

**Radio Shack®**

# **Service** Manual

**20-148A**

## **ADDENDUM**

---

**TO SERVICE MANUAL FOR  
Cat. No. 20-148**

**PRO-2026  
100-CHANNEL DIRECT ENTRY  
PROGRAMMABLE SCANNER**

**Catalog Number: 20-148A**

The 20-148A is very much like the 20-148. This addendum only notes how the 20-148A is different from the 20-148. A separate, complete service manual for the 20-148A will not be issued. Refer to the 20-148 service manual for items not covered in this addendum.

The parts marked  are different from the basic manual.

© 1993 Tandy Corporation.  
All Rights Reserved.

Radio Shack is a registered trademark used by Tandy Corporation.

# SPECIFICATIONS

Basic Manual Page 2

External Jacks:

ANT. Jack (BNC Type)

Earphone Jack (3.5ø)

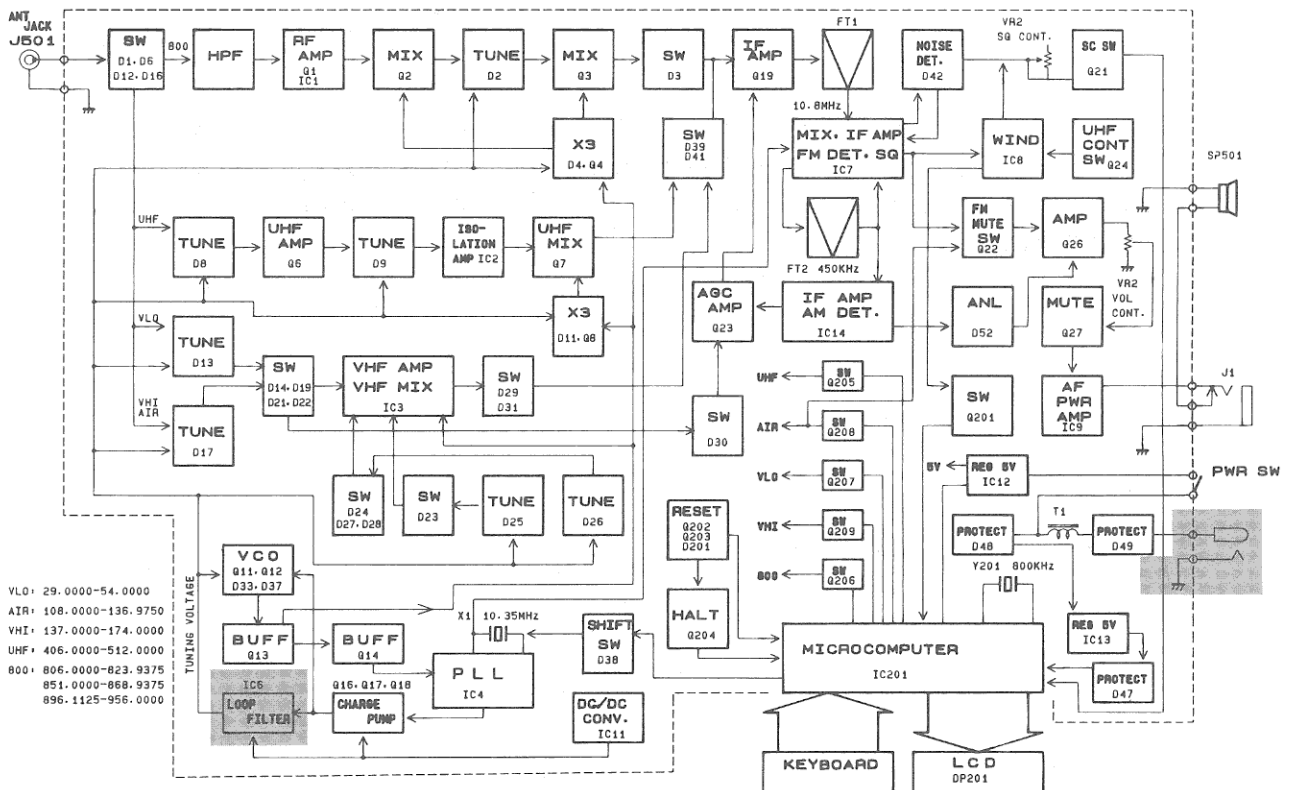
DC Power Jack (5.5ø)

