

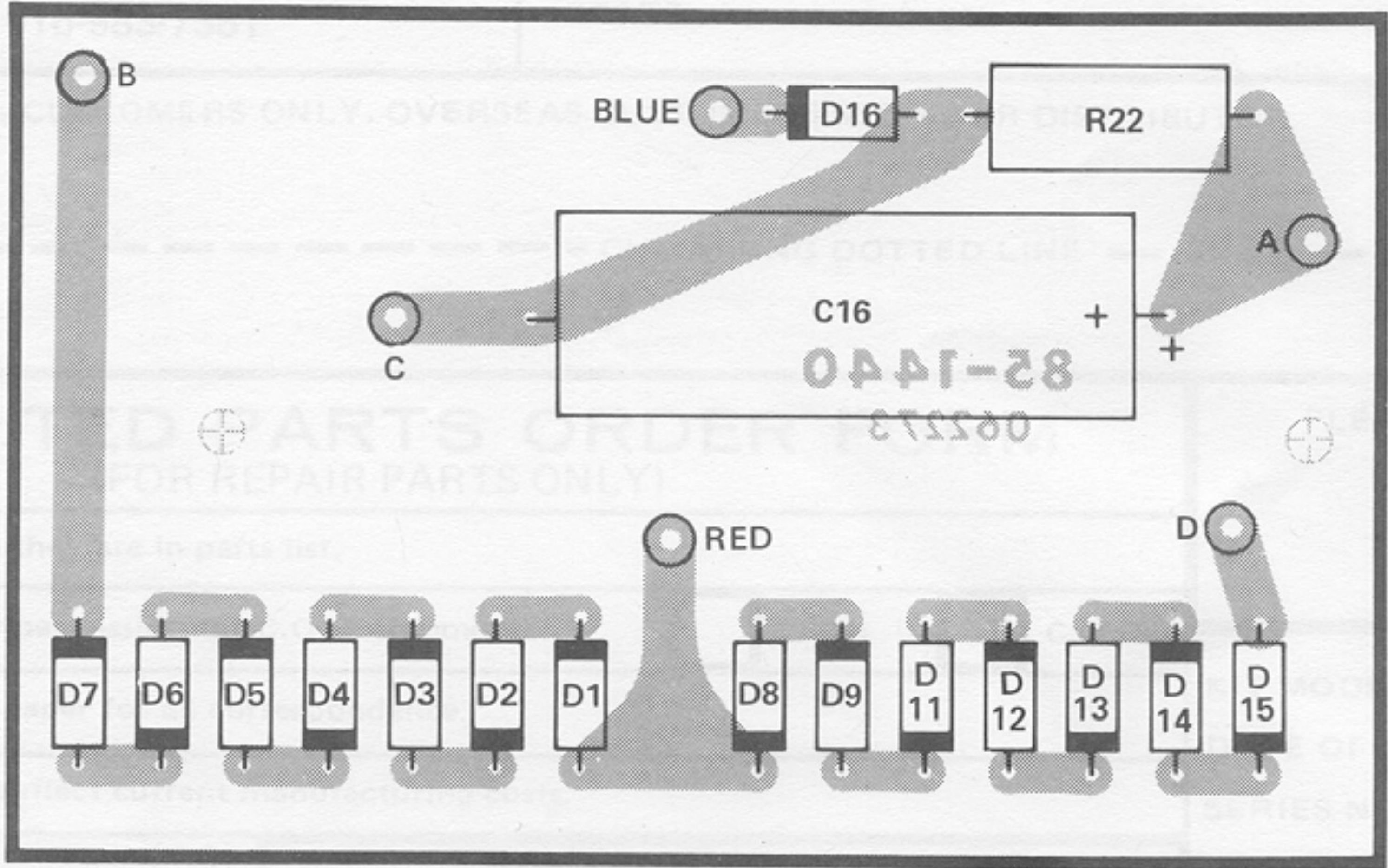
# CIRCUIT BOARD X-RAY VIEWS

NOTE: To find the PART NUMBER of a component for the purpose of ordering a replacement part:

