

### RF POWER TRIODE

Air Cooled

#### QUICK REFERENCE DATA

Industrial RF oscillator, class-C

freq.	three phase	
	$V_a$	$W_o$
MHz	kV	kW
30	12	39
	10	31.3
	8	23.2

**HEATING:** direct; thoriated tungsten filament

Filament voltage	$V_f$	=	8	V
Filament current	$I_f$	=	130	A
Cold filament resistance	$R_{fo}$	=	0.006	Ohms

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

The filament current must never exceed a peak value of 280 A at any time during the initial energizing schedule.

#### CAPACITANCES

Anode to all other elements except grid	$C_a$	=	0.9	pF
Grid to all other elements except anode	$C_g$	=	45	pF
Anode to Grid	$C_{ag}$	=	23.5	pF

#### TYPICAL CHARACTERISTICS

Anode Voltage	$V_a$	=	12	kV
Anode current	$I_a$	=	2	A
Mutual conductance	$S_a$	=	22	mA/V
Amplification factor	$\mu$	=	21	



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**RF 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	30	MHz
Anode voltage	$V_a$	= max.	13	kV
Anode current	$I_a$	= max.	5	A
Anode dissipation	$W_a$	= max.	15*	kW
Anode input power	$W_{ia}$	= max.	60	kW
Negative grid voltage	$-V_g$	= max.	2	V
Grid current, on load $I_g$	=	max. 1.5	A	
Grid current, offload $I_g$	=	max. 2.0	A	
Grid circuit resistance	$R_g$	= max.	10	k

**OPERATING CONDITIONS**

Frequency	f	=	30	30	30	MHz
Anode voltage	$V_a$	=	12	10	8	kV
Anode current, loaded	$I_a$	=	4.5	4.5	4.5	A
Anode current, unloaded	$I_a$	=	0.65	0.63	0.62	A
Grid current, loaded $I_g$	=	0.9	0.9	0.9	A	
Grid current, unloaded	$I_g$	=	1.22	1.3	1.35	A
Grid resistor	$R_g$	=	1100	1000	900	Ohms
Load resistance	$R_{a-}$	=	1450	1100	800	Ohms
Feedback ratio under loaded conditions	$V_{g-}/V_{a-}$	=	16	19	24	%
Anode input power	$W_{ia}$	=	54	45	36	kW
Anode dissipation	$W_a$	=	15	13.7	12.8	kW
Output power	$W_o$	=	39	31.3	23.2	kW
Efficiency	N	=	72.5	70	64.5	%
Output power in the load **	$W_l$	=	30	25	18	kW

\*TBW6/14:  $W_{a \max} = 15$  kW

\*\*Useful power in the load, measured in a circuit having an efficiency of approx. 85%.

# **TEMPERATURE LIMIT (Absolute Limit)**

anode dissipation wa kW	altitude (m)	inlet temperature Ti (°C)	rate of flow qmin m3/min	pressure drop P (Pa)*	outlet temperature To(°C)
15	0	35	18.1	600	90
10	0	35	10.5	230	90
7	0	35	6.6	100	95
15	0	45	21.2	790	90
10	0	45	12.3	310	90
7	0	45	7.7	130	100
15	1500	35	21.7	730	90
10	1500	35	12.6	280	90
7	1500	35	7.9	120	100
15	3000	25	22.8	700	80
10	3000	25	13.2	270	80
7	3000	25	8.3	120	95

## **ACCESSORIES**

Filament connectors with cable 40662  
Grid Connector\* 40663  
Insulating Pedestal 40648

The rounded side of the grid connector should face the anode. To ensure a uniform R.F. current distribution in the grid seal frequencies higher than 4 MHz, the grid lead should be connected as show below.

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