RF POWER TRIODE

Forced air cooled triode of metal-ceramic construction with integral cooler intended for use as an industrial oscillator.

QUICK REFERENCE DATA

Oscillator output power (W_o–W_{feedb}), typical	W_{osc}		2,73	kW
Frequency for full ratings	f	max.	50	MHz

To be read in conjunction with chapter "General Operational Recommendations".

RF CLASS C OSCILLATOR FOR INDUSTRIAL USE

with anode voltage from a three-phase rectifier

OPERATING CONDITIONS, continuous service

Frequency	f	50	50	50	50	MHz
Oscillator output power (W_o–W_{feedb})	W_{osc}	2,73	2,61	2,04	1,44	kW
Anode voltage	V_a	6	5	4	3	kV
Anode current	I_a	600	700	700	700	mA
Anode input power	W_{ia}	3600	3500	2800	2100	W
Anode dissipation	W_a	760	780	640	540	W
Anode output power	W_o	2840	2720	2160	1560	W
Anode efficiency	η_a	79	78	77	74	%
Oscillator efficiency	η_{osc}	76	75	73	69	%
Feedback ratio	V_{gp}/V_{ap}	13	17	20	25	%
Grid resistor	R_g	3	2,5	2	1,5	kΩ
Grid current, on load	I_g	150	160	180	200	mA
Grid voltage, negative	$-V_g$	450	400	360	300	V
Grid dissipation	W_g	43	46	55	60	W
Grid resistor dissipation	W_{Rg}	67	64	65	60	W

Note

For other operating conditions contact the manufacturer.

LIMITING VALUES (Absolute maximum rating system)

Frequency for full ratings	f	up to	50	MHz
Anode voltage	V_a	max.	7	kV
Anode current	I_a	max.	750	mA
Anode input power	W_{ia}	max.	4000	W
Anode dissipation	W_a	max.	800	W
Grid voltage	$-V_g$	max.	1250	V
Grid current, on load	I_g	max.	300	mA
off load	I_g	max.	400	mA
Grid dissipation	W_g	max.	150	W
Grid circuit resistance	R_g	max.	10	kΩ
Cathode current, mean	I_k	max.	1,2	A
peak	I_{kp}	max.	4,3	A
Envelope temperature	T_{env}	max.	240	°C

HEATING: direct; filament thoriated tungsten

Filament voltage	V_f	6,3 V
Filament current	I_f	33 A

The filament is designed to accept temporary fluctuations of + 5% and −10%.

CAPACITANCES

Anode to filament	C_{af}	0.3 pF
Grid to filament	C_{gf}	17 pF
Anode to grid	C_{ag}	11,3 pF

CHARACTERISTICS measured at V_a = 4 kV, I_a = 190 mA

Transconductance	S	5 mA/V
Amplification factor	μ	22

COOLING

To obtain optimum life, the temperature of the seals and the envelope should, under normal operating conditions, be kept below 200 °C.

Rate of airflow q min = 1 m^3 at $W_g + W_a$ 800 W

ACCESSORIES

Filament connector	type 40688
Filament/cathode connector	type 40689
Grid connector	type 40686

