



ELECTRONIC TUBE REFERENCE

RS2042SK

Power - Tetrode (NOT beam) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
TETRODE

High-power transmitting tetrode designed primarily for broadcast, FM, VHF, medium-wave, or short-wave transmitter RF power service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	8.5 V / 920 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Tetrode	
TRANSCONDUCTANCE	0.22 S
AMPLIFICATION FACTOR	4.5
MAXIMUM PLATE VOLTAGE	23000 V
MAXIMUM SCREEN VOLTAGE	2200 V
MAXIMUM PLATE DISSIPATION	300000 W
MAXIMUM SCREEN DISSIPATION	5000 W
MAXIMUM GRID DISSIPATION	1500 W
MAXIMUM CATHODE CURRENT	50 A
<i>Maximum ratings promoted from published rating tables; additional condition-specific values preserved in parameters.</i>	

Coaxial metal-ceramic tetrode, vapor-condensation-cooled. The version RS 2042 SK is particularly suitable for broadcast transmitters up to 300 kW medium wave and 250 kW short wave, for grid-current

free operated modulators in transmitters up to 600 kW, and for use as switching tube in PDM transmitters up to 600 kW.

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 · Tetrode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	4.5	—
Transconductance	220000 μ S	—
Emission current at $U_A = U_{G2}$ = $U_{G1} = 600$ V	300 A V	—
Amplification factor of screen grid	4,5	—
at $U_A = 6$ kV, $U_{G2} = 800$	1200 V, I A = 20 A kV	—
Transconductance	220 mA/V mA/V	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	8,5 V V	—
Heater current	$\approx$ 920 A A	—
Permissible starting current	$\leq$ 3000 A A	—
Frequency	55 MHz MHz	—
Anode voltage (dc)	23 kV kV	—
Screen grid voltage (dc)	1600 V V	—
Control grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	50 A A	—
Peak cathode current	300 A A	—
Anode dissipation	300 kW 3) kW	—
Screen grid dissipation	4,0 kW kW	—
Control grid dissipation	1,5 kW kW	—
Frequency	50 MHz MHz	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output power	320 + 13,7 2) kW 1) kW	—
Anode voltage (dc)	12 kV kV	—
Screen grid voltage (dc)	1100 V V	—
Control grid voltage (dc)	– 400 V V	—
Peak control grid voltage (ac)	540 V V	—
Anode current (dc)	40,5 A A	—
Screen grid current (dc)	1,0 A A	—
Control grid current (dc)	0,6 A A	—
Anode input power	485 kW A	—
Drive power	0,3 + 13,7 2) kW 1) kW	—
Anode dissipation	165 kW kW	—
Screen grid dissipation	1100 W W	—
Control grid dissipation	60 W W	—
Efficiency	66 %	—
Anode load resistance	181 Ω Ω	—
Transmitter Tetrode	2042 HF	—
Frequency	150 MHz MHz	—
Anode voltage (dc)	17 kV kV	—
Screen grid voltage (dc)	1600 V V	—
Control grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	50 A A	—
Peak cathode current	300 A A	—
Anode dissipation	300 kW 3) kW	—
Screen grid dissipation	4,0 kW kW	—
Control grid dissipation	1,5 kW kW	—
Frequency	$\leq$ 150 MHz MHz	—
Pulse duration	$0,4 \times 10^{-3}$ s	—
Pulse separation	$0,6 \times 10^{-3}$ s	—
Pulse output power	400 + 16 2) kW 1) kW	—
Anode voltage (dc)	15 kV kV	—
Screen grid voltage (dc)	1100 V V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Control grid voltage (dc)	– 430 V V	—
Peak pulse control grid voltage (ac)	250 V V	—
Pulse anode current (dc)	42 A A	—
Pulse screen grid current	1,0 A A	—
Pulse control grid current (dc)	0,7 A A	—
Pulse anode input power	630 kW A	—
Pulse drive power	16 kW 1) kW	—
Pulse anode dissipation	230 kW kW	—
Pulse screen grid dissipation	1100 W W	—
Pulse control grid dissipation	60 W W	—
Pulse efficiency	63 %	—
Anode load resistance	190 Ω Ω	—
Transmitter Tetrode	2042 SK	—
Frequency	30 MHz MHz	—
Anode voltage (dc)	15 V V	—
Screen grid voltage (dc)	2200 V V	—
Control grid voltage (dc)	– 1200 V V	—
Cathode current (dc)	50 A A	—
Peak cathode current	300 A A	—
Anode dissipation	300 kW 5) kW	—
Screen grid dissipation	5,0 kW kW	—
Control grid dissipation	1,5 kW kW	—
Frequency	$\leq$ 30 MHz MHz	—
Carrier power	325 kW 1) kW	—
Anode voltage (dc)	12 kV kV	—
Screen grid voltage (dc)	1100 V V	—
Control grid bias (dc), fixed	– 450 V V	—
Control grid resistance	65 Ω Ω	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak control grid voltage (ac)	900 V V	—
Anode current (dc)	33 A A	—
Screen grid current (dc)	2,5 A A	—
Control grid current (dc)	4,0 A A	—
Anode input power	396 kW A	—
Drive power	3,5 kW 1) kW	—
Anode dissipation	71 kW 2) kW	—
Screen grid dissipation	2,75 kW kW	—
Control grid dissipation	0,7 kW kW	—
Efficiency	82 %	—
Anode load resistance	180 Ω Ω	—
Modulation factor	100 %	—
Peak screen grid voltage (ac)	650 V V	—
Modulation power	208 kW kW	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode/control grid	$\approx$ 315 pF pF	—
Cathode/screen grid	$\approx$ 35 pF pF	—
Cathode/anode	$\approx$ 1,1 pF 1) pF	—
Control grid/screen grid	$\approx$ 450 pF pF	—
Control grid/anode	$\approx$ 4,5 pF 1) pF	—
Screen grid/anode	$\approx$ 100 pF pF	—
LL electrolytic target	1/ 4" hose RÖE17 Q81-X512	—
Transmitter Tetrode	2042 HF	—