

PYE - Q5

TRANSISTOR ANALYSIS

Transistor	Collector		Base V	Emitter V
	V	mA		
TR1..	2.4	0.5	0.6	0.5
TR2..	5.7	1.2	0.66	0.58
TR3..	5.7	1.05	0.9	0.73
TR4..	5.5	4.0	1.0	0.85
TR5 { *	5.95	2.0	0.2	—
TR5 { †	8.95	2.0	0.2	—
TR6 { *	5.95	2.0	0.2	—
TR6 { †	8.95	2.0	0.2	—

*6V model. †9V model.

Intermediate frequency 470kc/s.

Resistors

R1	1kΩ	C1
R2	100Ω	C1
R3	47kΩ	C1
R4	15kΩ	C1
R5	6.8kΩ	B1
R6	680Ω†	B1
R7	680Ω	B1
R8	10kΩ	B1
R9	68kΩ	B1
R10	10kΩ	A2
R11	18kΩ	A1
R12	4.7kΩ	B1
R13	270Ω‡	A1
R14	220Ω	A1
R15	1.8kΩ	A1
R16	68Ω	A1
R17	5Ω	B1

Capacitors

C1	160pF	C1
C2	35pF	C1
C3	523pF	C1
C4	110pF	B1
C5	0.01μF	C1
C6	390pF	B1
C7	35pF	C2

C8	560pF	B1
C9	523pF	C2
C10	0.01μF	C1
C11	250pF	B1
C12	8μF	C1
C13	0.01μF	C1
C14	120pF	B1
C15	0.1μF	B1
C16	250pF	B1
C17	100μF	B1
C18	47pF	B1
C19	250pF	B1
C20	0.1μF	B1
C21	0.05μF	B1
C22	4μF	B1
C23	100μF	A1
C24	0.005μF	A1
C25	0.01μF	A1
C26	0.1μF	§
C27	0.1μF	§
C28	0.25μF	A1