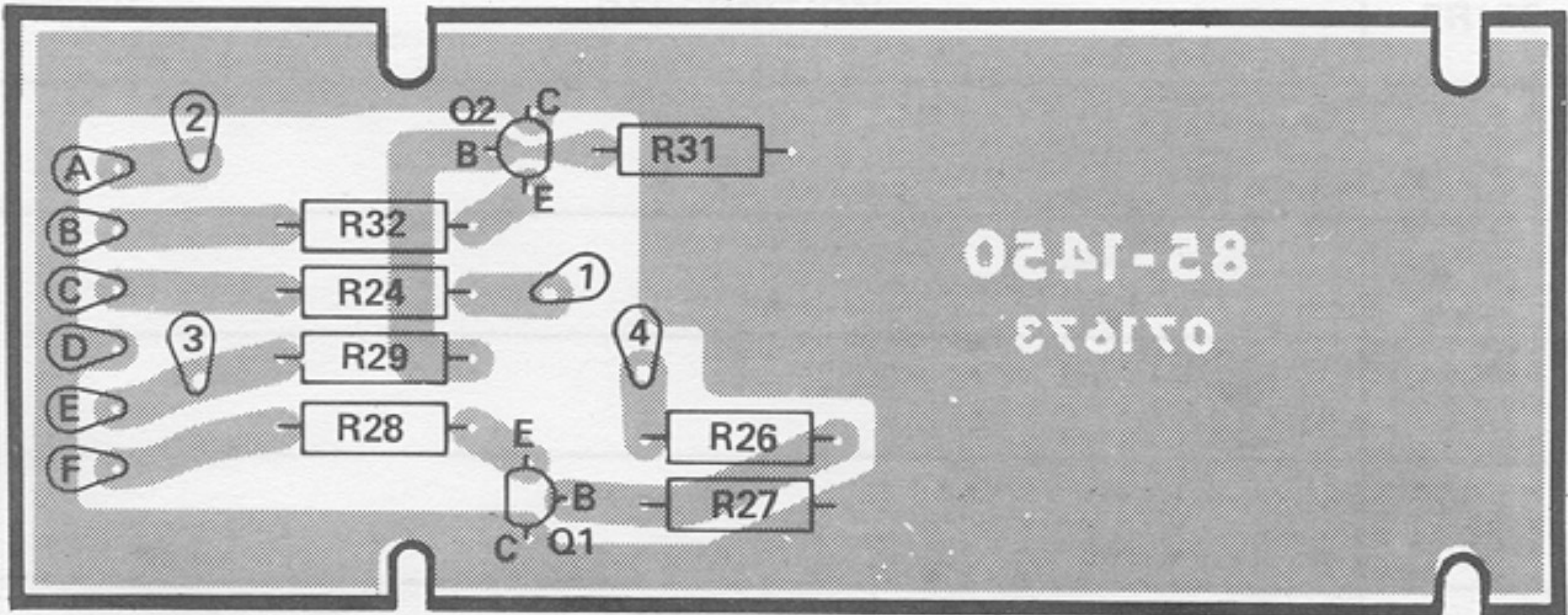
A. Find the circuit component number (R5, C3, etc.) on the "X-Ray View" or "Chassis Photographs."