Basic Manual Page 3

Item	Unit	Nominal	Limit
Current Drain (at full output)	mA DC	420	300 - 500
(squelched)	mA DC	230	300
(keep alive)	within 30 minutes	mA DC	0.2
	after 30 minutes	µA DC	5
Memory Backup Time	Day	more than 14	14

# BLOCK DIAGRAM

Basic Manual Page 4



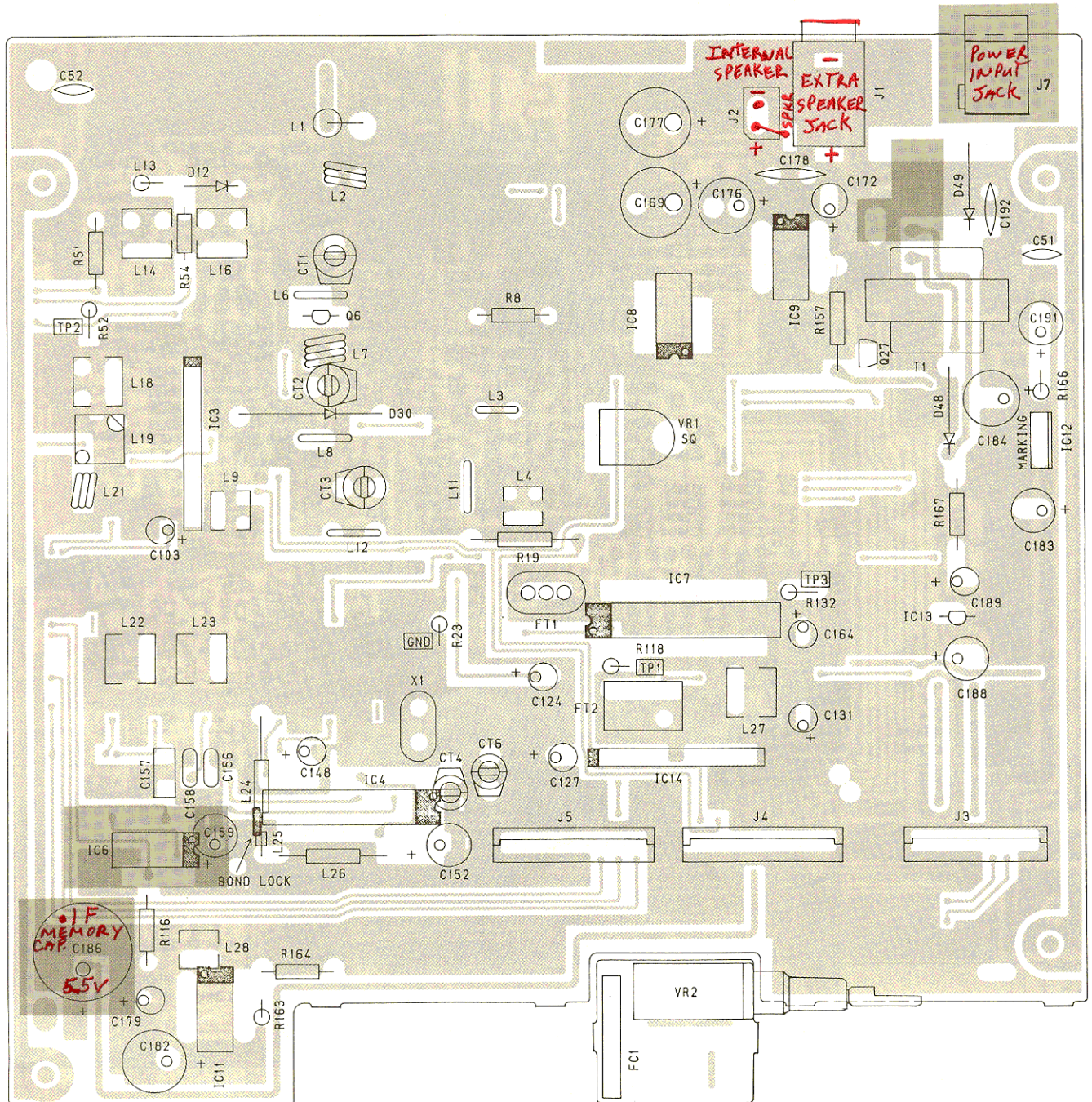
# PRINTED CIRCUIT BOARDS

Basic Manual Page 14

Main PCB (Top View)

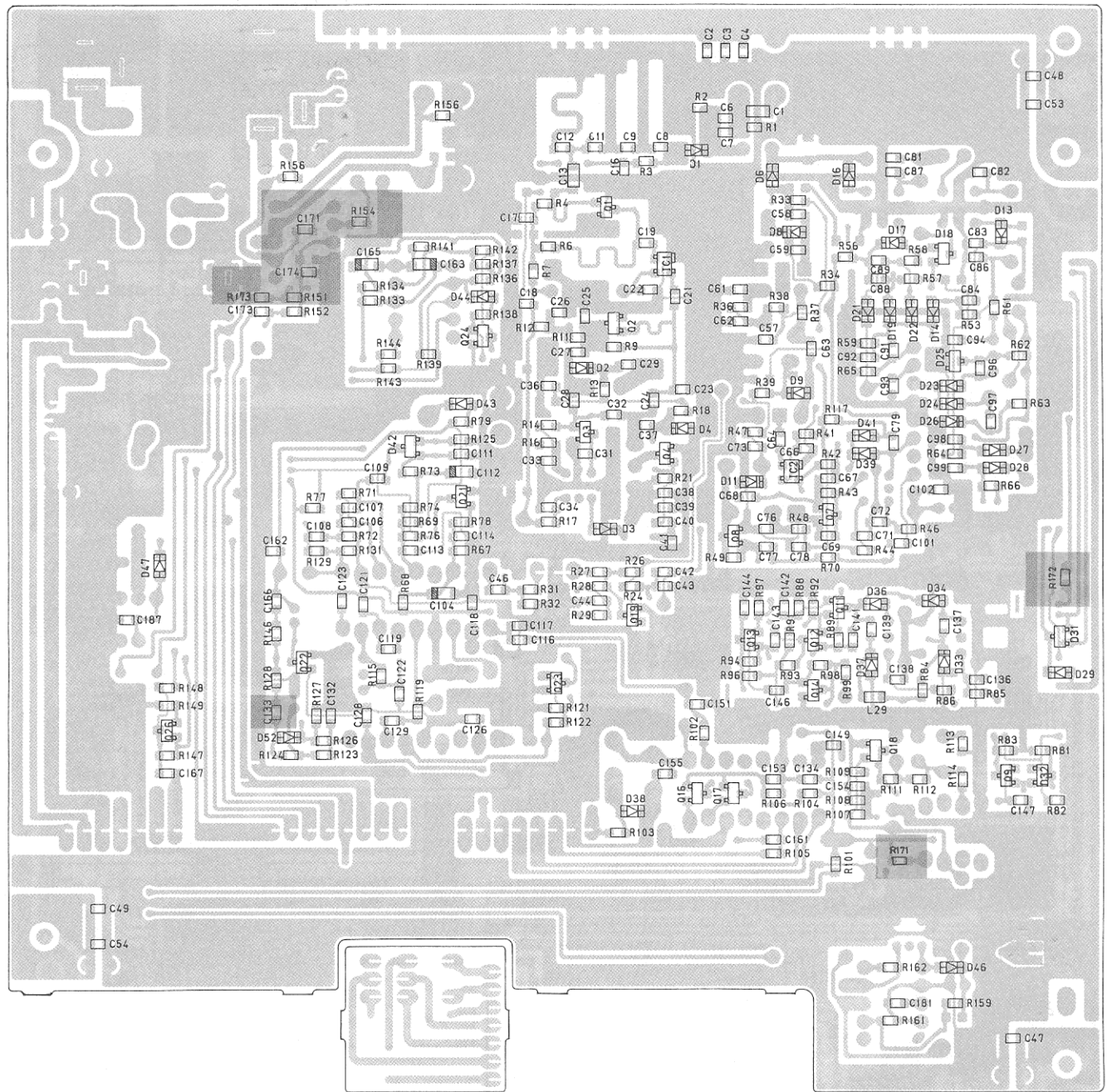
(SLEEVE)  
(TIP IS +)

