

ELECTRONIC TUBE REFERENCE

7855

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Rugged high-mu ceramic-metal planar triode for grid-pulsed, plate-pulsed, and continuous-wave service at frequencies to approximately 3 GHz.

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	80
MAXIMUM PLATE VOLTAGE	3500 V
MAXIMUM PLATE DISSIPATION	100 W
MAXIMUM GRID DISSIPATION	2 W
MAXIMUM CATHODE CURRENT	4.8 A
Promoted maximum ratings/characteristics populated from published headings; service-specific values retained in parameters.	

Rugged high-mu ceramic/metal planar triode for grid-pulsed, plate-pulsed, and CW service to 3 GHz.

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
The EIMAC [1]	7855	The EIMAC 7855 and 7855K are ruggedized high-mu
The EIMAC [2]	7855	The EIMAC 7855 and 7855K are ruggedized high-mu
Heater: Voltage o v ittt ittt i an e canasnns [1]	6	Heater: Voltage o v ittt ittt i an e canasnns 6.0:03 V
Heater: Voltage o v ittt ittt i an e canasnns [2]	3	Heater: Voltage o v ittt ittt i an e canasnns 6.0:03 V
Current, at [1]	6	Current, at 6.0 voltS v it ittt i it e ettt e 1.00 A
Current, at [2]	1	Current, at 6.0 voltS v it ittt i it e ettt e 1.00 A
Amplification Factor (Average): ii ittt nnnen	80	Amplification Factor (Average): ii ittt nnnen 80
Published value	2	2. Capacitance values for a cold tube as measured in a special shielded fixture in accordance with Electronic In-
Published value [1]	3	3. Measured with one milliamper plate current and a plate voltage of 1 kVdc.
Published value [2]	1	3. Measured with one milliamper plate current and a plate voltage of 1 kVdc.
DC PLATE VOLTAGE (grid pulsed)	2500 V	DC PLATE VOLTAGE (grid pulsed). . 2500 VOLTS
(plate pulsed) [1]	3500 V	(plate pulsed) 3500 VOLTS Piate Voltage c0.... 2000 vdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
(plate pulsed) [2]	2000 V	(plate pulsed) 3500 VOLTS Plate Voltage c0.... 2000 vdc
DC GRIDVOLTAGE [1]	-150 V	DC GRIDVOLTAGE -150 VOLTS Grid Voltage -75 Vdc
DC GRIDVOLTAGE [2]	-75 V	DC GRIDVOLTAGE -150 VOLTS Grid Voltage -75 Vdc
INSTANTANEOUS PEAK GRID CATHODE VOLTAGE Heater Voltage	5.7	INSTANTANEOUS PEAK GRID CATHODE VOLTAGE Heater Voltage 5.7 V
Grid negative to cathode [1]	-700 V	Grid negative to cathode -700 VOLTS Peak Video Plate Current 1.3 a
Grid negative to cathode [2]	1.3 V	Grid negative to cathode -700 VOLTS Peak Video Plate Current 1.3 a
PULSE PLATE CURRENT [1]	3 A	PULSE PLATE CURRENT 3.0 AMPERES Peak Video Grid Current. 0.8 a
PULSE PLATE CURRENT [2]	800 mA	PULSE PLATE CURRENT 3.0 AMPERES Peak Video Grid Current. 0.8 a
PULSE GRID CURRENT	1.8 A	PULSE GRID CURRENT 1.8 AMPERES Useful Power Output (approx.) . . .
PLATE DISSIPATION{ [1]	7855 W	PLATE DISSIPATION{7855) 100 WATTS Frequency 1.090 GHz
PLATE DISSIPATION{ [2]	100 W	PLATE DISSIPATION{7855) 100 WATTS Frequency 1.090 GHz
PLATE DISSIPATION{ [3]	1.09 W	PLATE DISSIPATION{7855) 100 WATTS Frequency 1.090 GHz
([1]	7856 W	(7856K). . . . 10 WATTS Pulse Duration v v v e v, 0.5 us
([2]	10 W	(7856K). . . . 10 WATTS Pulse Duration v v v e v, 0.5 us
([3]	0.5 W	(7856K). . . . 10 WATTS Pulse Duration v v v e v, 0.5 us
GRID DISSIPATION	2 W	GRID DISSIPATION 2.0 WATTS Duty Factor t
FREQUENCY. ,	3 GHz	FREQUENCY., 3.0 GIGAHERTZ
PULSE DURATIONY	6 us	PULSE DURATIONY. 6 usec
DUTY FACTORY	33	DUTY FACTORY. 0033
PULSE MODULATOR OR PULSE AMPLIFIER DC PLATE CURRENT	100 mA	PULSE MODULATOR OR PULSE AMPLIFIER DC PLATE CURRENT 100 MILLIAMPERES

