

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 ($W_o - W_{\text{feedb}}$), typical	W_{osc}	13.22	kW
Frequency for full ratings	f max.	50	MHz

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

RF CLASS C OSCILLATOR FOR INDUSTRIAL USE

OPERATING CONDITIONS

Frequency	f	50	MHz
Oscillator output power ($W_o - W_{\text{feedb}}$)	W_{osc}	13.22	kW
Anode voltage	V_a	10.0	kV
Anode current	I_a	1.75	A
Anode input power	W_{ia}	17.5	kW
Anode dissipation	W_a	3.8	kW
Anode output power	W_o	13.7	kW
Anode efficiency	η_a	78.3	%
Oscillator efficiency	η_{osc}	75.6	%
Feedback ratio	$V_{\text{gp}}/V_{\text{ap}}$	12.0	%
Grid resistor	R_g	1.5	k Ω
Grid current, on load	I_g	450	mA
Grid voltage, negative	$-V_g$	675	V
Grid dissipation	W_g	180	W
Grid resistor dissipation	WR_g	304	W

COOLING

Table 1 Air cooling characteristics

With insulating pedestal type 40654.

Anode + grid dissipation $W_a + W_g$ (kW)	Altitude h (m)	Inlet temperature T_i (°C)	Rate of flow q_{min} (m ³ /min)	Pressure drop ΔP (Pa)*	Outlet temperature T_o (°C)
10	0	35	9,5	550	94
8	0	35	6,5	280	105
6	0	35	4,5	150	113
4	0	35	3,0	80	117
10	0	45	11	690	98
8	0	45	7,6	350	108
6	0	45	5,2	190	115
4	0	45	3,5	100	119
10	1500	35	11,4	630	94
8	1500	35	7,8	320	105
6	1500	35	5,5	170	113
4	1500	35	3,6	90	117
10	3000	25	12	620	90
8	3000	25	8,2	320	102
6	3000	25	5,7	170	111
4	3000	25	3,8	90	116

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

ACCESSORIES

Filament connector with cable	type	40692A	net mass	450	g	
Filament/cathode connector with cable	type	40693A	net mass	490	g	
Grid connector	f ≤ 4 MHz	type	40690	net mass	55	g
	f > 4 MHz	type	40691	net mass	240	g
Insulating pedestal	type	40654	net mass	4,25	kg	

* 1 Pa ≈ 0,1 mm H₂O.

