ELECTRONIC TUBE REFERENCE

RS2042HF

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

SECTION1 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

Maximum ratings promoted from published rating tables; additional condition-specific values preserved in parameters.

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

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 µS**	—
Emission current at UA = UG2 = UG1 = 600 V	**300 A V**	—
Amplification factor of screen grid	**4,5**	—
at UA = 6 kV, UG2 = 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	**≈ 920 A A**	—
Permissible starting current	**≤ 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	**≤ 150 MHz MHz**	—
Pulse duration	**0,4 × 10–3 s**	—
Pulse seperation	**0,6 × 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	**≤ 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	**≈ 315 pF pF**	—
Cathode/screen grid	**≈ 35 pF pF**	—
Cathode/anode	**≈ 1,1 pF 1) pF**	—
Control grid/screen grid	**≈ 450 pF pF**	—
Control grid/anode	**≈ 4,5 pF 1) pF**	—
Screen grid/anode	**≈ 100 pF pF**	—
LL electrolytic target	**1/ 4″ hose RöEl7 Q81-X512**	—
Transmitter Tetrode	**2042 HF**	—

Tube Tinker

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