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SERVICE PLATE DISSIPATION([1])	7855 W	SERVICE PLATE DISSIPATION(7855) 100 WATTS
SERVICE PLATE DISSIPATION([2])	100 W	SERVICE PLATE DISSIPATION(7855) 100 WATTS
MAXIMUM RATINGS/ABSOLUTE VALUES GRID DISSIPATION	1.5 W	MAXIMUM RATINGS/ABSOLUTE VALUES GRID DISSIPATION 1.5 WATTS
PULSE DURATION™	6	PULSE DURATION™ 6 ps
DC PLATE VOLTAGE [1]	2500 V	DC PLATE VOLTAGE 2500 VOLTS DUTY FACTORY. 0033
DC PLATE VOLTAGE [2]	33 V	DC PLATE VOLTAGE 2500 VOLTS DUTY FACTORY. 0033
PEAK PLATE VOLTAGE [1]	3500 V	PEAK PLATE VOLTAGE 3500 VOLTS CUT-OFF MU cvvv v 60
PEAK PLATE VOLTAGE [2]	60 V	PEAK PLATE VOLTAGE 3500 VOLTS CUT-OFF MU cvvv v 60
DCGRIDVOLTAGE	-150 V	DCGRIDVOLTAGE -150 VOLTS
INSTANTANEQUS PEAK GRID-CATHODE VOLTAGE	1	INSTANTANEQUS PEAK GRID-CATHODE VOLTAGE 1. For application requiring longer pulse duration and/
Grid negative to cathode	-750 V	Grid negative to cathode -750 VOLTS or higher duty cycle consult the nearest Varian
PULSE CATHODE CURRENT	4.8 A	PULSE CATHODE CURRENT 4.8 AMPERES duct Manager Eimac-Division of Varian, Salt Lake
Heater: Current at [1]	6 V	Heater: Current at 6.0 volts e e e 0.90 1.05
Heater: Current at [2]	0.9 V	Heater: Current at 6.0 volts e e e 0.90 1.05
Heater: Current at [3]	1.05 V	Heater: Current at 6.0 volts e e e 0.90 1.05
Cathode Heating Time v i iii it i nnenn	60	Cathode Heating Time v i iii it i nnenn 60 --- sec.
Published value	1	1. Capacitance values 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	proper temperature, the grid-cathode capacitance will increase from the cold value by approximately 1 pF due to
Published value	5 A	5 —=—— PEAK GRID CURRENT—AMPERES

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE VOLTAGE (V) CURVE #MA	2376 mA	PLATE VOLTAGE (V) CURVE #MA-2376
PLATE VOLTAGE (V) CURVE #MA	2377 mA	PLATE VOLTAGE (V) CURVE #MA-2377


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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	2 pF	—
Grid-Cathode Capacitance	6.3 pF	—
Plate-Cathode Capacitance Maximum	0.06 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 DATA APPENDIX

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	6.8 pF	—
Output Capacitance	0.04 pF	—
Grid-Plate Capacitance	2 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 Plate Current Maximum	3 A	—
Pulse Grid Current Maximum	1.8 A	—
Typical Pulse Output	750 W	Frequency=1.09GHz



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		
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Heater Current Range	900 mA–1.05 A	—
Cathode Heating Time	60 s	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	6.8 pF	—
Output Capacitance	0.04 pF	—
Grid-Plate Capacitance	2 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 Plate Current Maximum	3 A	—
Pulse Grid Current Maximum	1.8 A	—
Typical Pulse Output	750 W	Frequency=1.09GHz

TUBE TINKER

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and their source documents.

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