WATER COOLED INDUSTRIAL R.F. POWER TRIODE WITH INTEGRAL HELICAL COOLER

QUICK REFERENCE DATA		
Freq. (Mc/s)	Class C oscillator	
	V_a (kV)	W_o (kW)
50	6.0	6.0

HEATING: direct; filament thoriated tungsten

Filament voltage	V_f	=	12.6	V
Filament current	I_f	=	33	A

CAPACITANCES

Anode to all other elements except grid	C_a	=	0.3	pF
Grid to all other elements except anode	C_g	=	16	pF
Anode to grid	C_{ag}	=	11	pF

TYPICAL CHARACTERISTICS

Anode current	I_a	=	1	A
Anode voltage	V_a	=	6	kV
Amplification factor	μ	=	32	
Mutual conductance	S	=	15	mA/V

7Z2 8644

WATER COOLING CHARACTERISTICS

W_a (kW)	t_i (°C)	q_{min} (l/min)	p_i (atm)	t_o (°C)
2	20	1.5	0.06	44
	50	3	0.22	62
4	20	3	0.22	42
	50	6	0.73	61
6	20	5	0.54	39
	50	10	1.8	59

At water inlet temperatures between 20 °C and 50 °C the required quantity of water can be found by linear interpolation.

In general no air cooling will be required at frequencies up to 30 Mc/s and at ambient temperatures below 35 °C. At higher temperatures or at higher frequencies a low velocity air flow to the grid and filament seals will be necessary.

TEMPERATURE LIMITS (Absolute limits)

Water inlet temperature	t_i	= max.	50	°C
Temperature of filament seals		= max.	210	°C
Temperature of anode and grid seals		= max.	180	°C

ACCESSORIES

Filament connectors	40634
Connector for centre pin of the filament	40649
Grid connector	40650 or 40622

The centre filament pin f_c must not be used for filament current supply. However, the connector 40649 should be used for cooling of this pin.

The grid connector 40650 must not be used at frequencies higher than 30 Mc/s.

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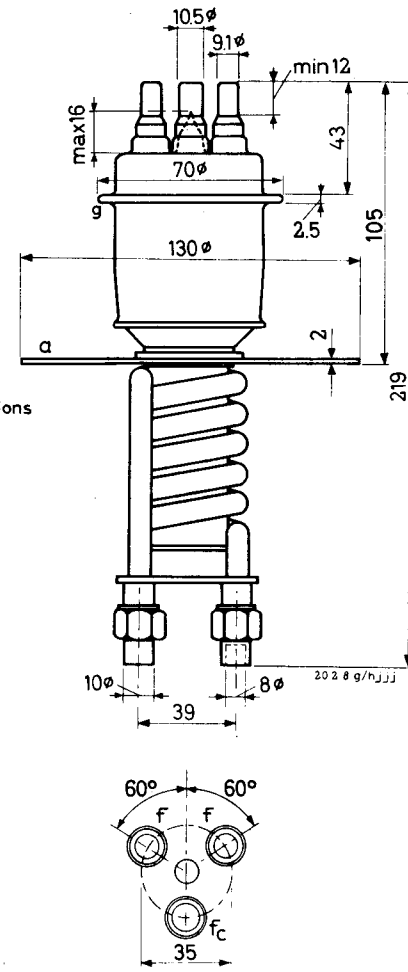
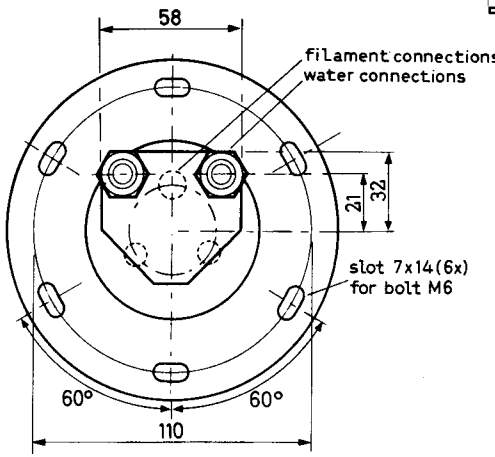
MECHANICAL DATA

Net weight 0.8 kg

Dimensions in mm





The use of wing nuts for connecting the water connections should be avoided

Mounting position: Vertical with anode down

R.F. CLASS C OSCILLATOR FOR INDUSTRIAL USE with anode voltage from three-phase half-wave rectifier without filter