SLEEVE CENTER  
GND +12VDC





# Main PCB (Bottom View and Chip Parts Locations)



IC1, 2  
4 PIN 1  
3 2  
UPC1675G





# ELECTRICAL PARTS LIST

Basic Manual Page 21

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Capacitors</b> <b>Note</b> :All capacitors are ceramic M/L* (3216) type unless otherwise specified.			
C123	220PF 50V $\pm 5\%$ CG (CH)		BCXG812214Z
⋮			
C132	0.022 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ812235Z
C133	0.01 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811035Z
C134	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
⋮			
C167	0.01 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ511035Z
C168	-Not Used-		
C169	Electrolytic 470 $\mu$ F 25V $\pm 20\%$ C-130		BCAP514716Z

Basic Manual Page 22

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Capacitors</b> <b>Note</b> :All capacitors are ceramic M/L* (3216) type unless otherwise specified.			
C170	-Not Used-		
C171	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C172	Electrolytic 100 $\mu$ F 16V $\pm 20\%$ C-130		BCAP311016Z
C173	9PF 50V $\pm 0.5\%$ CG(CH)		BCXG819092Z
C174	0.0018 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811825Z
C175	-Not Used-		
⋮			
C185	-Not Used-		
C186	Electrolytic 0.1F 5.5V $+80\%/-20\%$ C-217		BCFN851040Z
C187	0.001 $\mu$ F 50V $\pm 10\%$ C (B)		BCXJ811025Z
⋮			
C192	Ceramic 0.047 $\mu$ F 25V $+80\%/-20\%$ YF(F)		BCKG514730Z
C193	-Not Used-		

LARGER  
CAPACITOR  
IN  
NEWER  
MODEL

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Diodes</b>			
D020	-Not Used-		
⋮			
D050	-Not Used-		
D051	-Not Used-		
D052	HSK120 TR Taping		BDAY0393001
<b>Jacks</b>			
J001	JK-089 HSJ0615		BJKY0089001
⋮			
J005	JK-662 8P		BJKY0662008
J006	-Not Used-		
J007	JK-135 HEC0470-01-230		BJKY0135001

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Resistors</b>			
<b>Note</b> :All resistors are carbon fixed-chip type, unless otherwise specified.			
R085	100 ohm 1/10W $\pm 5\%$ Taping		BRFC011014Z
⋮			
R126	56K ohm 1/10W $\pm 5\%$ Taping		BRFC015634Z
R127	22K ohm 1/10W $\pm 5\%$ Taping		BRFC012234Z
R128	18K ohm 1/10W $\pm 5\%$ Taping		BRFC011834Z
⋮			
R133	100K ohm 1/10W $\pm 5\%$ Taping		BRFC011044Z

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Resistors</b>			
<b>Note :</b> All resistors are carbon fixed-chip type, unless otherwise specified.			
R134 ⋮ R150	680K ohm 1/10W ±5% Taping  -Not Used-		BRFC016844Z
R151	33K ohm 1/10W ±5% Taping		BRFC013334Z
R152	470K ohm 1/10W ±5% Taping		BRFC014744Z
R153 R154	-Not Used- 270 ohm 1/10W ±5% Taping		BRFC012714Z
R155 ⋮ R167	-Not Used-  Carbon AX TS 26 47 ohm 1/6W ±5% Taping		BRPA614704Z
R171	0 ohm 1/10W ±5% Taping		BRFC010004Z
R172	10K ohm 1/10W ±5% Taping		BRFC011034Z
R173	0 ohm 1/10W ±5% Taping		BRFC010004Z
<b>Integrated Circuits</b>			
IC001 ⋮ IC005	RF Amp  -Not Used-		BDEY1190001
IC006	Loop Filter TLC271CP		BDEY0826001
IC007 ⋮ IC012	IF Amp & Detector  Regulator		BDEY0815001
	L78M05CV		BDEY0995001

