

ELECTRONIC TUBE REFERENCE

DP20

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

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

High-mu hard-tube pulse-modulator switch triode for radar and similar applications, capable of approximately 2 MW pulse output.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION1 Triode	
MAXIMUM PLATE VOLTAGE	92000 V
MAXIMUM PLATE DISSIPATION	1600 W
Promoted ratings/characteristics mapped from printed headings; device/service-specific values retained in parameters.	

The ML-DP20 is 2 high-mu triode designed primarily to stress-free thoriated-tungsten filaments. The tube is designed operate as a switch tube in hard-tube pulse modulators, for for operation in oil or equivalent dielectric liquid, which is radar and similar applications. In this service the tube can required for utilization of the maximum plate voltage rating deliver pulse power output in the order of 2 Mw. of 90 kV. The anode is capable of dissipating 1.6 kW when The cathode of this tube consists of sturdy, self-supporting, cooled by free convection of oil. Note: Data contained herein are based on initial design and test criteria. Before using these data in final equipment designs, coniuлт Machlett for possible revisions.

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
deliver pulse power output in the order of [1]	2 kW	deliver pulse power output in the order of 2 Mw. of 90 kV. The anode is capable of dissipating 1.6 kW when
deliver pulse power output in the order of [2]	90 kW	deliver pulse power output in the order of 2 Mw. of 90 kV. The anode is capable of dissipating 1.6 kW when
deliver pulse power output in the order of [3]	1.6 kW	deliver pulse power output in the order of 2 Mw. of 90 kV. The anode is capable of dissipating 1.6 kW when
Maximum bulk oil temperature	75 mA	Maximum bulk oil temperature 75 °Ct
Maximum Glass Temperature coooooirvirnrcnnnen	165 mA	Maximum Glass Temperature coooooirvirnrcnnnen. 165 °C
DC Plate Voltage o oo	920	DC Plate Voltage o oo 920 kV\$ @ = = I
Peak Plate Voltage [1]	100	Peak Plate Voltage 100 kv\$ GRID — 3)' '
Peak Plate Voltage [2]	-3	Peak Plate Voltage 100 kv\$ GRID — 3)' '
DC Grid Voltage	-1500	DC Grid Voltage —1500 V TERMINAL —~_) @)
Peak Negative Grid Voltage [1]	-2500	Peak Negative Grid Voltage —2500 v ®/ ' 1
Peak Negative Grid Voltage [2]	1	Peak Negative Grid Voltage —2500 v ®/ ' 1
Pulse Cathode Current	35	Pulse Cathode Current 35 a ! @ @)
Grid Dissipation	300	Grid Dissipation 300 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation	1.6 kW	Plate Dissipation 1.6 kw:
Pulse Duration, approximate	1000 mA	Pulse Duration, approximate 1000 pus# @ @) @)
Duty Factor	3	Duty Factor ... 03 #
DC Plate Voltage cc.ooiiiiiii	80	DC Plate Voltage cc.ooiiiiiii 80 kV
DC Grid Voltage –	-600	DC Grid Voltage —-600 V Y
Peak Positive Grid Voltage	1600	Peak Positive Grid Voltage 1600 v
Pulse Plate Current	30	Pulse Plate Current ... 30 a G T '
Pulse Grid Current	10	Pulse Grid Current ... 10 a O
Pulse Driving Power	21 kW	Pulse Driving Power .. 21 kw H
Pulse Power Output	2.2	Pulse Power Output 2.2 Mw O CP)
Pulsed Plate Output Voltage	76	Pulsed Plate Output Voltage 76 kv :
Duty Factor	1	Duty Factor 01 ANODE
Higher plate dissipation is possible with forced-liquid cooling. DIMENSIONS FOR OUTLINE OF ML-DP2	0	Higher plate dissipation is possible with forced-liquid cooling. DIMENSIONS FOR OUTLINE OF ML-DP20
e	50	e 50y - CONSTANT GRID-VOLTAGE CHARACTERISTICS
GRID CURRENT – = = -	19	... GRID CURRENT — = = - .19
i A~	28152 kV	i A~28152 DC PLATE VOLTAGE— KILOVOLTS