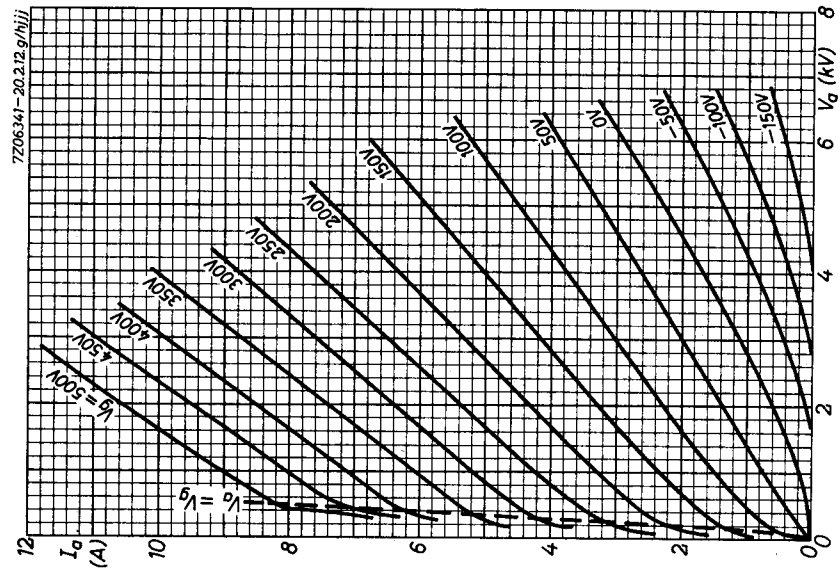
LIMITING VALUES (Absolute limits)

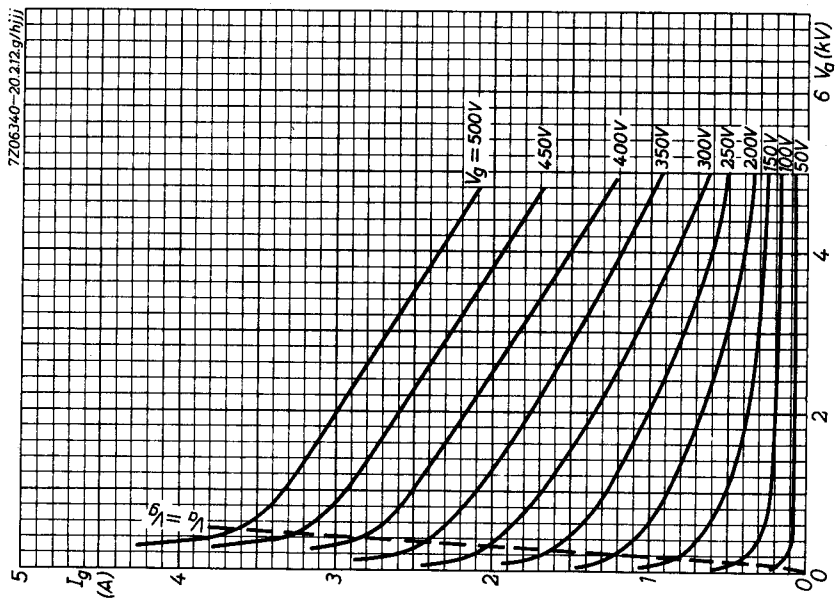
Frequency	f		up to	55	Mc/s
Anode voltage	V_a	=	max.	7	kV
Negative grid voltage	$-V_g$	=	max.	1250	V
Anode current	I_a	=	max.	1.8	A
Grid current, loaded	I_g	=	max.	0.5	A
Grid current, unloaded	I_g	=	max.	0.7	A
Anode input power	W_{ia}	=	max.	11	kW
Anode dissipation	W_a	=	max.	6	kW
Grid resistor	R_g	=	max.	10	kΩ

OPERATING CONDITIONS

Frequency	f	=	50	Mc/s
Transformer voltage	V_{tr}	=	5.1	kV_{RMS}
Anode voltage	V_a	=	6.0	kV
Anode current	I_a	=	1.5	A
Grid current	I_g	=	0.4	A
Grid input power	W_{ig}	=	300	W
Anode input power	W_{ia}	=	9	kW
Anode dissipation	W_a	=	2.7	kW
Output power	W_o	=	6	kW
Efficiency	η	=	67	%