Coils

L1	—	B2
L2	—	A2
L3	—	B2
L4	—	C2

L5a	—	B1
L5b	—	B1
L6	—	B2

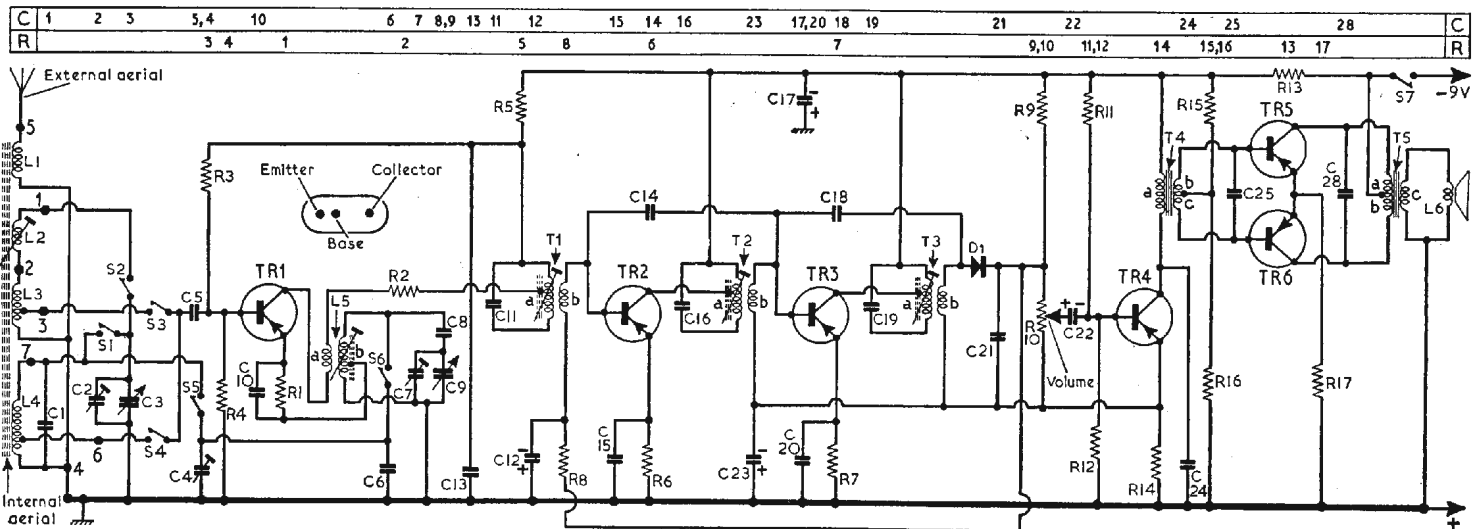
Transformers*

T1 { a	3.5Ω	B1
T1 { b	0.25Ω	B1
T2 { a	3.5Ω	B1
T2 { b	0.25Ω	B1
T3 { a	3.5Ω	B1
T3 { b	0.5Ω	B1
T4 { a	137.0Ω	A2
T4 { b	78.5Ω	A2
T4 { c	—	A2
T5 { a	4.2Ω	A2
T5 { b	—	A2
T5 { c	0.26Ω	A2

Miscellaneous

D1	OA70	B1
S1-S6	—	B2
S7	—	A1

*Approximate D.C. resistance in ohms.
†470Ω in 6V model.
‡100Ω in 6V model.
§6V model only, see "General Notes" overleaf.



Transistor Types

Transistor	6V model	9V model
TR1	White Circle 1 No. 865150	Yellow Circle 1 No. 865182
TR2	White Circle 2 No. 865151	Yellow Circle 2 No. 865183
TR3	White Circle 3 No. 865152	Yellow Circle 3 No. 865184
TR4	White Circle 4 No. 865153	Yellow Circle 4 No. 865185
TR5, TR6	White Circle 5 No. 865165	Yellow Circle 5 No. 865186

CIRCUIT ALIGNMENT

- 1.—Remove the chassis from the cabinet as described under "Dismantling" col. 3. Connect an output meter across the speaker L6, and a signal generator between chassis and the junction of S3, C5 (location reference C1).
- 2.—Switch the receiver to M.W. and tune it to the low frequency end of the band. Feed in a modulated 470kc/s signal and adjust the cores of T3a, T2a and T1a (location reference B1) for maximum output.

- 3.—Tune the receiver to 500m. Feed in a 600kc/s signal and adjust the core of L5b (B1) for maximum output.
- 4.—Tune the receiver to 200m. Feed in a 1,500kc/s signal and adjust C7 (C2) for maximum output.
- 5.—Repeat operations 3 and 4 until calibration is correct.
- 6.—Switch the receiver to L.W. and tune it to 1,400m. Feed in a 214kc/s signal and adjust C4 (B1) for maximum output.
- 7.—Replace the chassis in the metal section of the case. Couple the signal generator to the ferrite rod aerial via a loop of wire placed 50cm from L3 on the ferrite rod.
- 8.—With the receiver still tuned to 1,400m, feed in a 214kc/s signal and slide the former of L4 (C2) along the ferrite rod for maximum output.
- 9.—Switch the receiver to M.W. and tune it to 500m. Feed in a 600kc/s signal and slide the former of L2 along the ferrite rod for maximum output.
- 10.—Tune the receiver to 200m. Feed in a 1,500kc/s signal and adjust C2 (C1) for maximum output.
- 11.—Repeat operations 9 and 10 until calibration is correct. Reseal the formers of L2 and L4 with polystyrene dope.

Switches.—S1-S6 are the waveband switches ganged in a rotary unit and mounted on the chassis panel, immediately below the speaker. Part of the switch unit is shown in our illustration of the chassis, location reference B2, and a detailed sketch is shown in location reference C2. S2, S3 and S5 close on M.W., S1, S4 and S6 close on L.W.

Warning.—Transistors may be permanently damaged if the full negative battery voltage is connected to their bases, or if continuity measurements are made with the transistor in circuit.