



ELECTRONIC TUBE REFERENCE

RS2041V

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Very-high-power vapor-cooled Siemens coaxial triode for large broadcast transmitters and modulators. Rated for approximately 220 kW plate dissipation and 19 kV plate voltage, supporting transmitter installations in the hundreds-of-kilowatts class.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	21 V / 400 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.215 S
AMPLIFICATION FACTOR	35
MAXIMUM PLATE VOLTAGE	19000 V
MAXIMUM PLATE DISSIPATION	220000 W
MAXIMUM GRID DISSIPATION	7000 W
MAXIMUM CATHODE CURRENT	60 A
Maximum ratings promoted from published rating tables; additional condition-specific values preserved in parameters.	

Coaxial triode in metal-glass-ceramic technology, vapor-cooled, suitable for broadcast transmitters up to 300 kW medium and short wave, for modulators in transmitters up to 600 kW and for RF Emission current at $U_A = U_G = 1000\text{ V}$ $I_{em} 380\text{ A}$ Amplification factor at $U_A = 4\text{ to }10\text{ kV}$, $I_A = 10\text{ A}$ $\mu 35$

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	35	—
Transconductance	215000 μ S	—
Emission current at $U_A = U_G = 1000$ V	380 A V	—
Amplification factor at $U_A = 10$ kV, $I_A = 10$ A μ 35 kV 4		—
Transconductance at $U_A = 4$ kV, $I_A = 10$ A	215 mA/V kV	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	21 V V	—
Heater current	$\approx$ 400 A A	—
Frequency	10 30 MHz MHz	—
Anode voltage (dc)	19 15 kV kV	—
Grid voltage (dc)	– 1200 – 1200 V V	—
Cathode current (dc)	60 60 A A	—
Peak cathode current	340 340 A A	—
Anode dissipation	220 220 kW kW	—
Grid dissipation	7 5 kW kW	—
Frequency	$\leq$ 10 $\leq$ 30 $\leq$ 30 MHz MHz	—
Output power	660 530 440 kW 1) kW	—
Anode voltage (dc)	14 12 kV kV	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid voltage (dc)	– 1000 – 800 – 800 V V	—
Peak grid voltage (ac)	1620 1420 1420 V V	—
Anode current (dc)	46 46 A A	—
Grid current (dc)	7,5 7,5 7,5 A A	—
Anode input power	810 650 550 kW A	—
Drive power	9,6 9,6 kW 1) kW	—
Anode dissipation	150 120 110 kW kW	—
Grid dissipation	3,5 3,6 3,6 kW kW	—
Efficiency	81 80 %	—
Anode load resistance	220 160 135 Ω Ω	—
Transmitter Triode	2041 V V	—
Frequency	10 MHz MHz	—
Anode voltage (dc)	11,5 kV kV	—
Grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	60 A A	—
Peak cathode current	380 A A	—
Anode dissipation	220 kW kW	—
Grid dissipation	7,0 kW kW	—
Frequency	$\leq 10 \leq 10$ MHz MHz	—
Carrier power	330 280 kW 1) kW	—
Anode voltage (dc)	11 11 kV kV	—
Grid bias (dc), fixed	– 530 – 430 V V	—
Grid resistance	20 26 Ω Ω	—
Peak grid voltage (ac)	1240 1120 V V	—
Anode current (dc)	37 31,5 A A	—
Grid current (dc)	8,5 8,0 A A	—
Anode input power	407 348 kW A	—
Drive power	9,5 8,0 kW 1) kW	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode dissipation	77 68 kW 2) kW	—
Grid dissipation	3,6 2,9 kW kW	—
Efficiency	81 81 %	—
Anode load resistance	160 200 Ω Ω	—
Modulation factor	100 100 %	—
Modulation power	204 174 kW kW	—
Grid dissipation at modulation	5,2 4,5 kW 3) kW	—
Peak grid voltage (ac)	1860 1680 V 4) V	—
Grid current	16 15 A 4) A	—
Drive power	28 24 kW1)4)	—
modulation the anode dissipation increases	1,5 times the power dissipation stated for the carrier value.	—
Transmitter Triode	2041 V V	—
Frequency	30 MHz MHz	—
Anode voltage (dc)	11,5 kV kV	—
Grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	60 A A	—
Peak cathode current	380 A A	—
Anode dissipation	220 kW kW	—
Grid dissipation	5,0 kW kW	—
Frequency	$\leq$ 30 MHz MHz	—
Carrier power	252 + 28 2) kW 1) kW	—
Anode voltage (dc)	11 kV kV	—
Grid bias (dc), fixed	– 370 V V	—
Grid resistance	33 Ω Ω	—
Peak grid voltage (ac)	1040 V V	—
Anode current (dc)	28,4 A A	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid current (dc)	7,0 A A	—
Anode input power	312 kW A	—
Drive power	6,6 + 28 2) kW 1) kW	—
Anode dissipation	60 kW 3) kW	—
Grid dissipation	2,4 kW kW	—
Efficiency	81 %	—
Anode load resistance	210 Ω Ω	—
Modulation factor	100 %	—
Modulation power	156 kW kW	—
Grid dissipation at modulation	3,4 kW 4) kW	—
Peak grid voltage (ac)	1570 V 5) V	—
Grid current (dc)	13 A 5) A	—
Drive power	19 + 86 2) kW1)5)	—
modulation the anode dissipation increases	1,5 times the power dissipation stated for the carrier value.	—
Transmitter Triode	2041 V V	—
Anode voltage (dc)	15 kV kV	—
Grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	60 A A	—
Peak cathode current	340 A A	—
Anode dissipation	220 kW kW	—
Grid dissipation	7,0 kW kW	—
Output power	0 410 kW kW	—
Anode voltage (dc)	11 11 kV kV	—
Grid voltage (dc)	– 280 – 280 V V	—
Peak control grid voltage (ac)	0 1140 V V	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode/grid	$\approx 330 \text{ pF}$	—
Cathode/anode	$\approx 6,5 \text{ pF}$ 1) pF	—
Grid/anode	$\approx 135 \text{ pF}$	—
Transmitter Triode	2041 V V	—

TUBE TINKER

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