B. Locate this same number in the "Circuit Component Number" column of the "Parts List."

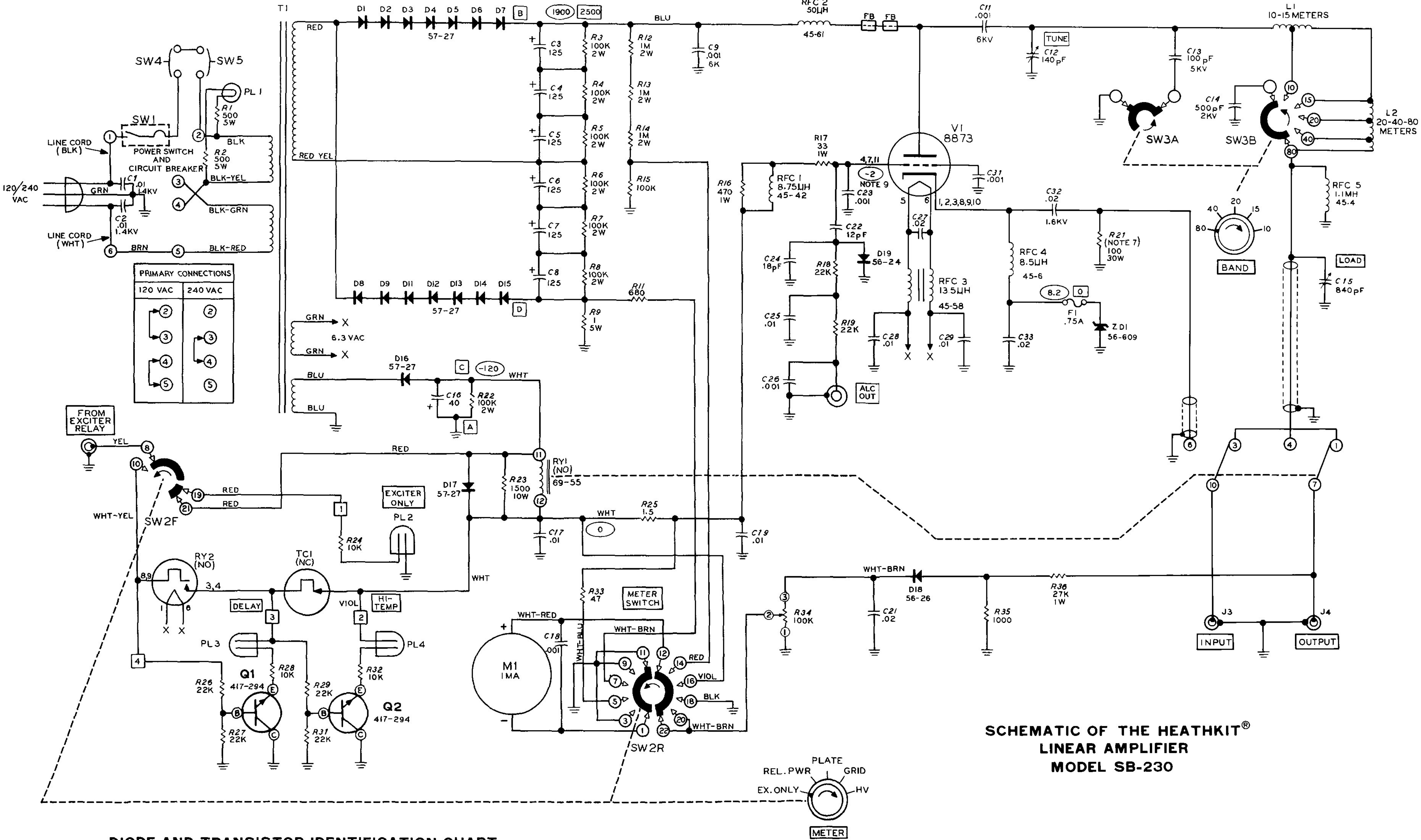
C. Adjacent to the circuit component number, you will find the PART NUMBER and DESCRIPTION which must be supplied when you order a replacement part.



(Viewed from component side)



(Viewed from component side)



SCHEMATIC OF THE HEATHKIT®  
LINEAR AMPLIFIER  
MODEL SB-230

## DIODE AND TRANSISTOR IDENTIFICATION CHART

COMPONENT	HEATH PART NO.	MAY BE REPLACED WITH	IDENTIFICATION
D1 THROUGH D17 D18 D19 ZD1	57-27 56-26 56-24 56-609	1N2071 1N191 1N458 1N280GA (8.2V, 1.5A)	NOTE: DIODES MAY BE SUPPLIED IN ANY OF THE FOLLOWING FIVE SHAPES. HEATH PART NUMBERS ARE STAMPED ON MOST DIODES. 
Q1, Q2	417-294	MPSA42	

### NOTES:

- ALL RESISTOR VALUES ARE IN OHMS (K=1,000; M=1,000,000).
- ALL CAPACITOR VALUES ARE IN MICROFARADS UNLESS OTHERWISE MARKED (PF=PICOFARADS).
- RELAY CONTACTS ARE IN THE INACTIVATED POSITION (RECEIVE OR EXCITER ONLY).
- SWITCH CONTACTS ARE SHOWN REAR VIEW. THE SWITCH POSITION IS SHOWN IN THE KNOB VIEW. AN ARROW SHOWS SWITCH MOVEMENT WITH CLOCKWISE ROTATION OF THE KNOB.
- REFER TO THE CHASSIS PHOTOGRAPHS AND X-RAY VIEWS FOR THE ACTUAL LOCATION OF PARTS.

- K = 1,000  
KV = KILOVOLTS  
M = 1,000,000  
MH = MILLIHENRIES
- pF = PICOFARADS  
PL = PILOT LAMP  
T.S. = THERMAL SWITCH  
μH = MICROHENRIES
- R21 IS COMPOSED OF FIFTEEN 1500Ω, 2-WATT RESISTORS CONNECTED IN PARALLEL TO FORM A 100Ω, 30 WATT RESISTANCE.
- = DC VOLTS AT 500mA PLATE CURRENT.  
 = DC VOLTS AT 25mA PLATE CURRENT.  
 = CIRCUIT BOARD HOLE OR PIN.  
 = FERRITE BEAD
- GRID VOLTS = -110V WITH METER SWITCH AT "EXCITER ONLY".





