



ELECTRONIC TUBE REFERENCE

LPT50

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

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRIODE

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

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	13 V / 205 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
AMPLIFICATION FACTOR	135
MAXIMUM PLATE VOLTAGE	125000 V
MAXIMUM PLATE DISSIPATION	10000 W
Promoted ratings/characteristics mapped from printed headings; device/service-specific values retained in parameters.	

Refer to Machlett price list. When ordering specify signed primarily to operate as a switch tube in Filament Voltage: 13.0 volts hard-tube pulse modulators for radar and similar applications. In this service it can deliver pulse output in the order of 10 Mw, depending on cir- Filament Starting cuitry and performance requirements. Current, maximum: 800 amps The ML-LPT 50 is designed for operation in oil or Resistance: 0.0075 ohm

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
The ML-LPT	50	The ML-LPT 50 is a high voltage, high mu triode de: ELECTRICAL CHARACTERISTICS
signed primarily to operate as a switch tube in Filament Voltage	13 V	signed primarily to operate as a switch tube in Filament Voltage: 13.0 volts
Filament Current	205 A	Filament Current: 205 amps
output in the order of	10	output in the order of 10 Mw, depending on cir-Filament Starting
cuitry and performance requirements. Current, maximum	800 A	cuitry and performance requirements. Current, maximum: 800 amps
The ML-LPT [1]	50	The ML-LPT 50 is designed for operation in oil or Resistance: 0.0075 ohm
The ML-LPT [2]	0.0075	The ML-LPT 50 is designed for operation in oil or Resistance: 0.0075 ohm
utilization of the maximum plate voltage ratings. Amplification Factor	135 mA	utilization of the maximum plate voltage ratings. Amplification Factor: 135
voltage. Where the tube is to be used in series with Grid-Plate	25	voltage. Where the tube is to be used in series with Grid-Plate: 25 pt
the rf load tube, where high stored energy is in- Grid-Filament	80 pF	the rf load tube, where high stored energy is in- Grid-Filament: 80 pf
volved, or where the frequency of kick-outs must Plate-Filament	0.7 pF	volved, or where the frequency of kick-outs must Plate-Filament: 0.7 pf
WARNING Oil Flow for	10 kW	WARNING Oil Flow for 10 kW
Plate Dissipation [1]	30	Plate Dissipation: 30 gal/min (114 i/min.) t

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation [2]	114	Plate Dissipation: 30 gal/min (114 i/min.) t
When operating at peak voltage in excess of	15 mA	When operating at peak voltage in excess of 15 kV, Maximum Bulk Oil
this electron tube may give off x-rays which can be Temperature [1]	75 mA	this electron tube may give off x-rays which can be Temperature: 75°C (167 °F)
this electron tube may give off x-rays which can be Temperature [2]	167 mA	this electron tube may give off x-rays which can be Temperature: 75°C (167 °F)
Standards Handbook [1]	93 C	Standards Handbook 93, "Safety Standard for Non- Dissipation: 75°C (167 °F)
Standards Handbook [2]	75 C	Standards Handbook 93, "Safety Standard for Non- Dissipation: 75°C (167 °F)
Standards Handbook [3]	167 C	Standards Handbook 93, "Safety Standard for Non- Dissipation: 75°C (167 °F)
Council on Radiation Protection and Measurements Temperature [1]	165 C	Council on Radiation Protection and Measurements Temperature: 165 °C (329°F)
Council on Radiation Protection and Measurements Temperature [2]	329 C	Council on Radiation Protection and Measurements Temperature: 165 °C (329°F)
Pulse Modulator or Pulse Amplifier P,urt cmm:i/vr	2 mA	Pulse Modulator or Pulse Amplifier P,urt cmm:i/vr 2 Mam.'f
DCPlateVoltage covinnn	125	DCPlateVoltage covinnn 125 kVi
Peak PlateVoltage	125	Peak PlateVoltage 125 kv
DCGridVoltage 0,	-1500	DCGridVoltage o, -1500 Vv
Peak Negative Grid Voltage	6000	Peak Negative Grid Voltage. - 6000 v
Pulse Cathode Current	175	Pulse Cathode Current 175 a
Grid Dissipation	1000	Grid Dissipation 1000 W
Plate Dissipation ,	10 kW	Plate Dissipation , 10 kWit
Pulse Duration ,	1000	Pulse Duration , 1000 us#
DutyFactor i,	1	DutyFactor i, 01 #
DC Plate Voltage	110	DCPlateVoltage 110 kV
DCGridVoltage coiu	1000	DCGridVoltage coiu.... - 1000 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pulse Positive Grid Voltage	1000	Pulse Positive Grid Voltage 1000 v
PulsePlateCurrent	100	PulsePlateCurrent 100 a
Pulse GridCurrent	20	Pulse GridCurrent 20 a
Pulse DrivingPower	40 kW	Pulse DrivingPower 40 kw
PuisePowerOOutput	10	PuisePowerOOutput 10 Mw
Pulsed Plate Output Voltage	100	Pulsed Plate Output Voltage 100 kv
oil flow in ML oil jacket F	543919	oil flow in ML oil jacket F-543919

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes,
and their source documents.

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