



ELECTRONIC TUBE REFERENCE

LPT45

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Machlett high-power directly heated triode for transmitting and RF power service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6 V / 60 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
AMPLIFICATION FACTOR	130
MAXIMUM PLATE DISSIPATION	1000 W
<i>Promoted ratings/characteristics mapped from printed headings; device/service-specific values retained in parameters.</i>	

Refer to Machlett price list. When ordering specify designed primarily for use as switch tubes in hard-Filament Voitage: 6.0 = 5% volts tube pulse modulators for radar applications. They Filament Current: 60 amps can deliver a peak pulse power output of 1.5 mega- watts with less than 5 kilowatts driving power. Filament Starting These tubes incorporate a beamed electrode struc- ture to minimize driving power. This design avoids Amplification Factor: 130

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
tube pulse modulators for radar applications. They Filament Current	60 A	tube pulse modulators for radar applications. They Filament Current: 60 amps
can deliver a peak pulse power output of	1.5	can deliver a peak pulse power output of 1.5 mega-
watts with less than	5 kW	watts with less than 5 kilowatts driving power. Filament Starting
Current, maximum	300 A	Current, maximum: 300 amps
ture to minimize driving power. This design avoids Amplification Factor	130	ture to minimize driving power. This design avoids Amplification Factor: 130
low grid current results in unusually low driving cathode), approx	63.5 MHz	low grid current results in unusually low driving cathode), approx.: 63.5 MHz
When operating at peak voltage in excess of	15	When operating at peak voltage in excess of 15kV,
pressurel	80 cfm	pressurel: 80 cfmt
ure within which the tube is used. Instructions for Static Pressure	0.3	ure within which the tube is used. Instructions for Static Pressure: 0.3" of water
Air Temperature [1]	75 C	Air Temperature: 75°C (167 °F)
Air Temperature [2]	167 C	Air Temperature: 75°C (167 °F)
ma Ray Protection for Energies up to [1]	10 mA	ma Ray Protection for Energies up to 10 MeVv." Temperature: 175°C (347 °F)
ma Ray Protection for Energies up to [2]	175 mA	ma Ray Protection for Energies up to 10 MeVv." Temperature: 175°C (347 °F)
ma Ray Protection for Energies up to [3]	347 mA	ma Ray Protection for Energies up to 10 MeVv." Temperature: 175°C (347 °F)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
gized at [1]	7 V	gized at 7.0 volts for 5 minutes and then reduced to rated temperatures at less than 175 °C (347 °F) under all conditions
gized at [2]	5 V	gized at 7.0 volts for 5 minutes and then reduced to rated temperatures at less than 175 °C (347 °F) under all conditions
gized at [3]	175 V	gized at 7.0 volts for 5 minutes and then reduced to rated temperatures at less than 175 °C (347 °F) under all conditions
gized at [4]	347 V	gized at 7.0 volts for 5 minutes and then reduced to rated temperatures at less than 175 °C (347 °F) under all conditions
minute at rated voltage	3	minute at rated voltage. 3 For air-flow requirements at other temperatures and pres-
DC Piate Voltage [1]	27	DC Piate Voltage 27 kv 32 kv DC Plate Voitage 17 kv 25 kV 31 kV
DC Piate Voltage [2]	32	DC Piate Voltage 27 kv 32 kv DC Plate Voitage 17 kv 25 kV 31 kV
DC Piate Voltage [3]	17	DC Piate Voltage 27 kv 32 kv DC Plate Voitage 17 kv 25 kV 31 kV
DC Piate Voltage [4]	25	DC Piate Voltage 27 kv 32 kv DC Plate Voitage 17 kv 25 kV 31 kV
DC Piate Voltage [5]	31	DC Piate Voltage 27 kv 32 kv DC Plate Voitage 17 kv 25 kV 31 kV
Peak Piate Voitage [1]	32	Peak Piate Voitage 32 kv 34 kv DC Grid Voltage..... -200 v -200 v -360 v
Peak Piate Voitage [2]	34	Peak Piate Voitage 32 kv 34 kv DC Grid Voltage..... -200 v -200 v -360 v
Peak Piate Voitage [3]	-200	Peak Piate Voitage 32 kv 34 kv DC Grid Voltage..... -200 v -200 v -360 v
Peak Piate Voitage [4]	-200	Peak Piate Voitage 32 kv 34 kv DC Grid Voltage..... -200 v -200 v -360 v
Peak Piate Voitage [5]	-360	Peak Piate Voitage 32 kv 34 kv DC Grid Voltage..... -200 v -200 v -360 v
DC Grid Voltage [1]	-600	DC Grid Voltage..... -600 v -600 v Pulse Positive Grid Voltage. 600 v 1200 v 680 v
DC Grid Voltage [2]	-600	DC Grid Voltage..... -600 v -600 v Pulse Positive Grid Voltage. 600 v 1200 v 680 v
DC Grid Voltage [3]	600	DC Grid Voltage..... -600 v -600 v Pulse Positive Grid Voltage. 600 v 1200 v 680 v

