

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

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

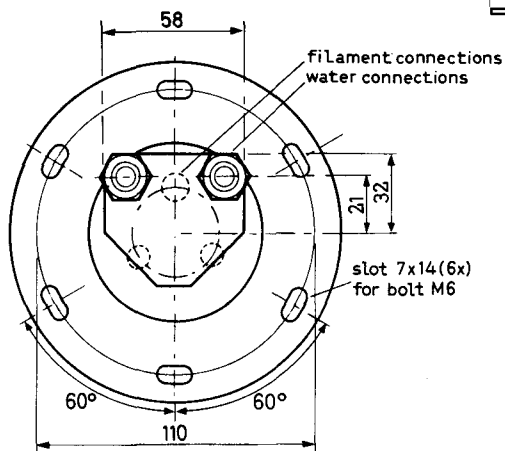
The centre filament pin f_c must not be used for filament current supply. However, the connector 40649 should be used for cooling of this pin.

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

MECHANICAL DATA

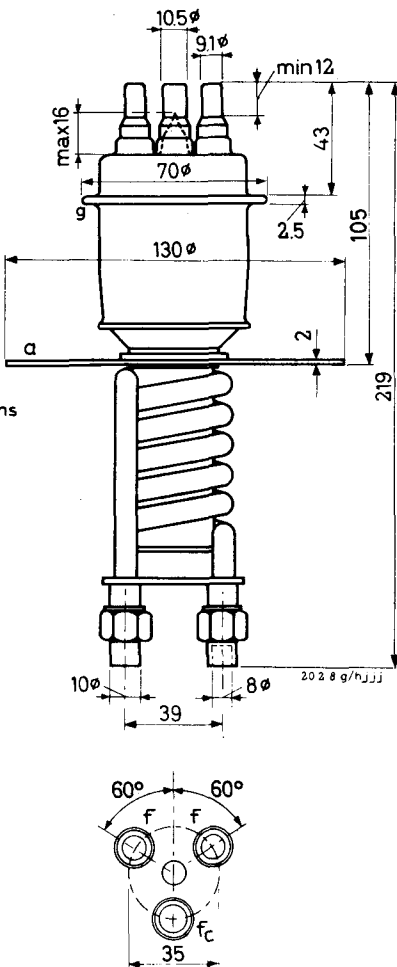
Dimensions in mm

Net weight 0.8 kg



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

Mounting position: Vertical with anode down



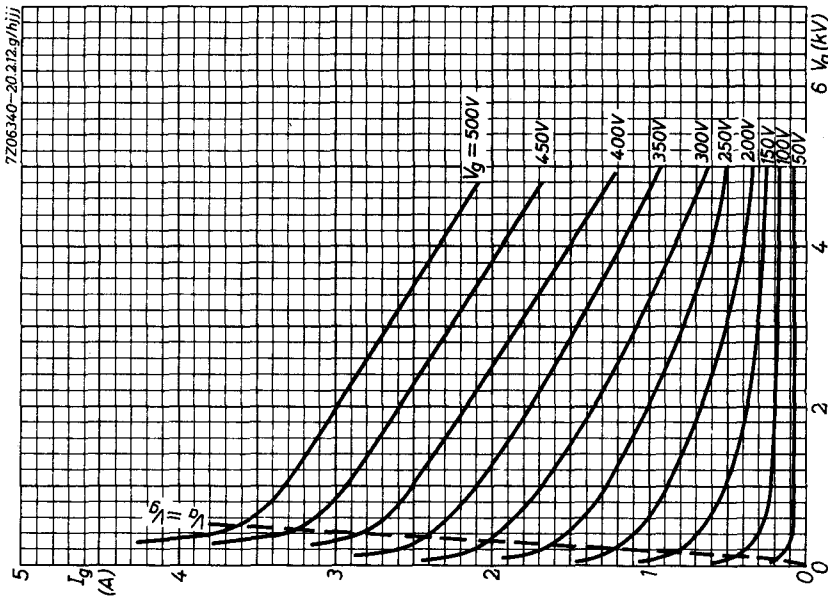
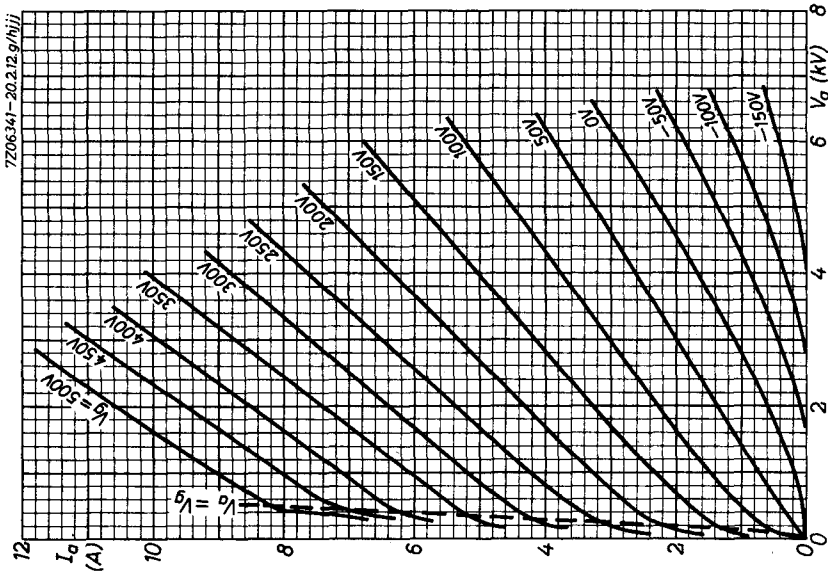
R.F. CLASS C OSCILLATOR FOR INDUSTRIAL USE with anode voltage from three-phase half-wave rectifier without filter

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 k Ω

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 %



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