MECHANICAL DATA

Mounting position: vertical with anode up or down

Net mass: 1,3 kg

Dimensions in mm

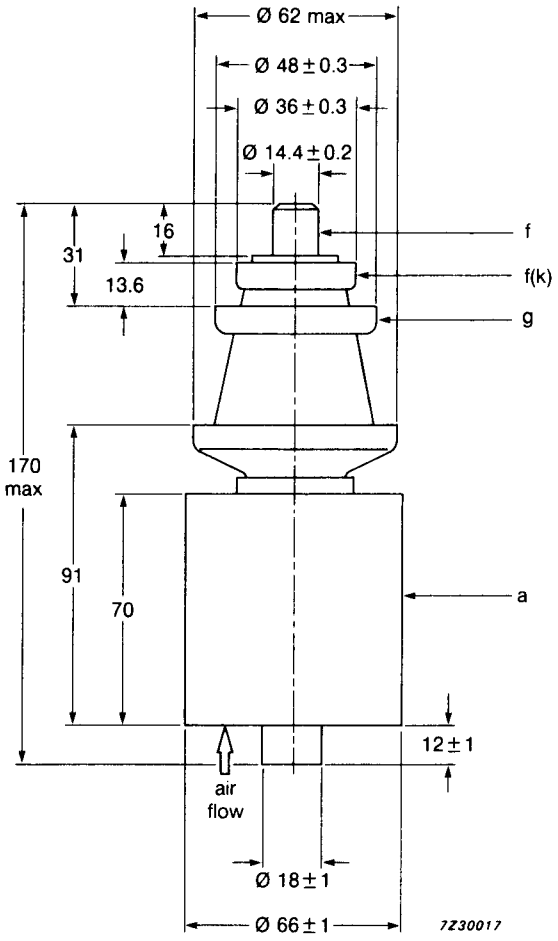

Fig. 1 Mechanical outline.

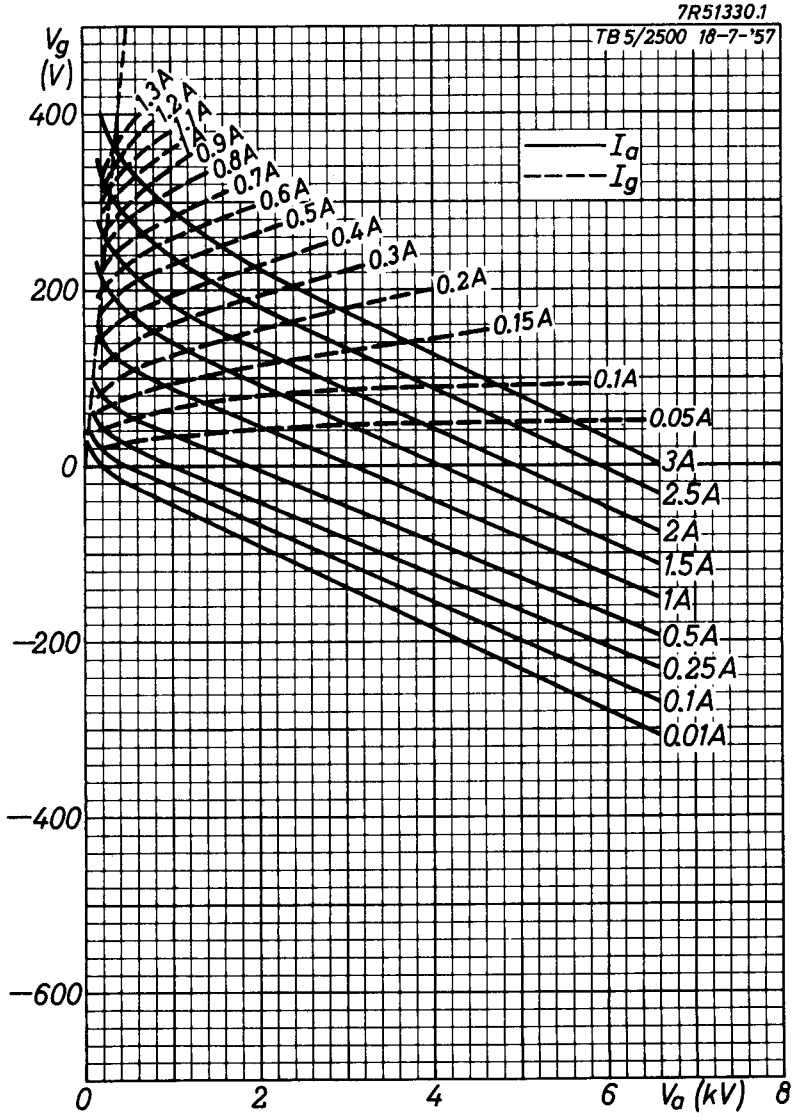

Fig. 1 Constant current characteristics.

PHILIPS

Data handbook

Electronic components and materials

YD1154

page	sheet	date
1	189	198802
2	190	198802
3	191	198802
4	192	198802
5	193	198802
6	FP	2000.08.26