

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

QUICK REFERENCE DATA		
Industrial R.F. oscillator class C		
Freq.	Three phase	
(MHz)	V_a (kV)	$W_p^{1)}$ (kW)
50	7.2	6.1
	6.2	5.0

HEATING: direct; filament thoriated tungsten

Filament voltage

$$V_f = 12.6 \text{ V} \begin{matrix} +5\% \\ -10\% \end{matrix}$$

Filament current

$$I_f = 33 \text{ A}$$

CAPACITANCES

Anode to all other elements except grid

$$C_a = 1.0 \text{ pF}$$

Grid to all other elements except anode

$$C_g = 14.2 \text{ pF}$$

Anode to grid

$$C_{ag} = 7.9 \text{ pF}$$

TYPICAL CHARACTERISTICS

Anode voltage

$$V_a = 6 \text{ kV}$$

Anode current

$$I_a = 1 \text{ A}$$

Mutual conductance

$$S = 12 \text{ mA/V}$$

Amplification factor

$$\mu = 24$$

¹⁾ Useful power in the load

TEMPERATURE LIMITS (Absolute limits)Water inlet temperature t_i = max. 50 °C

Temperature of the seals = max. 220 °C

WATER COOLING CHARACTERISTICS

W_a (kW)	t_i (°C)	q_{min} (l/min)	P_i (atm)	t_o (°C)
2	20	1	0.032	56
	50	2	0.084	68
4	20	2.2	0.10	49
	50	4.4	0.49	65
6	20	4	0.41	43
	50	8	1.4	62

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

At frequencies above 4 MHz a low velocity air flow should be directed to the seals.

At frequencies above 4 MHz both grid terminals should be connected in parallel and care should be taken to distribute the R.F. current equally over both grid terminals to avoid excessive temperatures.

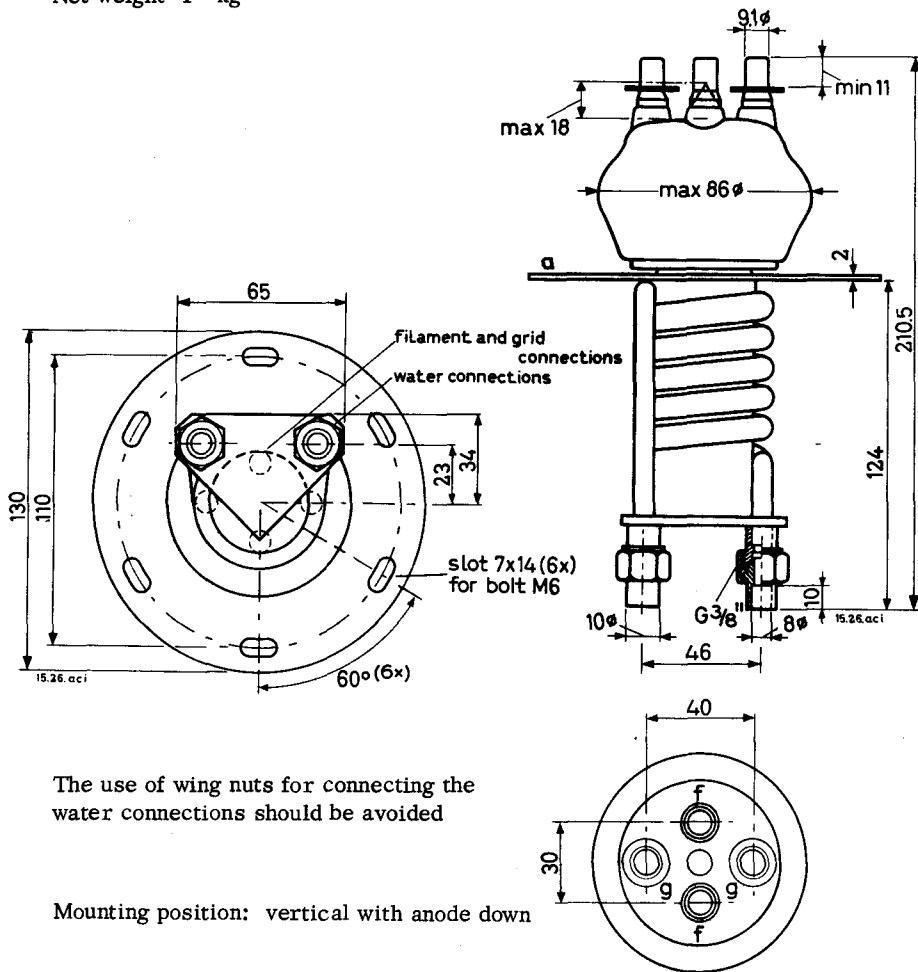
→ ACCESSORIES

Filament and grid connectors (4 required) type 40634

MECHANICAL DATA

Dimensions in mm

Net weight 1 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 rectifier without filter

LIMITING VALUES (Absolute limits), continuous service

Frequency	f	up to	50 MHz
Anode voltage	V_a	= max.	8 kV
Anode input power	W_{ia}	= max.	12 kW
Anode dissipation	W_a	= max.	6 kW
Anode current	I_a	= max.	1.8 A
Negative grid voltage	$-V_g$	= max.	1250 V
Grid current, loaded	I_g	= max.	0.4 A
Grid current, unloaded	I_g	= max.	0.5 A
Grid circuit resistance	R_g	= max.	10 k Ω

OPERATING CHARACTERISTICS , continuous service

Frequency	f	=	50	50 MHz
Anode voltage	V_a	=	7200	6200 V
Anode current, loaded	I_a	=	1.5	1.4 A
Anode current, unloaded	I_a	=	0.37	0.40 A
Grid current, loaded	I_g	=	0.36	0.37 A
Grid current, unloaded	I_g	=	0.47	0.47 A
Grid resistor	R_g	=	1850	1500 Ω
Load resistance	$R_{a\sim}$	=	2300	2100 Ω
Feedback ratio under loaded conditions	$V_{g\sim}/V_{a\sim}$	=	17	17 %
Anode input power	W_{ia}	=	10.8	8.68 kW
Anode dissipation	W_a	=	3.3	2.5 kW
Efficiency	η	=	70	71 %
Output power in the load	W_{ℓ}	=	6.1	5.0 kW ¹⁾

¹⁾ Useful power in the load, measured in a circuit having an efficiency of 85 %
7Z2 3540

