

WATER-COOLED R.F. TRIODE

TX12-20W

High-power water-cooled triode, primarily intended for use in the output stage of communications transmitters, also suitable for R.F. heating purposes.

FILAMENT

Pure tungsten, suitable for a.c. or d.c. operation.

Marked V_f	18.5 ± 0.5	V
I_f (approx.)	85	A

(Marked volts give 10 amps emission for 90% saturation).

CAPACITANCES

C_{g-f}	28	$\mu\mu\text{F}$
C_{a-f}	1.5	$\mu\mu\text{F}$
C_{a-g}	26	$\mu\mu\text{F}$

CHARACTERISTICS (At $V_a = 12 \text{ kV}$ $I_a = 1.0 \text{ A}$)

g_m	11	mA/V
μ	38	
r_a	3.5	k Ω

LIMITING VALUES

V_a max.	12	kV
I_k max.	3.0	A
I_g max.	0.5	A
p_a max.	18	kW
f max.	20	Mc/s
Min. water flow rate	4.5	gal/min
Max. water temp. rise	14	$^{\circ}\text{C}$
Max. water outlet temp.	60	$^{\circ}\text{C}$

TYPICAL OPERATING CONDITIONS AS CLASS "C" C.W. AMPLIFIER (At $f = 1 \text{ Mc/s}$)

V_a	12	kV
V_g	-900	V
I_a	2.63	A
I_g	0.37	A
V_{drive} (pk)	1.85	kV
P_{drive}	700	W
P_{out}	22	kW
p_a	9.5	kW
η	70	%

TYPICAL OPERATING CONDITIONS AS CLASS "B" AMPLIFIER WITH MODULATED INPUT (At $f = 1 \text{ Mc/s}$)

V_a	12	kV
V_g	-300	V
(Carrier) (Peak values for 100% mod.)		
I_a	1.1	2.5 A
I_g	-	0.2 A
V_{drive} (pk)	430	860 V
P_{drive}	-	160 W
P_{out}	4.25	19 kW
p_a	9.0	11 kW
η	32	63.5 %