MECHANICAL DATA

Mounting position : vertical with anode up or down

Net mass : approx. 7 kg

Dimensions in mm

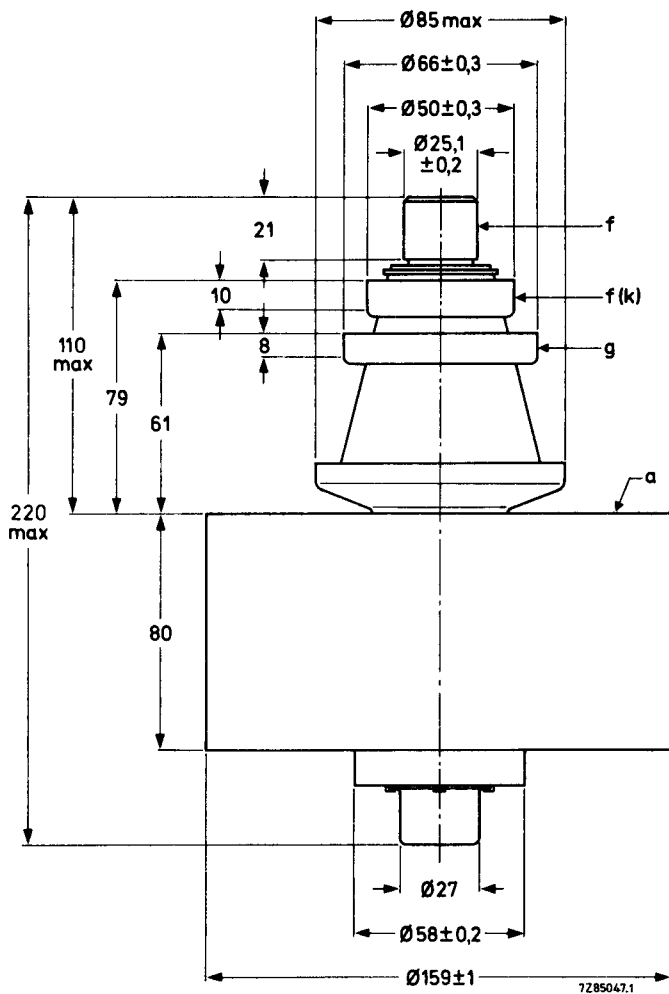


Fig. 1 Mechanical outline.

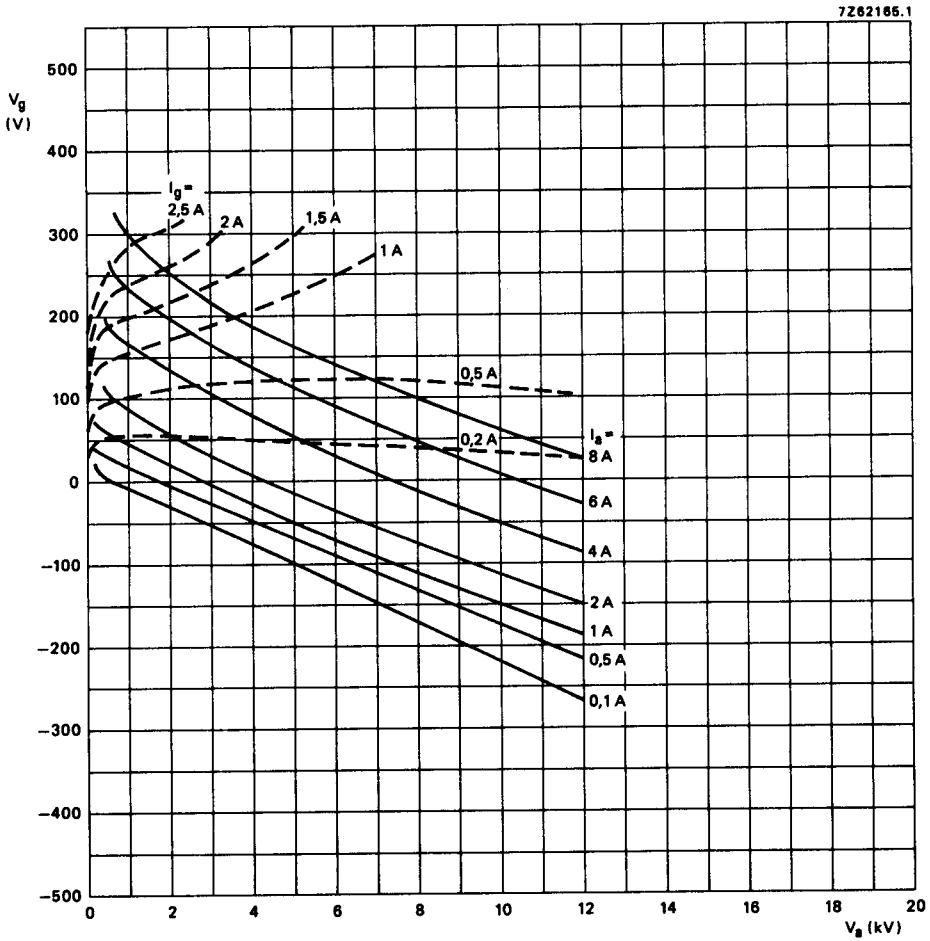


Fig. 2 Constant current characteristics.

PHILIPS

Data handbook



Electronic
components
and materials

YD1173

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