

TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS **H**

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

	<150	<150	<150	<150	200	Mc/s
f	<150	<150	<150	<150	2,000	V
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)

	60	60	60	Mc/s
f	60	60	60	V
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
$I_{a-g1-g2}$	5.6	
r_a	67	K Ω



4 VALVE DATA PREFERRED TYPES

H TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS

QVO47 LIMITING VALUES

(contd.)

V_a max.	400	V
V_{g2} max.	250	V
P_a max.	7.5	W
P_{g2} max.	2.0	W
I_k max.	50	mA
I_{g1} max.	6.0	mA

OPERATING CONDITIONS

As single valve Class "C", R.F. amplifier

Frequency	3	3	20	20	Mc/s
V_a	300	300	300	300	V
V_{g2}	150	250	150	250	V
V_{g1}	-35	-50	-30	-60	V
I_a	40	43	43.5	43.7	mA
I_{g2}	7.2	6.6	4.7	5.9	mA
I_{g1}	2.8	0.4	1.8	0.4	mA
$V_{in(pk)}$	58	60	48	67	V
P_{out}	7.1	8.1	7.3	7.9	W
P_a	4.9	4.8	5.8	5.2	W
η	59	62	56	60	%
Frequency	60	60	150	150	Mc/s
V_a	300	300	300	300	V
V_{g2}	150	250	150	250	V
V_{g1}	-30	-50	-30	-50	V
I_a	44	44	44	46	mA
I_{g2}	4.5	6.0	4.5	4.0	mA
I_{g1}	1.9	0.4	1.5	0.4	mA
$V_{in(pk)}$	48	57	52	57	V
P_{out}	7.0	7.7	6.3	6.3	W
η	53	58	47	45	%

As push-pull Class "C", R.F. amplifier

Frequency	60	100	150	Mc/s
V_a	300	300	300	V
V_{g2}	250	250	250	V
V_{g1}	-60	-60	-50	V
I_a	2×43.0	2×44.4	2×46	mA
I_{g2}	2×6.7	2×5.3	2×4.0	mA
I_{g1}	2×0.5	2×0.4	2×0.4	mA
$V_{in(pk)}$	2×68	2×68	2×57	V
P_{out}	15.6	14.7	12.6	W
P_a	2×5.1	2×6.0	2×7.4	W
η	60	55	46	%

As frequency doubler, Single valve

Output frequency	20	75	100	150	Mc/s
V_a	300	300	300	250	V
V_{g2}	250	250	200	200	V
V_{g1}	-80	-120	-120	-120	V
I_a	41.2	43.3	38.4	36.8	mA
I_{g2}	8.0	5.5	2.6	2.1	mA
I_{g1}	0.8	1.2	1.5	1.1	mA
$V_{in(pk)}$	81	124	120	144	V
P_{out}	5.6	5.6	4.4	2.3	W
P_a	6.8	7.4	7.1	6.9	W
η	45	44	38	25	%



TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS

OPERATING CONDITIONS (contd.)

QVO47 (contd.)

As frequency trebler.	Single valve			Push-pull	
Output frequency	20	75	100	150	Mc/s
V_a	300	300	275	225	V
V_{g2}	250	250	200	200	V
V_{g1}	-120	-140	-140	-140	V
I_a	35.2	34.1	36.0	2 × 36	mA
I_{g2}	4.2	2.8	2.5	2 × 2.5	mA
I_{g1}	0.6	0.6	1.5	2 × 1.3	mA
$V_{ia(pk)}$	109	130	142	2 × 152	V
P_{out}	3.3	3.2	2.8	3.1	W
p_a	7.3	7.1	7.1	2 × 6.6	W
η	31	31	28	19	%



BASE :
B9G

DIMENSIONS :
L=78 mm
D=38 mm

Indirectly-heated beam tetrode rated for a maximum anode dissipation of 25 watts. It is suitable for use as an A.F. amplifier or modulator or as an R.F. amplifier or oscillator.

QVO5-25

HEATER

V_h 6.3 V I_h 0.9 A

Heating time 15 secs.

MOUNTING POSITION

Any

CAPACITANCES (measured with external shield)

C_{ja}	11	$\mu\mu F$
C_{out}	7	$\mu\mu F$
C_{a-g1}	<0.2	$\mu\mu F$

CHARACTERISTICS

At $V_a=600$ V $V_{g2}=300$ V $I_a=72$ mA

μ_{g1-g2}	8	
g_m	6.0	mA/V