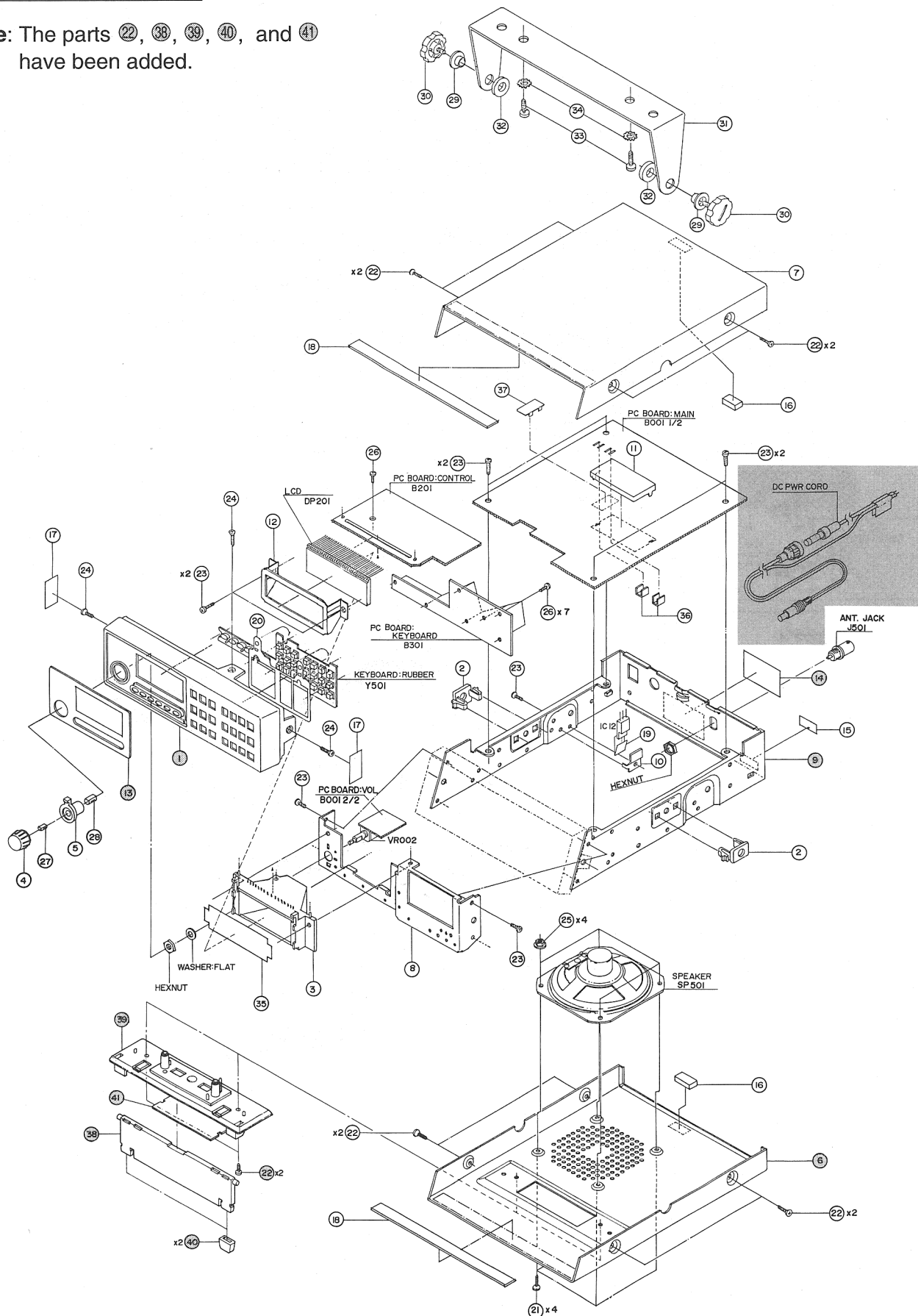
REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Miscellaneous</b>			
T001 ⋮ VR002	Transformer  Variable	TF-374  RV-766 100KA & 100KC	BTFY0374001  BRVY0766001
WA001	DC Power Cord	WZ-647	BWZY0647001
P001	Pilot Lamp	PL-105	BPLY0105001



