



ELECTRONIC TUBE REFERENCE

2C41

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

High-mu planar power triode for plate-pulsed oscillators and RF power amplifiers from lower frequencies into the microwave region. Ring-seal construction minimizes inductance and capacitance for cavity and parallel-line circuits approaching 3 GHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 1.03 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.025 S
AMPLIFICATION FACTOR	100
MAXIMUM PLATE DISSIPATION	35 W
MAXIMUM GRID DISSIPATION	2 W
<i>Promoted fields populated from explicitly published ratings/characteristics; service-specific data retained as parameters.</i>	

The ML-2C41 is a high-mu triode of the planar-electrode suited to cavity type circuits as well as for parallel line opera- type designed for use as a plate-pulsed oscillator, or power tion. The cathode is an indirectly-heated, oxide-coated disc. amplifier in radio transmitting service from low frequency to The anode is forced-air cooled. 3000 Mc. Features include low interelectrode capacitances, The ML-2C41 embodies the highest standards of this inductances and r.f. losses are minimized by a compact, rugged Machlett techniques to assure efficient operation and long life. construction with ring-type seals, making the tube ideally

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
Published value [1]	3000 MHz	3000 Mc. Features include low interelectrode capacitances, The ML-2C41 embodies the highest standards of this
Published value [2]	2 MHz	3000 Mc. Features include low interelectrode capacitances, The ML-2C41 embodies the highest standards of this
Published value [3]	1 MHz	3000 Mc. Features include low interelectrode capacitances, The ML-2C41 embodies the highest standards of this
Heater Current at [1]	6.3 V	Heater Current at 6.3 volts 1.03 amps
Heater Current at [2]	1.03 V	Heater Current at 6.3 volts 1.03 amps
Heater Heating Time, minimum	60 s	Heater Heating Time, minimum 60 secs
Amplification Factor	100	Amplification Factor 100
Maximum Anode Temperature	175 mA	Maximum Anode Temperature 175 °C
For a pulse length of * SRR [1]	3 V	For a pulse length of * SRR 3 usec Filament Current at 6.3 volts (Note 1) . 0.95 1.10 A
For a pulse length of * SRR [2]	6.3 V	For a pulse length of * SRR 3 usec Filament Current at 6.3 volts (Note 1) . 0.95 1.10 A
For a pulse length of * SRR [3]	1 V	For a pulse length of * SRR 3 usec Filament Current at 6.3 volts (Note 1) . 0.95 1.10 A
For a pulse length of * SRR [4]	0.95 V	For a pulse length of * SRR 3 usec Filament Current at 6.3 volts (Note 1) . 0.95 1.10 A
For a pulse length of * SRR [5]	1.1 V	For a pulse length of * SRR 3 usec Filament Current at 6.3 volts (Note 1) . 0.95 1.10 A
Duty Factor * [1]	0.0025 mA	Duty Factor * 0.0025 Plate Current (Note 2) 60 95 mAdc
Duty Factor * [2]	2 mA	Duty Factor * 0.0025 Plate Current (Note 2) 60 95 mAdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Duty Factor * [3]	60 mA	Duty Factor * 0.0025 Plate Current (Note 2) 60 95 mAdc
Duty Factor * [4]	95 mA	Duty Factor * 0.0025 Plate Current (Note 2) 60 95 mAdc
Peak Plate Pulse Supply Voltage [1]	3500 V	Peak Plate Pulse Supply Voltage 3500 volts Cut-off Bias (Note 3) ... — -15 Vdce
Peak Plate Pulse Supply Voltage [2]	3 V	Peak Plate Pulse Supply Voltage 3500 volts Cut-off Bias (Note 3) ... — -15 Vdce
Peak Plate Pulse Supply Voltage [3]	-15 V	Peak Plate Pulse Supply Voltage 3500 volts Cut-off Bias (Note 3) ... — -15 Vdce
Peak Grid Bias Voltage TR [1]	-150 V	Peak Grid Bias Voltage TR -150 wvolts Transconductance 20,000 30,000 umbhos
Peak Grid Bias Voltage TR [2]	20000 V	Peak Grid Bias Voltage TR -150 wvolts Transconductance 20,000 30,000 umbhos
Peak Grid Bias Voltage TR [3]	30000 V	Peak Grid Bias Voltage TR -150 wvolts Transconductance 20,000 30,000 umbhos
Peak Plate Current from Pulse Supply [1]	4 A	Peak Plate Current from Pulse Supply 4 amps Grid-Plate Capacitance 1.86 2.16 uuf
Peak Plate Current from Pulse Supply [2]	1.86 A	Peak Plate Current from Pulse Supply 4 amps Grid-Plate Capacitance 1.86 2.16 uuf
Peak Plate Current from Pulse Supply [3]	2.16 A	Peak Plate Current from Pulse Supply 4 amps Grid-Plate Capacitance 1.86 2.16 uuf
Average Plate Current U [1]	10 mA	Average Plate Current U 10 mA Grid-Cathode Capacitance (Note 4) ... 5.60 7.60 uuf
Average Plate Current U [2]	4 mA	Average Plate Current U 10 mA Grid-Cathode Capacitance (Note 4) ... 5.60 7.60 uuf
Average Plate Current U [3]	5.6 mA	Average Plate Current U 10 mA Grid-Cathode Capacitance (Note 4) ... 5.60 7.60 uuf
Average Plate Current U [4]	7.6 mA	Average Plate Current U 10 mA Grid-Cathode Capacitance (Note 4) ... 5.60 7.60 uuf
Average Grid Current e [1]	6 mA	Average Grid Current e 6 mA Plate-Cathode Capacitance — 035 uuf
Average Grid Current e [2]	35 mA	Average Grid Current e 6 mA Plate-Cathode Capacitance — 035 uuf

