



- NOTES:
- 1) RESISTORS ARE 1/2W, 10% UNLESS MARKED DIFFERENTLY.
 - 2) HEATHKIT DID NOT SPECIFY MOST CAPACITOR VOLTAGES IN THE MANUAL OR REPLACEMENT PARTS LIST, AND STUDY OF TWO DIFFERENT IM-1212 METERS REVEALED THAT MOST CAPACITORS WERE NOT PHYSICALLY MARKED WITH THEIR VOLTAGE. WHERE CAPACITOR VOLTAGES ARE SHOWN ON THIS SCHEMATIC, THEY ARE BEST GUESSES BASED ON AVAILABLE EVIDENCE.
 - 3) SWITCH SW1 IS THE 'FUNCTION SWITCH', WITH POSITIONS FROM LEFT TO RIGHT (CLOCKWISE) OF OFF, DC mA, DC V, AC V, AC mA, K OHMS (200 Ω), 2, 20, 200, 2K. SWITCH CONTACTS ARE SHOWN REFERENCED TO INDIVIDUAL WAFERS AND WAFER SIDE. FOR EXAMPLE, 'SW2-1F' MEANS SWITCH SW2, WAFER 1, FRONT SIDE OF WAFER (WAFER 1 IS THE CLOSEST TO THE KNOB END OF THE SWITCH, OR FRONT OF THE METER, AND 'FRONT' AND 'REAR' OF WAFERS ARE IN THE SAME RELATION TO THE FRONT OF THE METER). IN SOME INSTANCES, THERE MAY BE MORE THAN ONE SWITCH CIRCUIT ON A GIVEN SIDE OF A GIVEN WAFER.
 - 4) ALL GROUNDS SHOWN ARE CIRCUIT GROUND, EXCEPT ONE POINT WHERE THE POWER SUPPLY CONNECTS TO CHASSIS GROUND NEAR C118 (A DIFFERENT SYMBOL IS USED), AND THE POWER CORD IS ALSO GROUNDED TO THE CHASSIS, SHOWN WITH THE SAME SPECIAL SYMBOL.
 - 5) THIS SCHEMATIC WAS DRAWN USING AUTOCAD AS A MEANS TO FINALLY GET A LEGIBLE SCHEMATIC FOR THE HEATHKIT IM-1212 AND SIMILAR METER MODELS. THE ORIGINAL USER MANUAL SCHEMATICS ARE DRAWN VERY SMALL, AND DO NOT REPRODUCE LEGIBLY, ESPECIALLY THE TEXT, AND EFFORTS TO SCAN AND REPRINT FROM THE ORIGINALS USUALLY RESULTS IN ILLEGIBLE COPIES. ON THIS NEW VERSION, AN EFFORT HAS BEEN MADE TO SIZE AND SCALE COMPONENTS AND TEXT FOR THE LARGEST AND BEST VISIBILITY AND LEGIBILITY WHILE STILL FITTING ON A NORMAL 11 X 17" SHEET OF PAPER.
 - 6) THE OLDER BUT SIMILAR IM-1202 METER SHARES AN ALMOST IDENTICAL CIRCUIT TO THE IM-1212. THE PRIMARY DIFFERENCE BEING THAT THE IM-1202 HAS AN ADDITIONAL POLARITY SELECTION SWITCH WHILE THE IM-1212 DOES NOT. THE FUNCTION AND RANGE SWITCHES ARE CONNECTED TO THE CIRCUIT BOARD(S) IN DIFFERENT WAYS ON THE TWO MODELS, AND THE IM-1212 USES A SINGLE CIRCUIT BOARD WHILE THE IM-1202 USES 'MAIN' AND 'LOGIC' CIRCUIT BOARDS. THE DESIGNATIONS 'V1' AND 'V2' FOR THE TWO NIXIE TUBES ARE REVERSED BETWEEN THE TWO MODELS. THERE ARE ALSO A FEW SUBTLE COMPONENT VALUE DIFFERENCES BETWEEN THE TWO MODELS. THERE IS A CORRESPONDING IM-1202 SCHEMATIC TO THIS ONE, FROM THE SAME SOURCE.
 - 7) TRANSISTOR Q3 IS DELIBERATELY USED 'UPSIDE DOWN/INVERTED' IN THIS CIRCUIT. A BIPOLAR TRANSISTOR (BJT) USED THIS WAY FUNCTIONS BETTER AS A 'ANALOG SWITCH'.
 - 8) WHILE THIS SCHEMATIC FOLLOWS THE GENERAL LAYOUT OF THE ORIGINAL HEATHKIT SCHEMATIC, CERTAIN AREAS HAVE BEEN REORGANIZED OR ADJUSTED FOR BETTER UNDERSTANDING OF THE VARIOUS CIRCUIT SECTIONS.
 - 9) THE COPYRIGHT HOLDER HEREBY GIVES PERMISSION TO FREELY DISTRIBUTE THIS DOCUMENT, AS LONG AS NO ALTERATIONS ARE MADE AND CREDIT IS GIVEN, ALONG WITH THE COPYRIGHT NOTICE.

ALL CIRCUITS IN SMALL DASHED LINE OUTLINES ARE ON THE PRINTED CIRCUIT BOARD
 CIRCUIT BELOW IN BOLD DASHED LINES IS CHASSIS WIRING, NOT ON THE CIRCUIT BOARD
 SWITCH CIRCUITS ARE NOT ON THE CIRCUIT BOARD

TRANSFORMER T1 IS SHOWN WIRED FOR 110 ~ 130VAC POWER. FOR 220 ~ 260VAC POWER, REMOVE JUMPERS T1J1 & T1J2, AND INSTALL A JUMPER BETWEEN TRANSFORMER TERMINALS 2 & 3 (AC POWER WILL REMAIN CONNECTED TO TERMINALS 1 & 4), AND FUSE F2 WILL BE 1/16A, 3AG.

HEATHKIT DIGITAL MULTIMETER IM-1212 SCHEMATIC DIAGRAM