

**SCHEMATIC OF THE
HEATHKIT®
AM/FM STEREO DIGITAL TUNER
MODEL AJ-1600**

NOTES:

1. ALL RESISTORS ARE 1/4 WATT, 5% TOLERANCE UNLESS OTHERWISE NOTED. 1K=1,000, M=1,000,000.
2. CAPACITORS LESS THAN 1 ARE IN pF (MICROFARADS). ALL OTHER CAPACITORS ARE IN µF (PICOFARADS) UNLESS OTHERWISE NOTED.
3. COMPONENT NUMBERS ARE IN THE FOLLOWING GROUPS:
1-99 PARTS IN THE TUNER ASSEMBLY OR MOUNTED ON THE CHASSIS.

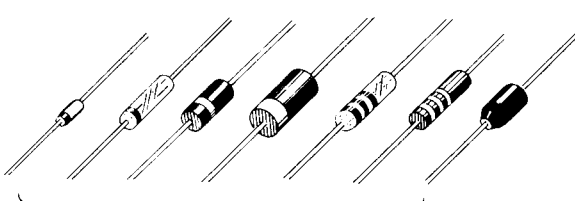
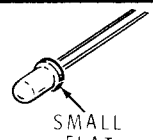
- 101-150 PARTS MOUNTED ON THE AM CIRCUIT BOARD.
 - 175-199 PARTS MOUNTED ON THE FM DIVIDER CIRCUIT BOARD.
 - 201-349 PARTS MOUNTED ON THE FM IF CIRCUIT BOARD.
 - 350-359 PARTS MOUNTED ON THE OUTPUT CIRCUIT BOARD.
 - 401-499 PARTS MOUNTED ON THE DISPLAY CIRCUIT BOARD.
 - 500-599 PARTS MOUNTED ON THE SWITCH CIRCUIT BOARD.
 - 601-699 PARTS MOUNTED ON THE POWER SUPPLY CIRCUIT BOARD.
- ** PARTS MOUNTED ON LED CIRCUIT BOARD. NOTE: PL1 AND PL2 ARE MOUNTED ON THE LAMP CIRCUIT BOARD.
4. THE FOLLOWING SYMBOLS ARE USED ON THE SCHEMATIC.
⊕ THIS SYMBOL INDICATES A CHASSIS GROUND.
▽ THIS SYMBOL INDICATES A CIRCUIT BOARD GROUND.

- ⊕ THIS SYMBOL INDICATES A CIRCUIT BOARD PLUG CONNECTION (PIN NUMBER INDICATED).
- ▽ THIS SYMBOL INDICATES A CONNECTION TO A CIRCUIT VOLTAGE SUPPLY.
- ⊖ THIS SYMBOL INDICATES A POWER SUPPLY VOLTAGE SOURCE.
- ⊖ THIS SYMBOL INDICATES A DC VOLTAGE TAKEN FROM THE POINT INDICATED WITH A HIGH IMPEDANCE VOLTMETER TO CHASSIS GROUND. ALSO INDICATES DC VOLTAGES AT MUTE CIRCUITS IN MUTED CONDITION.
- ⊖ THIS SYMBOL INDICATES DC VOLTAGES AROUND MUTE CIRCUITRY IN UNMUTED CONDITION.
- ⊖ THIS SYMBOL INDICATES AN OPERATING DC VOLTAGE IN AM MODE ONLY.
- ** ORDER ONLY DIRECT-REPLACEMENTS, BY HEATHKIT PART NUMBER.

5. FOR THE PHYSICAL LOCATION TO COMPONENTS, REFER TO THE "CIRCUIT BOARD X-RAY VIEWS," STARTING ON PAGE 116.

SEMICONDUCTOR IDENTIFICATION CHARTS

DIODES

COMPONENT	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
D202, D203	56-26	1N191	 <p style="text-align: center;">BANDIED END</p>
D204, D205	56-27	S160	
D201, D206, D401, D402, D403	56-56	1N4149	
D608	56-64	MZ1000-24 (30-volt)	
D607	56-620	1N4744A, 17 mA zener (15-volt)	
D207, D601 through D606	57-65	1N4002	
D1, D2, D3	412-632	LED	 <p style="text-align: center;">SMALL FLAT</p>