7Z2 3530


7Z06341-20.2.12.g/hjj
I_a (A)
V_a (kV)
V_g = 500V
450V
400V
350V
300V
250V
200V
150V
100V
50V
0
$V_a = V_g$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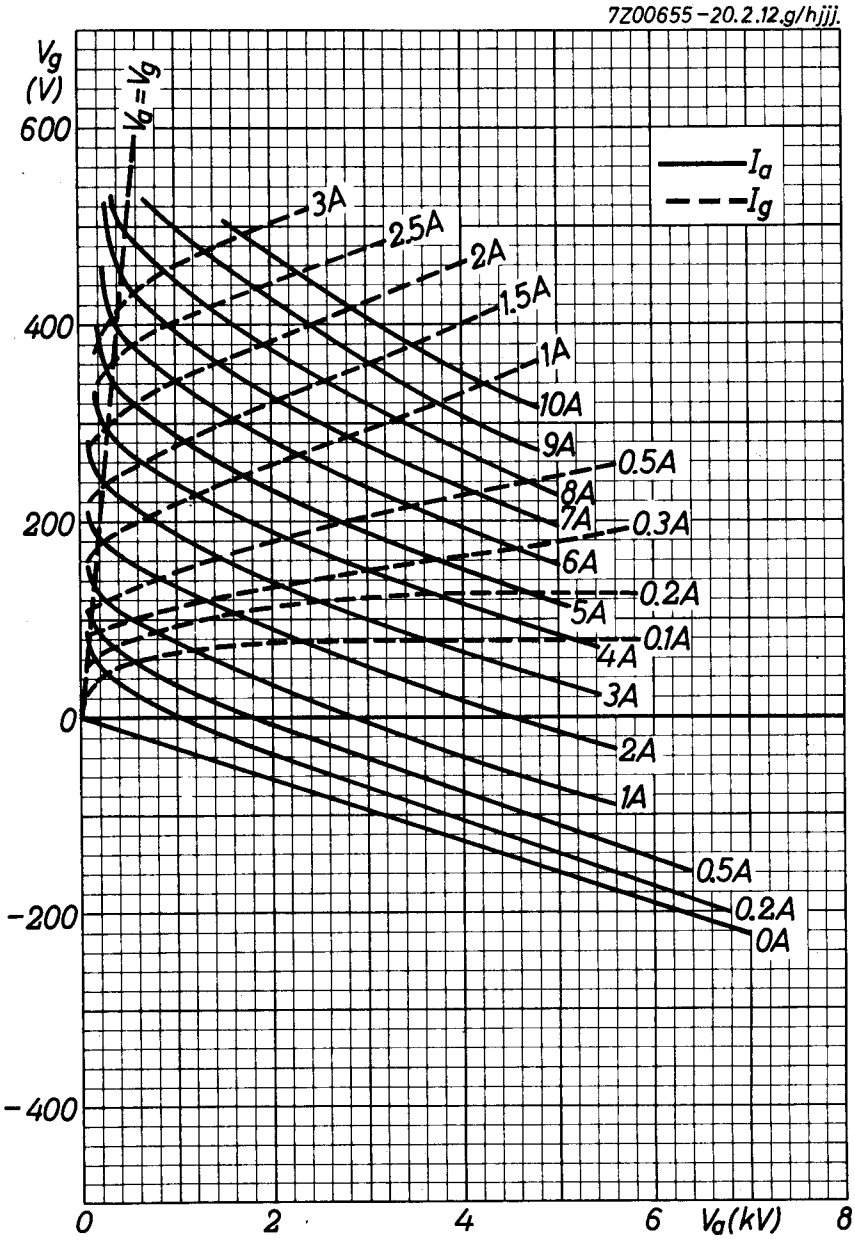
I_g (A)
V_g (kV)
V_g = 500V
450V
400V
350V
300V
250V
200V
150V
100V
50V
0
$V_a = V_g$


7Z00655-20.2.12.g/hjjj.
Vg (V)
600
400
200
0
-200
-400
Vg=Va
Ia
Ig
3A
2.5A
2A
1.5A
1A
10A
9A
8A
7A
6A
5A
4A
3A
2A
1A
0.5A
0.3A
0.2A
0.1A
0.5A
0.2A
0A
0
2
4
6
8
Va(kV)