

Transmitting
and generating tubes
supplement

February 1964

contens

Transmitting and generating tubes

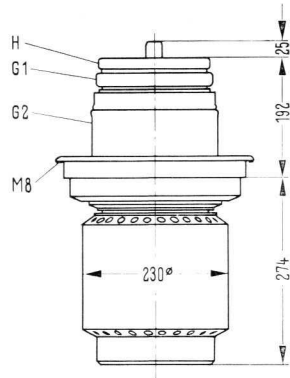
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RS 2002

The RS 2002 is a coaxially based transmitting tetrode. The grid sections are constructed in metal-ceramic technique. This tube is particularly suited for application in commercial SSB communication transmitters. Maximum plate dissipation is 120 kW or 150 kW respectively, according to the method of cooling.



General Data

FILAMENT

Filament voltage = 22 volts }
 Filament current ≈ 350 amps } thoriated tungsten cathode

Emission current 280 A at DC plate voltage = DC screen voltage =
 DC grid voltage = 700 volts

Grid-screen amplification factor 4 at DC plate voltage 3000 volts
 DC screen voltage = 800 up to 1200 volts
 DC plate current = 10 amps

Transconductance 130,000 μmhos at DC plate voltage =
 3000 volts, DC screen voltage = 1000 volts
 DC plate current = 10 amps

INTERELECTRODE CAPACITANCES

Grid-filament	260 μμF	Grid-plate	8.5 μμF ¹⁾
Grid-screen	340 μμF	Plate-filament	1.7 μμF ¹⁾
Screen-filament	33 μμF	Screen-plate	115 μμF

¹⁾ measured with grounded flat metal shield with 50 cm diameter attached to the screen-grid terminal

Maximum Ratings

Frequency	≦	30	Mc
DC Plate voltage	=	15	max. kilovolts
DC Screen voltage	=	1600	max. volts
DC Grid voltage	=	-800	max. volts
Peak cathode current	=	280	max. amps
Plate dissipation (RS 2002 W)	=	120	max. kilowatts
Plate dissipation (RS 2002 V)	=	150	max. kilowatts
Grid dissipation	=	1200	max. watts
Screen dissipation	=	2700	max. watts

Typical Operation

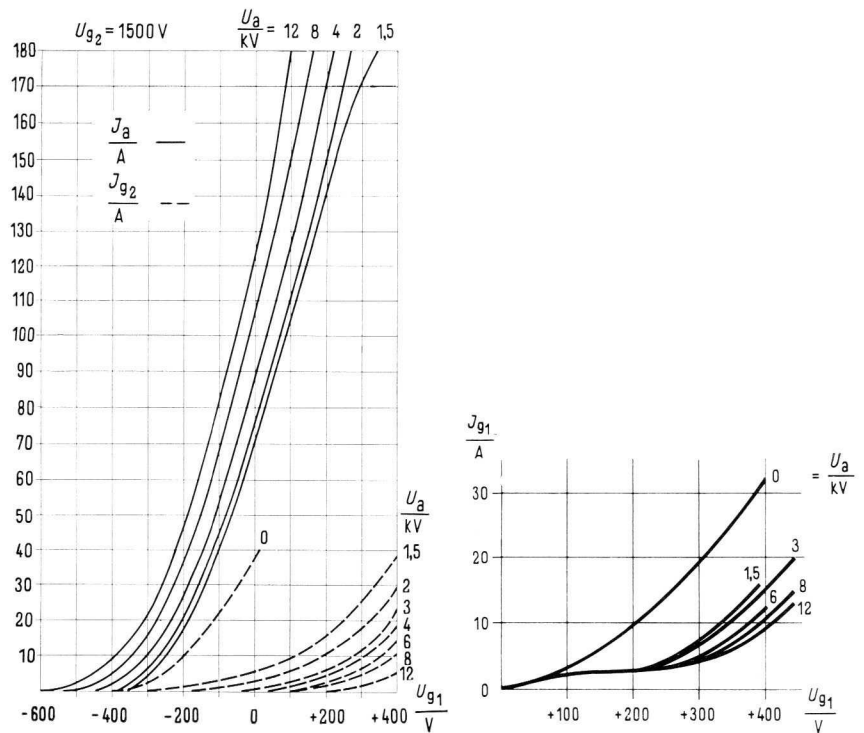
RF Linear Power Amplifier, SSB Modulation, Grid Current = 0