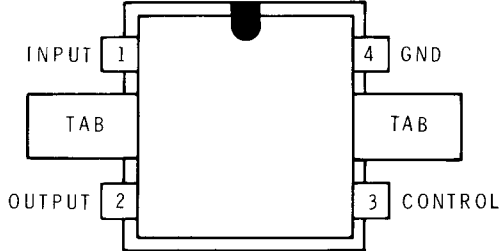
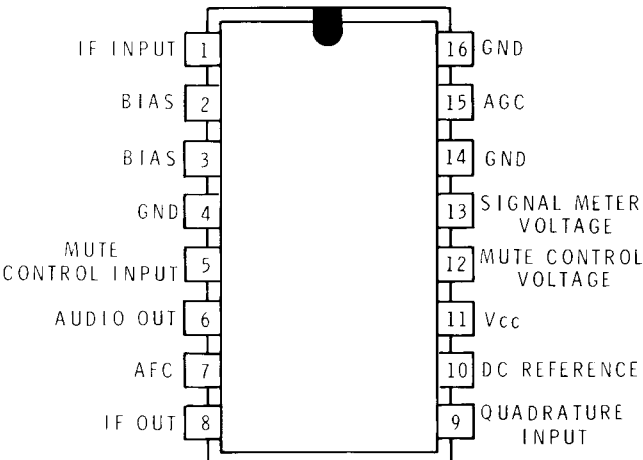
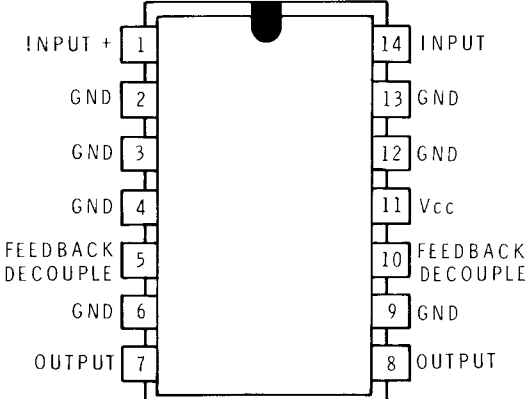
TRANSISTORS

COMPONENTS	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
Q204, Q215, Q216, Q219, Q351, Q353	417-283	SM07275	
Q202, Q203, Q206, Q217, Q218, Q221, Q222, Q352, Q354	417-284	SM62186	
Q175, Q176	417-293	2N5770	
Q101, Q201, Q211, Q213, Q214	417-801	MPSA20	
Q102, Q205, Q207, Q208, Q209, Q401, Q402	417-875	2N3904	
Q103, Q104, Q177, Q212	417-881	MPSA13	
Q175	417-869	DS8629	
Q601	417-918	2N6387	

INTEGRATED CIRCUITS (TOP VIEWS)

COMPONENTS	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
U201 through U205	442-20	UA703	

Integrated Circuits (cont'd.)

COMPONENTS	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
IC601	442-617	UA78MGT2C	 <p>HEAT SINK TABS ARE CONNECTED TO GND</p>
U206	442-637	HA1137	
U207, U208	442-657	MC1355	



Integrated Circuits (cont'd.)

COMPONENTS	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
U101	442-658	HA1197	
U403, U404	442-659	UDN6128A	
U209	442-673	HA11223	

Integrated Circuits (cont'd.)

COMPONENTS	HEATH PART NUMBER	MAY BE REPLACED WITH	IDENTIFICATION
U402	443-701	MC14049	<p>Pinout diagram for MC14049. Pins 1-8 are on the left, 9-16 on the right. Vcc is at pin 1, Vss at pin 8. Pins 16 and 13 are NC. Internal blocks A-F are shown.</p>
U401	443-870	A438112	<p>Pinout diagram for A438112. Pins 1-14 on the left, 15-28 on the right. Vcc at pin 28, GND at pin 14. Functions include AM FREQ, FM FREQ, AM/FM, INHIBIT TIME SET, TEST, PRESET, OSCILLATOR 1 & 2, FM/IF ADJUST, DIGIT 1-4, and SEGMENT A-G.</p>
U175	443-869	DS8629	<p>Pinout diagram for DS8629. Pins 1-4 on the left, 5-8 on the right. Functions include (TTL) Vcc2, OUTPUT, (TTL) GND2, (ECL BUFFER), Vcc1 (ECL/BUFFER), INPUT (POSITIVE-EDGE TRIGGERED), INPUT (NEGATIVE-EDGE TRIGGERED), and BIAS.</p>