



ELECTRONIC TUBE REFERENCE

RS2031V

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Vapor-cooled low-mu Siemens transmitting triode particularly suited to modulator service requiring low grid current. Rated for approximately 110 kW plate dissipation and 12.5 kV plate voltage for very-high-power modulation stages.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	17 V / 156 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.078 S
AMPLIFICATION FACTOR	13.5
MAXIMUM PLATE VOLTAGE	12500 V
MAXIMUM PLATE DISSIPATION	110000 W
MAXIMUM GRID DISSIPATION	1100 W
MAXIMUM CATHODE CURRENT	25 A
Maximum ratings promoted from published rating tables; additional condition-specific values preserved in parameters.	

Vapor-cooled triode with coaxial grid lead-through. Due to the low amplification factor this tube is particularly suitable for use in modulators with low grid current. Emission current at $U_A = U_G = 750 \text{ V}$ $I_{em} 125 \text{ A}$ Amplification factor at $U_A = 4 \text{ to } 10 \text{ kV}$, $I_A = 5 \text{ A}$ $\mu 13,5$

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Siemens

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

1963 SIEMENS

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	13.5	—
Transconductance	78000 μ S	—
Emission current at $U_A = U_G = 750$ V	125 A V	—
Amplification factor at $U_A = 10$ kV, $I_A = 5$ A μ 13,5 kV 4	—	—
Transconductance at $U_A = 4$ kV, $I_A = 5$ A	78 mA/V kV	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	17 V V	—
Heater current	≈ 156 A A	—
Frequency	30 MHz MHz	—
Anode voltage (dc)	12,5 kV kV	—
Grid voltage(dc)	— 1200 V V	—
Cathode current (dc)	25 A A	—
Peak cathode current	100 A A	—
Anode dissipation	110 kW kW	—
Grid dissipation	1100 W W	—
Frequency	$\leq 30 \leq 30$ MHz MHz	—
Output power	165 110 kW 1) kW	—
Anode voltage (dc)	10 kV kV	—
Grid voltage (dc)	— 900 — 730 V V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak control grid voltage (ac)	1300 1100 V V	—
Zero signal anode current (dc)	1,5 1,5 A A	—
Anode current (dc)	18,8 15,3 A A	—
Grid current (dc)	1,6 1,3 A A	—
Anode input power	226 153 kW A	—
Drive power	2,0 1,3 kW 1) kW	—
Anode dissipation	43 kW kW	—
Grid dissipation	600 350 W W	—
Efficiency	72 %	—
Anode load resistance	370 370 Ω Ω	—
Transmitter Triode	2031 V V	—
Frequency	30 MHz MHz	—
Anode voltage (dc)	12,5 kV kV	—
Grid voltage (dc)	— 1500 V V	—
Cathode current (dc)	25 A A	—
Peak cathode current	100 A A	—
Anode dissipation	110 kW kW	—
Grid dissipation	1100 W W	—
Frequency	$\leq 30 \leq 30$ MHz MHz	—
Output power	165 110 kW 1) kW	—
Anode voltage (dc)	10 kV kV	—
Grid voltage (dc)	— 1350 — 1200 V V	—
Peak grid voltage (ac)	1830 1630 V V	—
Anode current (dc)	13,8 A A	—
Grid current (dc)	2,0 1,8 A A	—
Anode input power	204 138 kW A	—
Drive power	3,3 2,7 kW 1) kW	—
Anode dissipation	28 kW kW	—
Grid dissipation	600 500 W W	—
Efficiency	80 %	—
Anode load resistance	370 370 Ω Ω	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transmitter Triode	2031 V V	—
Anode voltage (dc)	12 kV kV	—
Grid voltage (dc)	— 1200 V V	—
Cathode current (dc)	25 A A	—
Peak cathode current	100 A A	—
Anode dissipation	110 kW kW	—
Grid dissipation	1100 W W	—
300	200 kW kW	—
Output power	240 0 160 kW kW	—
Anode voltage (dc)	11 11 11 11 kV kV	—
Grid voltage (dc)	— 810 — 810 — 830 — 830 V V	—
Peak control grid voltage (ac)	2120 0 1980 V V	—
between	2 tubes	—
Anode current (dc)	2 × 1,5 2 × 18 2×1 2 × 11,7 A A	—
Grid current (dc)	2 × 0,6 0 2 × 0,25 A A	—
Peak grid current	2 × 4,3 0 2 × 2,2 A A	—
Anode input power	2 × 16,5 2 × 198 2 × 11 2 × 129 kW A	—
Drive power	2 × 600 0 2 × 180 W W	—
Anode dissipation	2 × 16,5 2 × 78 2 × 11 2 × 49 kW kW	—
Grid dissipation	2 × 120 0 2 × 40 W W	—
Efficiency η —	61 — 62 %	—
Effective load resistance (anode to anode) RAA —	600 — 950 Ω Ω	—
Transmitter Triode	2031 V V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode/grid	≈ 175 pF pF	—
Cathode/anode	≈ 8,0 pF 1) pF	—
Grid/anode	≈ 76 pF pF	—
Transmitter Triode	2031 V V	—

COOLING		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
(PA + PG + 0,8 PF)	114 kW PF	—
Equivalent thermal	6820 kJ/min (1640 kcal/min)	—
at returning water temperature	20 °C approx. 2,7 l/min l/min	—
at returning water temperature	90 °C approx. 3,1 l/min l/min	—
at returning water temperature	20 °C approx. 4,5 m 3/min	—
at returning water temperature	90 °C approx. 5,1 m 3/min	—
Transmitter Triode	2031 V V	—

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