE DC Cathode Current	90	CATHODE VOLTAGE DC Cathode Current 90 mAdc
Grid negative to cathode [1]	-400 V	Grid negative to cathode . . . -400 VOLTS DC Grid Current . . .o ov oot 25 mAdc
Grid negative to cathode [2]	25 V	Grid negative to cathode . . . -400 VOLTS DC Grid Current . . .o ov oot 25 mAdc
DC PLATE CURRENT	100 mA	DC PLATE CURRENT 100 MILLIAMPERES setu ower Output. ...
DC GRID CURRENT	50 mA	DC GRID CURRENT 50 MILLIAMPERES Grounded Grid CW Oscillator
Conduction and Convection Heater Voltage	5	Conduction and Convection Heater Voltage. 5.0 V
([1]	7815 W	(7815). o o e e e e 10 WATTS DC Plate Voltage 900 Vdc
([2]	10 W	(7815). o o e e e e 10 WATTS DC Plate Voltage 900 Vdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
([3]	900 W	(7815). o o e e e e 10 WATTS DC Plate Voltage 900 Vdc
Forced Air Cooling ([1]	7815 W	Forced Air Cooling (7815R) . . . 100 WATTS DS Srid Voltage (approx)
Forced Air Cooling ([2]	100 W	Forced Air Cooling (7815R) . . . 100 WATTS DS Srid Voltage (approx)
GRID DISSIPATION (Average} [1]	2 W	GRID DISSIPATION (Average} .. 2 WATTS DC Grid CUrrent « . oo oo ees 10 mAdc
GRID DISSIPATION (Average} [2]	10 W	GRID DISSIPATION (Average} .. 2 WATTS DC Grid CUrrent « . oo oo ees 10 mAdc
FREQUENCY [1]	2.5 GHz	FREQUENCY. 2.5 GHz Useful CW Power Output. 17 W
FREQUENCY [2]	17 GHz	FREQUENCY. 2.5 GHz Useful CW Power Output. 17 W
GRID PULSED OR PLATE PULSED AMPLIFIER OR Grid positive to cathode ,	250 V	GRID PULSED OR PLATE PULSED AMPLIFIER OR Grid positive to cathode , ... 250 VOLTS
OSCILLATOR PULSE PLATE CURRENT	3 A	OSCILLATOR PULSE PLATE CURRENT 3.0 AMPERES
ABSOLUTE MAXIMUM RATINGS PULSE GRID CURRENT	1.8 A	ABSOLUTE MAXIMUM RATINGS PULSE GRID CURRENT 1.8 AMPERES
DC PLATE VOLTAGE Conduction and Convection { [1]	7815 W	DC PLATE VOLTAGE Conduction and Convection {7815} . 10 WATTS
DC PLATE VOLTAGE Conduction and Convection { [2]	10 W	DC PLATE VOLTAGE Conduction and Convection {7815} . 10 WATTS
(PLATE PULSED) « .« oo oo e onn s [1]	3500 V	(PLATE PULSED) « .« oo oo e onn s 3500 VOLTS GRID DISSIPATION (Average) 2 WATTS
(PLATE PULSED) « .« oo oo e onn s [2]	2 V	(PLATE PULSED) « .« oo oo e onn s 3500 VOLTS GRID DISSIPATION (Average) 2 WATTS
DC GRID VOLTAGE . .« « oo v et [1]	-150 V	DC GRID VOLTAGE . .« « oo v et -150 VOLTS FREQUENCY . o v oo o e e e e e e 3.0 GHz
DC GRID VOLTAGE . .« « oo v et [2]	3 V	DC GRID VOLTAGE . .« « oo v et -150 VOLTS FREQUENCY . o v oo o e e e e e e 3.0 GHz
INSTANTANEOUS PEAK GRID- PULSE DURATIONY	6	INSTANTANEOUS PEAK GRID- PULSE DURATIONY 6 us
Grid negative to cathode [1]	700 V	Grid negative to cathode 700 VOLTS DUTY FACTORL . ..o -0033
Grid negative to cathode [2]	-33 V	Grid negative to cathode 700 VOLTS DUTY FACTORL . ..o -0033

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
OPERATING CONDITIONS FOR [1]	7815	OPERATING CONDITIONS FOR 7815 AND 7815R IN Plate Pulsed Oscillator
OPERATING CONDITIONS FOR [2]	7815	OPERATING CONDITIONS FOR 7815 AND 7815R IN Plate Pulsed Oscillator
REPRESENTATIVE APPLICATION Frequency	3 GHz	REPRESENTATIVE APPLICATION Frequency 3.0 GHz
Heater Voltage	5.8	Heater Voltage 5.8 V
Grid Pulsed Amplifier Peak Plate Voltage	3500	Grid Pulsed Amplifier Peak Plate Voltage 3500 v
Frequency [1]	1.1 GHz	Frequency 1.1 GHz Peak Video Plate Current 3.0 a



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1965 Eimac Tube Manual

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1965 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current Range	900 mA–1.05 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode Heating Time	60 s	—
Grid-Cathode Capacitance	6.3 pF	—
Grid-Plate Capacitance	1.98 pF	—
Plate-Cathode Capacitance Maximum	0.035 pF	—
Frequency Maximum	3 GHz	—
Pulse Plate Voltage Maximum	3500 V	—
Pulse Cathode Current Maximum	4.8 A	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Current Maximum	100 mA	—
Pulse Duration Maximum	6 us	—
Duty Factor Maximum	0.0033	—



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1968 General Electric Co

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1968 GENERAL ELECTRIC CO

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	2.05 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1971 Machlette Laboratories

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 MACHLETTE LABORATORIES

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-Plate Capacitance	1.98 pF	—
Grid-Cathode Capacitance	6.3 pF	—
Plate-Cathode Capacitance Maximum	0.035 pF	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode Heating Time	60 s	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate-Pulsed Peak Supply Voltage	3500 V	PlatePulsed
Peak Plate Current	3 A	Pulse
Frequency Maximum	3 GHz	Pulsed
Plate Dissipation	100 W	CW
Typical RF Useful Output	40 W	Frequency=500MHz



SOURCE OPERATING CONDITIONS

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1975 Eimac Tube Manual

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1975 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current Range	900 mA–1.05 A	—
Cathode Heating Time	60 s	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	6.3 pF	—
Output Capacitance	0.035 pF	—
Grid-Plate Capacitance	1.98 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency Maximum	3 GHz	—
Pulse Plate Voltage Maximum	3500 V	PlatePulsed
Pulse Current Maximum	4.8 A	PulseModulator
Pulse Duration Maximum	6 us	—
Duty Factor Maximum	0.0033	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pulse Cathode Current Maximum	4.8 A	—
DC Plate Current Maximum	100 mA	—



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1976 Eimac Tube Manual

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1976 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Current Range	900 mA–1.05 A	—
Cathode Heating Time	60 s	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	6.3 pF	—
Output Capacitance	0.035 pF	—
Grid-Plate Capacitance	1.98 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency Maximum	3 GHz	—
Pulse Plate Voltage Maximum	3500 V	PlatePulsed
Pulse Current Maximum	4.8 A	PulseModulator
Pulse Duration Maximum	6 us	—
Duty Factor Maximum	0.0033	—
Pulse Cathode Current Maximum	4.8 A	—
DC Plate Current Maximum	100 mA	—

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