EXPEDITED PARTS ORDER FORM (FOR REPAIR PARTS ONLY)				PLEASE DO NOT WRITE IN THIS SPACE																							
(1) Give Part Numbers as they are in parts list.				KIT MODEL _____ DATE OF PURCHASE _____ SERIES NUMBER _____																							
(2) Include remittance or permission for C.O.D. shipment.		<input type="checkbox"/> CASH <input type="checkbox"/> C.O.D.																									
(3) Use separate sheet of paper for all correspondence.																											
(4) Prices may change to reflect current manufacturing costs.																											
(5) Current <b>HEATH</b> account number		AA		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">MARK PROPER SPACE FOR WARRANTY PARTS ONLY</th> </tr> <tr> <th style="text-align: center;">3 DAMAGED</th> <th style="text-align: center;">2 DEFECTIVE</th> <th style="text-align: center;">1 MISSING</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>			MARK PROPER SPACE FOR WARRANTY PARTS ONLY			3 DAMAGED	2 DEFECTIVE	1 MISSING															
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QTY.	PART NUMBER	DESCRIPTION	PRICE	TOTAL PRICE																							
<b>HEATH COMPANY</b> BENTON HARBOR MICHIGAN 49022 PHONE 616-983-7381			NAME _____ ADDRESS _____ CITY _____ STATE _____ ZIP _____																								

THIS FORM IS FOR U.S. CUSTOMERS ONLY. OVERSEAS CUSTOMERS SEE YOUR DISTRIBUTOR.

----- CUT ALONG DOTTED LINE -----

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# CUSTOMER SERVICE

## REPLACEMENT PARTS

If you need a replacement part, please fill in the Parts Order Form that is furnished and mail it to the Heath Company. Or, if you write a letter, include the:

- Part number and description as shown in the Parts List.
- Model number and Series number from the blue and white label.
- Date of purchase.
- Nature of the defect.

Please do not return parts to the factory unless they are requested. Parts that are damaged through carelessness or misuse by the kit builder will not be replaced without cost, and will not be considered in warranty.

Parts are also available at the Heathkit Electronic Centers listed in your catalog. Be sure to provide the Heath part number. Bring in the original part when you request a warranty replacement from a Heathkit Electronic Center.

NOTE: Replacement parts are maintained specifically to repair Heathkit products. Parts sales for other reasons will be declined.

## TECHNICAL CONSULTATION

Need help with your Heathkit? . . . . Self-Service? . . . . Construction? . . . . Operation? . . . . Call or write for assistance. You'll find our Technical Consultants eager to help with just about any technical problem except "customizing" for unique applications.

The effectiveness of our consultation service depends on the information you furnish. Be sure to tell us:

- The Model number and Series number from the blue and white label.
- The date of purchase.
- An exact description of the difficulty.
- Everything you have done in attempting to correct the problem.

Also include switch positions, connections to other units, operating procedures, voltage readings, and any other information you think might be helpful.

Please do not send parts for testing, unless this is specifically requested by our Consultants.

Hints: Telephone traffic is lightest at midweek. . . please be sure your Manual and notes are on hand when you call.

Heathkit Electronic Center facilities are also available for telephone or "walk-in" personal assistance.

## REPAIR SERVICE

Service facilities are available, if they are needed, to repair your completed kit. (Kits that have been modified, soldered with paste flux or acid core solder, cannot be accepted for repair.)

If it is convenient, personally deliver your kit to a Heathkit Electronic Center. For warranty parts replacement, supply a copy of the invoice or sales slip.

If you prefer to ship your kit to the factory, attach a letter containing the following information directly to the unit:

- Your name and address.
- Date of purchase.
- Copies of all correspondence relevant to the service of the kit.
- A brief description of the difficulty.
- Authorization to return your kit C.O.D. for the service and shipping charges. (This will reduce the possibility of delay.)

Check the equipment to see that all screws and parts are secured. (Do not include any wooden cabinets or color television picture tubes, as these are easily damaged in shipment.) Place the equipment in a strong carton with at least THREE INCHES of *resilient* packing material (shredded paper, excelsior, etc.) on all sides. Use additional packing material where there are protrusions (control sticks, large knobs, etc.). If the unit weighs over 15 lbs., place this carton in another one with 3/4" of packing material between the two.

Seal the carton with reinforced gummed tape, tie it with a strong cord, and mark it "Fragile" on at least two sides. Remember, the carrier will not accept liability for shipping damage if the unit is insufficiently packed. Ship by prepaid express, United Parcel Service, or insured Parcel Post to:

Heath Company  
Service Department  
Benton Harbor, Michigan 49022



HEATH

**Schlumberger**

HEATH COMPANY • BENTON HARBOR, MICHIGAN  
***THE WORLD'S FINEST ELECTRONIC EQUIPMENT IN KIT FORM***

LITHO IN U.S.A.