## DISASSEMBLY/EXPLODED VIEW

Basic Manual Page 34

**Note:** The parts 22, 38, 39, 40, and 41 have been added.



# MECHANICAL PARTS LIST

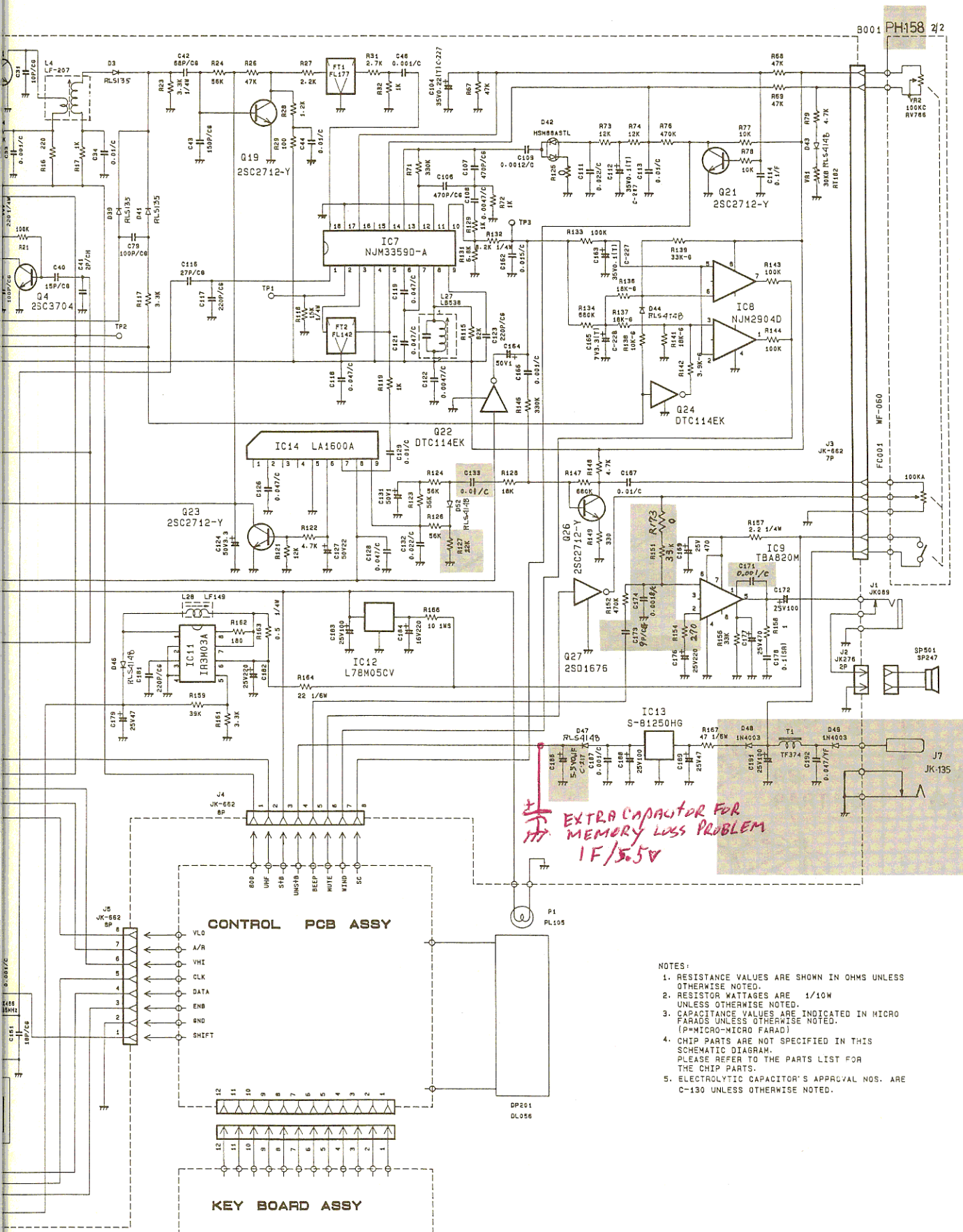
Basic Manual Page 35

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
1	Panel Front ABS (HS-300) Gray		GCMF129226Z
2	Spacer (C) PP Black		GETC416896Z
⋮			
5	Knob, SQ ABS Black		GNBW419528Z
6	Cover, Bottom SBK08 1T		HCMB319530Z
7	Cover, Top SBK08 1T		HCMT319531Z
8	Front Chassis SPCC 1.0T ZMC		HCSF328186Z
9	Chassis SECC 1T		HCSY229076Z
10	Holder, IC SPCC 1.0T ZMC		HHDE481129Z
⋮			
12	Frame, LCD SPTE 0.3T		HSDP428146Z
13	Plate, Display PC 1T Silk		KDPT429241Z
14	Label, FCC Polyester Film 0.05T		PLBF429181Z
15	Label, DOC Polyester 0.05T for CA only		PLBF425731Z
⋮	Label, Production Date Polyester Film 0.05T		PLBS490315A
⋮			
37	Shield Case SPTE 0.3T for CA only		HSDP425745Z
	Front Panel Assembly (Ref. No. 1 and 13)		FRPAAS220ZP
	Chassis Assembly (Ref. No.2,9, and 14)		CHAssy220ZP
	Mounting Bracket Assembly (Ref.No.29,31,32, and 34)		MTBRAS220ZP
38	Stand ABS Black		GCMZ319535A
39	Holder, Stand ABS Black		GHDZ319522Z
40	Foot Urethane Rubber Black		LFUT419541Z