Modulation	:	without	one tone	two tone	
Power output	=	0	120	60	kilowatts
DC Plate voltage	=	9	9	9	kilovolts
DC Screen voltage	=	1500	1500	1500	volts
DC Grid voltage	ca.	-450	-450	-450	volts
Peak RF grid voltage	ca.	0	450	450	volts
DC Plate current	=	ca. 5	21	13.2	amps
DC Screen current	ca.	0	0.8	0.5	amps
Plate input	=	ca. 45	189	118.5	kilowatts
Plate dissipation	=	ca. 45	69	58.5	kilowatts
Screen dissipation	ca.	0	1200	750	watts
Efficiency	=	0	63.5	50.5	%

Other kind of operation.

Plate and Screen Modulation, Carrier Power Output = 220 kilowatts
at DC Plate Voltage = 11 kilovolts

Characteristics



Cooling

RS 2002 W

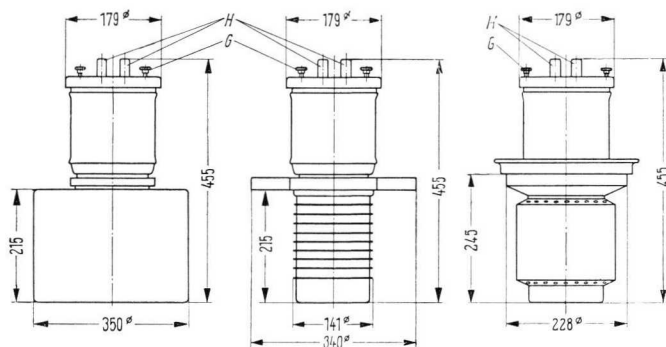
Required water flow on anode for inlet water temperature of 20 deg. C = 68 deg. F
at max. plate dissipation 150 l/min \approx 40 U. S. gallons per min.

RS 2002 V

Particulars on request.

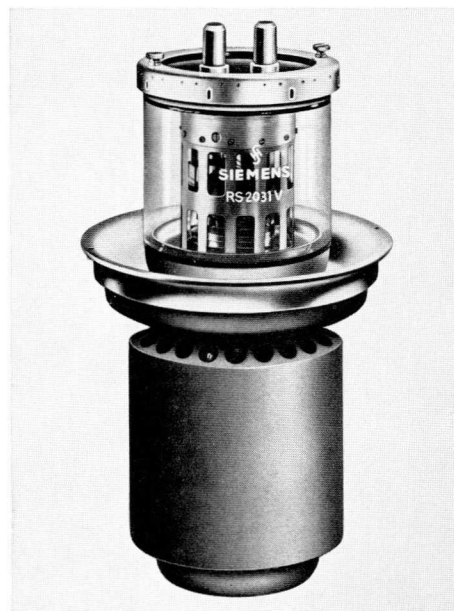
RS 2031

Low-Mu Power Triode intended primarily for use as an audio amplifier or modulator and for application in industrial RF-Generators at frequencies up to 30 Mc.



RS 2031 W
YD 1090
Weight approx. 17 kg

RS 2031 V
YD 1092
Weight approx. 39 kg



General Data

FILAMENT

Filament Voltage = 18 volts }
Filament Current approx. = 166 amps } Thoriated tungsten filament

Emission Current 125 amps at DC Plate Voltage = DC Grid Voltage = 750 volts

Amplification Factor 13,5 at DC Plate Voltage = 4 to 10 kilovolts, DC Plate Current = 5 amps

Transconductance 78,000 μ mhos at DC Plate Voltage = 4 kilovolts, DC Plate Current = 5 amps

INTERELECTRODE CAPACITANCES

Grid-Filament 160 μ f
Plate-Filament 7,6 μ f*)
Grid-Plate 76 μ f

*) measured with 40 x 40 cm grounded flat metal shield attached to the screen-grid terminal

Maximum Ratings

Frequency	30 max.	Mc
DC Plate Voltage	12 max.	kilovolts
DC Grid Voltage	-1500 max.	volts
DC Cathode Current	25 max.	amps
Peak Cathode Current	100 max.	amps
Plate Dissipation (RS 2031 W)	60 max.	kilowatts
Plate Dissipation (RS 2031 V)	110 max.	kilowatts
Grid Dissipation	1100 max.	watts