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid Voltage [4]	1200	DC Grid Voltage..... -600 v -600 v Pulse Positive Grid Voltage. 600 v 1200 v 680 v
DC Grid Voltage [5]	680	DC Grid Voltage..... -600 v -600 v Pulse Positive Grid Voltage. 600 v 1200 v 680 v
Peak Positive Grid Voltage [1]	1500	Peak Positive Grid Voltage . 1500 v 1500 v Pulse Plate Current. 25 a 65 a 30 a
Peak Positive Grid Voltage [2]	1500	Peak Positive Grid Voltage . 1500 v 1500 v Pulse Plate Current. 25 a 65 a 30 a
Peak Positive Grid Voltage [3]	25	Peak Positive Grid Voltage . 1500 v 1500 v Pulse Plate Current. 25 a 65 a 30 a
Peak Positive Grid Voltage [4]	65	Peak Positive Grid Voltage . 1500 v 1500 v Pulse Plate Current. 25 a 65 a 30 a
Peak Positive Grid Voltage [5]	30	Peak Positive Grid Voltage . 1500 v 1500 v Pulse Plate Current. 25 a 65 a 30 a
Peak Negative Grid Voltage [1]	-1500	Peak Negative Grid Voltage -1500 v -1500 v Pulse Grid Current 1 a 3 a 3 a
Peak Negative Grid Voltage [2]	-1500	Peak Negative Grid Voltage -1500 v -1500 v Pulse Grid Current 1 a 3 a 3 a
Peak Negative Grid Voltage [3]	1	Peak Negative Grid Voltage -1500 v -1500 v Pulse Grid Current 1 a 3 a 3 a
Peak Negative Grid Voltage [4]	3	Peak Negative Grid Voltage -1500 v -1500 v Pulse Grid Current 1 a 3 a 3 a
Peak Negative Grid Voltage [5]	3	Peak Negative Grid Voltage -1500 v -1500 v Pulse Grid Current 1 a 3 a 3 a
Pulse Cathode Current [1]	90 kW	Pulse Cathode Current. 90 a 90 a Pusle Driving Power 0.8 kw 4.5 kw 3.1 kw
Pulse Cathode Current [2]	90 kW	Pulse Cathode Current. 90 a 90 a Pusle Driving Power 0.8 kw 4.5 kw 3.1 kw
Pulse Cathode Current [3]	0.8 kW	Pulse Cathode Current. 90 a 90 a Pusle Driving Power 0.8 kw 4.5 kw 3.1 kw
Pulse Cathode Current [4]	4.5 kW	Pulse Cathode Current. 90 a 90 a Pusle Driving Power 0.8 kw 4.5 kw 3.1 kw
Pulse Cathode Current [5]	3.1 kW	Pulse Cathode Current. 90 a 90 a Pusle Driving Power 0.8 kw 4.5 kw 3.1 kw
DC Piate Current [1]	600 mA	DC Piate Current..... 600 mA 600 mA Pulse Power Output 0.35 Mw 1.35 Mw 0.87 Mw
DC Piate Current [2]	600 mA	DC Piate Current..... 600 mA 600 mA Pulse Power Output 0.35 Mw 1.35 Mw 0.87 Mw
DC Piate Current [3]	0.35 mA	DC Piate Current..... 600 mA 600 mA Pulse Power Output 0.35 Mw 1.35 Mw 0.87 Mw

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Piate Current [4]	1.35 mA	DC Piate Current..... 600 mA 600 mA Pulse Power Output 0.35 Mw 1.35 Mw 0.87 Mw
DC Piate Current [5]	0.87 mA	DC Piate Current..... 600 mA 600 mA Pulse Power Output 0.35 Mw 1.35 Mw 0.87 Mw
Grid Dissipation [1]	25	Grid Dissipation..... 25 W 25 W Piate Output Voltage..... 14 kv 21 kv 29 kv
Grid Dissipation [2]	25	Grid Dissipation..... 25 W 25 W Piate Output Voltage..... 14 kv 21 kv 29 kv
Grid Dissipation [3]	14	Grid Dissipation..... 25 W 25 W Piate Output Voltage..... 14 kv 21 kv 29 kv
Grid Dissipation [4]	21	Grid Dissipation..... 25 W 25 W Piate Output Voltage..... 14 kv 21 kv 29 kv
Grid Dissipation [5]	29	Grid Dissipation..... 25 W 25 W Piate Output Voltage..... 14 kv 21 kv 29 kv
Plate Dissipation [1]	1 kW	Plate Dissipation 1.0 kW 1.0 kW Duty Factor 01 .003 .01
Plate Dissipation [2]	1 kW	Plate Dissipation 1.0 kW 1.0 kW Duty Factor 01 .003 .01
Plate Dissipation [3]	1 kW	Plate Dissipation 1.0 kW 1.0 kW Duty Factor 01 .003 .01
Plate Dissipation [4]	3 kW	Plate Dissipation 1.0 kW 1.0 kW Duty Factor 01 .003 .01
Plate Dissipation [5]	1 kW	Plate Dissipation 1.0 kW 1.0 kW Duty Factor 01 .003 .01
Pulse Duration [1]	10	Pulse Duration 10 psec# 10 psec#
Pulse Duration [2]	10	Pulse Duration 10 psec# 10 psec#
Duty Factor [1]	0.03	Duty Factor 0.03 # 0.03 #
Duty Factor [2]	0.03	Duty Factor 0.03 # 0.03 #

TUBE TINKER

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