41	Blind PVC 0.5T Black		RBLD423043Z





# IC DIAGRAMS

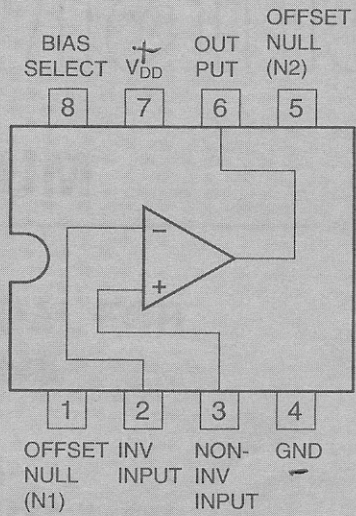
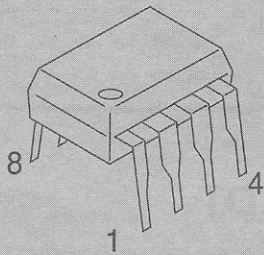


# IC INTERNAL DIAGRAM

Basic Manual Page 43

IC6

TLC271CP



Catalog Number: 20-143A

The 20-143A is a high speed, low power, single channel, single supply, single ended, voltage follower. It is designed for use in a wide variety of applications, including signal conditioning, buffer amplifiers, and active filters. The device is fabricated using advanced CMOS technology, which provides excellent performance characteristics, including low power consumption and high input impedance. The 20-143A is available in a standard 14-pin DIP package, which is compatible with most standard PCB mounting techniques. For more information on the features and applications of the 20-143A, please refer to the data sheet or contact your nearest distributor.

RADIO SHACK  
A Division of Tandy Corporation  
Fort Worth, Texas 76102

© 1985 Tandy Corporation  
All Rights Reserved

Printed in Japan

Printed in Japan

**RADIO SHACK**  
**A Division of Tandy Corporation**  
**Fort Worth, Texas 76102**