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average Plate Dissipation e [1]	35 W	Average Plate Dissipation e 35 watts Plate Tuning Range (Note 5) ... 1960 2030 Mc
Average Plate Dissipation e [2]	5 W	Average Plate Dissipation e 35 watts Plate Tuning Range (Note 5) ... 1960 2030 Mc
Average Plate Dissipation e [3]	1960 W	Average Plate Dissipation e 35 watts Plate Tuning Range (Note 5) ... 1960 2030 Mc
Average Plate Dissipation e [4]	2030 W	Average Plate Dissipation e 35 watts Plate Tuning Range (Note 5) ... 1960 2030 Mc
Average Grid Dissipation e	2 W	Average Grid Dissipation e 2 watts
Frequency N o [1]	3000 MHz	Frequency N o 3000 Mc Note 1— For reduced filament voltage see "Heater Voltage™" section
Frequency N o [2]	1 MHz	Frequency N o 3000 Mc Note 1— For reduced filament voltage see "Heater Voltage™" section
Typical Operation [1]	2500 V	Typical Operation: 2500 Mc Oscillator Note 2 — Measured at a plate voltage of 600 volts and a cathode-
Typical Operation [2]	2 V	Typical Operation: 2500 Mc Oscillator Note 2 — Measured at a plate voltage of 600 volts and a cathode-
Typical Operation [3]	600 V	Typical Operation: 2500 Mc Oscillator Note 2 — Measured at a plate voltage of 600 volts and a cathode-
Duty Factor [1]	0.0025 mA	Duty Factor 0.0025 Note 3 ~— Measured at 1 mA of plate current and a plate voltage
Duty Factor [2]	3 mA	Duty Factor 0.0025 Note 3 ~— Measured at 1 mA of plate current and a plate voltage
Duty Factor [3]	1 mA	Duty Factor 0.0025 Note 3 ~— Measured at 1 mA of plate current and a plate voltage
Peak Plate Pulse Supply Voltage [1]	3500 V	Peak Plate Pulse Supply Voltage . 3500 volts of 600 volts.
Peak Plate Pulse Supply Voltage [2]	600 V	Peak Plate Pulse Supply Voltage . 3500 volts of 600 volts.
Peak Grid Bias Voltage	-100 V	Peak Grid Bias Voltage . -100 volts
Note	4	Note 4 — Capacitance measurements are with the tube cold. When
Peak R-F Grid Voltage	340 V	Peak R-F Grid Voltage 340 volts the filament is heated to proper operating temperature
Peak R-F Plate Voltage T [1]	2500 V	Peak R-F Plate Voltage T 2500 volts the grid-cathode capacitance will increase by about 1 uuf

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak R-F Plate Voltage T [2]	1 V	Peak R-F Plate Voltage T 2500 volts the grid-cathode capacitance will increase by about 1 uuf
Peak Plate Current from Pulse Supply	3 A	Peak Plate Current from Pulse Supply . 3 amps due to thermal expansion of the cathode.
Average Grid Current TR	4.5 mA	Average Grid Current TR 4.5 mA tubes will resonate within the specified frequency range.
Driving Power During Pulse, Approximate	450 mA	Driving Power During Pulse, Approximate 450 watts
Useful Power Output at Peak of Pulse, Approx	2200 W	Useful Power Output at Peak of Pulse, Approx. .. 2200 watts