



ELECTRONIC TUBE REFERENCE

3R202S

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Water-cooled industrial power triode specially designed for industrial heating and high-power RF oscillator service. Its 6 kW plate-dissipation rating supports approximately 11–12 kW class-C output under published conditions.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	5 V / 115 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	12
MAXIMUM PLATE VOLTAGE	7000 V
MAXIMUM PLATE DISSIPATION	6000 W
MAXIMUM GRID DISSIPATION	280 W
Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.	

The 3R202S is a water-cooled industrial triode specially designed for industrial heating applications and high-power RF oscillator service.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1962 ITT

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage [1]	5 V	Filament voltage 5+ 5% v
Filament voltage [2]	5 V	Filament voltage 5+ 5% v
Filament current (nominal)	115 A	Filament current (nominal) 115 A
Mutual conductance (at $V_a =$ [1])	2 mA/V	Mutual conductance (at $V_a = 2\text{kV}$, $V_g = -75\text{V}$) K} mA/vV
Mutual conductance (at $V_a =$ [2])	-75 mA/V	Mutual conductance (at $V_a = 2\text{kV}$, $V_g = -75\text{V}$) K} mA/vV
Grid to anode	30	Grid to anode 30 pF
Grid to filament	60	Grid to filament 60 pF
Anode to filament [1]	1	Anode to filament 1-5 pF
Anode to filament [2]	-5	Anode to filament 1-5 pF
Published value [1]	214	214-LVA-001A Filament connector, smaller
Published value [2]	1	214-LVA-001A Filament connector, smaller
Published value [1]	214	214-LVA-001B Filament connector, larger
Published value [2]	1	214-LVA-001B Filament connector, larger
Published value [1]	214	214-LVA-001C Grid connector
Published value [2]	1	214-LVA-001C Grid connector
direct voltage plus ripple)	7 V	direct voltage plus ripple) 7 kY
Maximum direct anode current	3 mA	Maximum direct anode current 3 A
Maximum direct anode dissipation (continuous)	6 kW	Maximum direct anode dissipation (continuous) 6 kw
Maximum direct grid dissipation (continuous)	280 W	Maximum direct grid dissipation (continuous) 280 w
Maximum direct grid current (Note [1])	1 mA	Maximum direct grid current (Note 1) 700 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum direct grid current (Note [2])	700 mA	Maximum direct grid current (Note 1) 700 mA
Maximum negative grid bias [1]	-1	Maximum negative grid bias —1 500 v
Maximum negative grid bias [2]	500	Maximum negative grid bias —1 500 v
Maximum frequency for above ratings	50 MHz	Maximum frequency for above ratings 50 MHz
Note	1 W	Note 1.—This figure is given for guidance. Grid dissipation is absolute rating.
Direct anode voltage [1]	6 kV	Direct anode voltage 6 65 kV
Direct anode voltage [2]	65 kV	Direct anode voltage 6 65 kV
Direct grid voltage [1]	-670 V	Direct grid voltage —670 —770 v
Direct grid voltage [2]	-770 V	Direct grid voltage —670 —770 v
Direct anode current [1]	2 A	Direct anode current 2-5 3 A
Direct anode current [2]	-5 A	Direct anode current 2-5 3 A
Direct anode current [3]	3 A	Direct anode current 2-5 3 A
Peak r.f. grid voltage [1]	950 V	Peak r.f. grid voltage 950 1050 v
Peak r.f. grid voltage [2]	1050 V	Peak r.f. grid voltage 950 1050 v
Direct grid current (Note [1])	2 mA	Direct grid current (Note 2) 450 (650) 350 (500) mA
Direct grid current (Note [2])	450 mA	Direct grid current (Note 2) 450 (650) 350 (500) mA
Direct grid current (Note [3])	650 mA	Direct grid current (Note 2) 450 (650) 350 (500) mA
Direct grid current (Note [4])	350 mA	Direct grid current (Note 2) 450 (650) 350 (500) mA
Direct grid current (Note [5])	500 mA	Direct grid current (Note 2) 450 (650) 350 (500) mA
Grid dissipation (Note [1])	2 W	Grid dissipation (Note 2) 140 115 wW
Grid dissipation (Note [2])	140 W	Grid dissipation (Note 2) 140 115 wW
Grid dissipation (Note [3])	115 W	Grid dissipation (Note 2) 140 115 wW
Grid resistor [1]	1	Grid resistor 1-5 22 kQ
Grid resistor [2]	-5	Grid resistor 1-5 22 kQ
Grid resistor [3]	22	Grid resistor 1-5 22 kQ
Power input [1]	15 kW	Power input 15 19-5 kW

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power input [2]	19 kW	Power input 15 19-5 kW
Power input [3]	-5 kW	Power input 15 19-5 kW
Output power (oscillator) [1]	11 kW	Output power (oscillator) 11-5 141 kw
Output power (oscillator) [2]	-5 kW	Output power (oscillator) 11-5 141 kw
Output power (oscillator) [3]	141 kW	Output power (oscillator) 11-5 141 kw
Power into load at [1]	85 kW	Power into load at 85 per cent transfer efficiency 10 12 kw
Power into load at [2]	10 kW	Power into load at 85 per cent transfer efficiency 10 12 kw
Power into load at [3]	12 kW	Power into load at 85 per cent transfer efficiency 10 12 kw
Maximum direct anode voltage	7 kV	Maximum direct anode voltage 7 kV
Maximum direct anode dissipation (intermittent)	7 kW	Maximum direct anode dissipation (intermittent) 7 kw
Maximum direct anode dissipation (continuous)	6 kW	Maximum direct anode dissipation (continuous) 6 kW
Maximum direct grid dissipation (continuous)	280 W	Maximum direct grid dissipation (continuous) 280 W
Maximum direct grid voltage [1]	-1 kV	Maximum direct grid voltage —1-5 kv
Maximum direct grid voltage [2]	-5 kV	Maximum direct grid voltage —1-5 kv
Direct anode voltage	5 kV	Direct anode voltage 5 kv
Direct grid voltage	-350 V	Direct grid voltage —350 \"
Direct anode current (zero signal) [1]	0 mA	Direct anode current (zero signal) 0-5 A
Direct anode current (zero signal) [2]	-5 A	Direct anode current (zero signal) 0-5 A
Direct anode current (maximum signal) [1]	1 mA	Direct anode current (maximum signal) 1-9 A
Direct anode current (maximum signal) [2]	-9 mA	Direct anode current (maximum signal) 1-9 A
Load resistor, anode-to-anode [1]	2	Load resistor, anode-to-anode 2-7 k2
Load resistor, anode-to-anode [2]	-7	Load resistor, anode-to-anode 2-7 k2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak a.f. grid to grid voltage [1]	920 V	Peak a.f. grid to grid voltage 920 \2
Peak a.f. grid to grid voltage [2]	2 V	Peak a.f. grid to grid voltage 920 \2
Grid drive power, approximately	75 W	Grid drive power, approximately 75 w
Direct grid current	84 mA	Direct grid current 84 mA
Direct grid dissipation [1]	7 W	Direct grid dissipation 7-6 w
Direct grid dissipation [2]	-6 W	Direct grid dissipation 7-6 w
Output power	12 kW	Output power 12 kw
E	7 kV	E 7/ v ANODE VOLTAGE (kV)
Published value	1	1. FILAMENT : N PATH FOR
Published value [1]	2	2. FILAMENT N' . 41
Published value [2]	41	2. FILAMENT N' . 41
Published value [1]	3	3. GRID 1 ' C]
Published value [2]	1	3. GRID 1 ' C]
Published value	4	4. ANODE L2

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