3 TYPE A76

PART MOUNTED IN CASE BOTTOM

#442-54 U4

S4 ORG BRN RED

4.5V

OUT GND IN

+5

C6 .68

D4 56-89

(4) 57-65 D8 D9 D11 D12

Q8 417-865

+5 A

C13 .68

D5 56-56

442-627 OUT U5 IN GND

D6 56-56

Q6 417-235

R18 10K

R19 10K

Q7 417-801

R21 10K

R22 10K

R23 1000

D7 56-56

R24 2200

C7 2.2

C8 470

R25 2200

D13 56-56

R1 270

C9 220

U6A 443-603

U6B

U6C

U6D

PORT Ø 7 0 — 16 17 18 19 6 5 4 3

U2 443-933 — CE2 OD CE1 R/W — 1 2 3 4 7 6 5 21 — 17 18 19 20 — 9 10 11 12 13 14 15 16

U3 443-933 — CE2 OD CE1 R/W — 1 2 3 4 7 6 5 21 — 17 18 19 20 — 9 10 11 12 13 14 15 16

PORT 4 7 ø — 15 14 13 12 11 10 9 8

STROBE 7

U7 443-879 — 3 4 6 11 13 14 — 2 5 7 10 12 15

U9A 443-706 — 2 1 3 9

U8A 443-701 — 5 4

U1 444-69

PORT 5 7 ø — 26 27 28 29 30 31 32 33

U9B 443-706 — 5 6 4

R29 10K

Q11 417-801

+5

R31 270

R32 270

Q14 417-294

R36 10K

Q12 417-801

COF OFF

R33 100K

Q15 417-235

R34 100K

R35 3300

Q16 417-927

-3V

Q13 417-865

R37 1000

R38 500 VOLUME

FACTORY FIX

ADD .01

CUT

C4 .01

R39 100K PITCH

R3 10K

R4 18K

U9C 443-706 — 9 8 10

Q1 417-801

R2 10K

-3V SOURCE

C5 .02

Q17 417-864

D3 56-89

C2 10

U9D 443-706 — 12 13 11

U8B 443-701 — 7 6

D2 56-89

C3 10

Q18 417-865

R41 1000

R14 3300

U11A 443-607 — 5 3 2 4

C24 82pF

PADDLE R12 10K

U8C 443-701

C11 56PF

U8D 443-701

R16 10K

Q2 417-801

R5 10K

R6 10K

R9 10K

Q4 417-801

C14 .1

LEFTHAND OPTION

R15 3300

Q3 417-801

R7 10K

U11B 443-607 — 12 11 10

C25 82pF

PADDLE R13 10K

U8E 443-701

C12 56PF

U8F 443-701

R17 10K

R8 10K

Q5 417-801

C15 .1

Y1 404-238 3579.545 KHZ

XTL1 1

XTL2 2

D1 56-56

C1 10

RESET 39

EXT. INT. 38

PORT 1 7 ø — 25 24 23 22 34 35 36 37

P1 — 1 2 3 4 5 12 11 10 9 6 7 8 14 13

SWITCH LABEL

*SEE "KEYPAD SWITCHING PATTERN" TABLE

+5V

C16

SCHEMA
HEA
SA
µMATI

NOTES:

1. PARTS ARE NUMBERED IN T
   1-49 PARTS ON THE MAI
   100-109 PARTS ON THE LED
   200-209 PARTS ON THE CAS
2. ALL RESISTORS ARE 1/4-W
   RESISTOR VALUES ARE IN
3. CAPACITOR VALUES ARE I
4. ▽ THIS SYMBOL INDICAT
5. ○ THIS SYMBOL WITH A
   A WIRE CONNECTED TO
6. →>— THIS SYMBOL INDICAT

External option add for hi-current negative keying

620

1N4006
NTE-125
1000V/2.5 A

•KEYPAD S

PRESS KEY
OFF
ON
TUNE
STOP
P/C
LOAD
SEND
WPM
SPC'
WT
RPT
PRA
0
1
2
3
4
5
6
7
8
9

IC Vcc AND

IC	GND PIN
U1	20, 21
U2	8
U3	8
U4	
U5	
U6	7
U7	8
U8	8
U9	7
U11	6, 7, 8

SCHEMATIC OF THE HEATHKIT® SA-5010 μMATIC KEYER

NOTES:

1. PARTS ARE NUMBERED IN THE FOLLOWING GROUPS:
   1-49 PARTS ON THE MAIN CIRCUIT BOARD.
   100-109 PARTS ON THE LED CIRCUIT BOARD.
   200-209 PARTS ON THE CASE.
2. ALL RESISTORS ARE 1/4-WATT, 5% UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (K=1000, M=1,000,000).
3. CAPACITOR VALUES ARE IN μF UNLESS MARKED OTHERWISE.
4. ⏚ THIS SYMBOL INDICATES A CIRCUIT BOARD GROUND.
5. ○ THIS SYMBOL WITH A LETTER OR NUMBER IN IT INDICATES A WIRE CONNECTED TO THE CIRCUIT BOARD.
6. →>— THIS SYMBOL INDICATES A PLUG-IN CONNECTION.

*KEYPAD SWITCHING PATTERN

PRESSED KEY	PINS CONNECTED
OFF	9, 14
ON	9, 13
TUNE	1, 9
STOP	2, 6
P/C	6, 11
LOAD	6, 10
SEND	3, 6
WPM	2, 7
SPC'G	3, 7
WT	7, 11
RPT	7, 12
PRAC	6, 12
0	5, 8
1	8, 11
2	4, 8
3	2, 8
4	8, 12
5	8, 10
6	3, 8
7	7, 10
8	5, 7
9	4, 7

IC Vcc AND GROUND PIN CONNECTIONS

IC	GND PIN #	+5V PIN #	+5A PIN #
U1	20, 21	40	
U2	8		22
U3	8		22
U4			
U5			
U6	7		
U7	8	1, 16	
U8	8	1	
U9	7	14	
U11	6, 7, 8	14	