

TRANSMITTING VALVES AND
MERCURY VAPOUR RECTIFIERS

ME 1001

Indirectly-heated disc seal triode (without internal feedback) intended mainly as a common grid, earthed anode, concentric line oscillator. It may also be used as a power amplifier.

When used in a co-axial line circuit with an anode input of 10 watts, the output power is approximately 0.5 watts at 10 cms, rising to 3 watts at 30 cms.

The lower limit of operating wavelength is 8-8.5 cms.

HEATER

V_h 6.3 V I_h 0.4 A approx.

MOUNTING POSITION

Any

CAPACITANCES

C_{a-g}	1.1	$\mu\mu\text{F}$
C_{a-k}	0.02	$\mu\mu\text{F}$
C_{g-k}	2.2	$\mu\mu\text{F}$

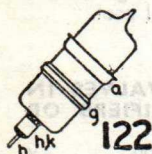
CHARACTERISTICS

V_a	250	V
V_g	-3.5	V
I_a	20	mA
g_m	6.0	mA/V
μ	30	approx.

LIMITING VALUES

V_a max.	350	V
P_a max.	10	W
I_a max.	50	mA
I_a (pk) max.	150	mA
*Anode seal temp. max.	140	$^{\circ}\text{C}$

*In order to limit the anode seal temperature and also to limit the rate of change of anode seal temperature, it is necessary that the mass of metal in close thermal contact with the anode disc be not less than 60 grams (2 ozs) of brass or its equivalent



DIMENSIONS :

$L=63$ mm
 $D=23$ mm

V.H.F. triode with hard glass envelope and strong double helical thoriated tungsten filament, designed for use as an R.F. amplifier, oscillator, grounded-grid amplifier or modulator.

At maximum ratings the maximum operating frequency is 150 Mc/s.

TY2-125

Preliminary
Data

FILAMENT

V_f (D.C. or A.C.)	6.3	V
I_f (approx.)	5.4	A



4 VALVE DATA PREFERRED TYPES

H TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS

TY2-125 MOUNTING POSITION

(contd.) Vertical only, base up or down

CAPACITANCES

C_{a-g}	5.8 μF approx.
C_{g-f}	6.0 μF approx.
C_{a-f}	0.2 μF approx.

CHARACTERISTICS. measured at $V_a=2.5$ KV, $I_a=50$ mA

g_{m1}	3.0	mA/V
μ	26	

LIMITING VALUES

V_a max.	2,500	V
$*P_a$ max.	135	W
I_k max.	240	mA
Max. operating frequency at full ratings	150	Mc/s
Max. operating frequency at 80% V_a max. and 87% I_k max.	200	Mc/s
Max. temperature of bottom of bulb	180	$^{\circ}\text{C}$
Max. temperature of anode lead out	225	$^{\circ}\text{C}$

*Anode red hot (temperature 850°C .)

COOLING

When the valve is operated at near maximum ratings it is possible that the maximum temperature limits may be exceeded, in which case an air flow of up to $\frac{1}{2}$ cu. ft. (10 litres) per minute must be directed towards the centre of the valve base.

An anode terminal connector having a large area is necessary in order to keep the anode seal cool.

OPERATING CONDITIONS FOR TWO VALVES IN PUSH-PULL AS CLASS "B" L.F. AMPLIFIERS OR MODULATORS

V_a	1,500	2,000	2,500	V
V_g (approx.)	-53	-68	-90	V
$I_{a(o)}$	2×42	2×50	2×40	mA
I_a (max. sig.)	2×166	2×169	2×165	mA
I_g	2×57	2×50	2×40	mA
V_{fn} (pk) (approx.)	2×138	2×153	2×175	V
R_{a-s}	11	13	16	K Ω
P_{out}	340	460	560	W
D_{tot} (approx.)	3	3.5	4	$\frac{\text{e}}{\%}$
η	68	68	68	$\frac{\text{e}}{\%}$



TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS **H**

OPERATING CONDITIONS AS SINGLE VALVE TY2-125 R.F. POWER OSCILLATOR OR AMPLIFIER (contd.)

	(Class "C" Telegraphy)					
f	<150	<150	<150	<150	200	Mc/s
V _a	1,000	1,500	2,000	2,500	2,000	V
V _g	-80	-120	-150	-200	-150	V
I _a	200	200	200	200	170	mA
I _g	40	40	40	40	40	mA
v _{in} (pk)	230	270	300	350	325	V
P _{drive}	9.2	10.8	12	14	13	W
P _{out}	100	200	280	360	180	W
η	50	67	70	72	53	%

OPERATING CONDITIONS AS R.F. POWER AMPLIFIER (Class "C" Anode Modulated)

f	60	60	60	Mc/s
V _a	1,000	1,500	2,000	V
V _g (approx.)	-120	-150	-200	V
I _a	130	130	130	mA
I _g (approx.)	50	50	50	mA
v _{in} (pk) (approx.)	280	310	360	V
P _{drive} (approx.)	14	15.5	18	W
P _{out}	65	130	180	W
η	50	67	70	%
*P _{mod}	65	97.5	130	W

* For 100% modulation



BASE :
MVH 18

DIMENSIONS :
L=129 mm
D=62mm

Indirectly-heated beam tetrode with aligned grid construction to minimise screen current. It is rated to dissipate a maximum of 7.5 watts at the anode and is particularly suitable for use at frequencies up to 150 Mc/s as an R.F. amplifier or as a frequency multiplier.

QVO47

HEATER

V_h 6.3 V I_h 0.6 A Suitable for D.C. or A.C. operation
Heating time 22 secs.

MOUNTING POSITION Any

CAPACITANCES

C _{1a}	8.0	1414F
C _{out}	5.4	1414F
C _{a-g1}	<0.1	1414F

CHARACTERISTICS

At V_a=300 V V_{g2}=250 V I_a=25 mA

g _m	1.9	mA/V
I _a g ₁ -g ₂	5.6	
r _a	67	K Ω

