SD-3C224-01

SHEET INDEX

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SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWING	J98718SJ
EQUIPMENT DESIGN REQUIREMENTS	J98718 (801-505-153)

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

DWG ISSUE	CD ISSUE	DATE ISSUED
1	1	2-12-85
2A	1 APPX 1A	8-23-85

ISSUE 2A

SD- 3C224-01 IN22

COMMON SYSTEMS

TYPE D3, 24-CHANNEL
PULSE CODE MODULATION BANK
2-WIRE, 900-OHM TRANSMISSION ONLY
CHANNEL UNIT
CIRCUIT

AT&TCO STANDARD

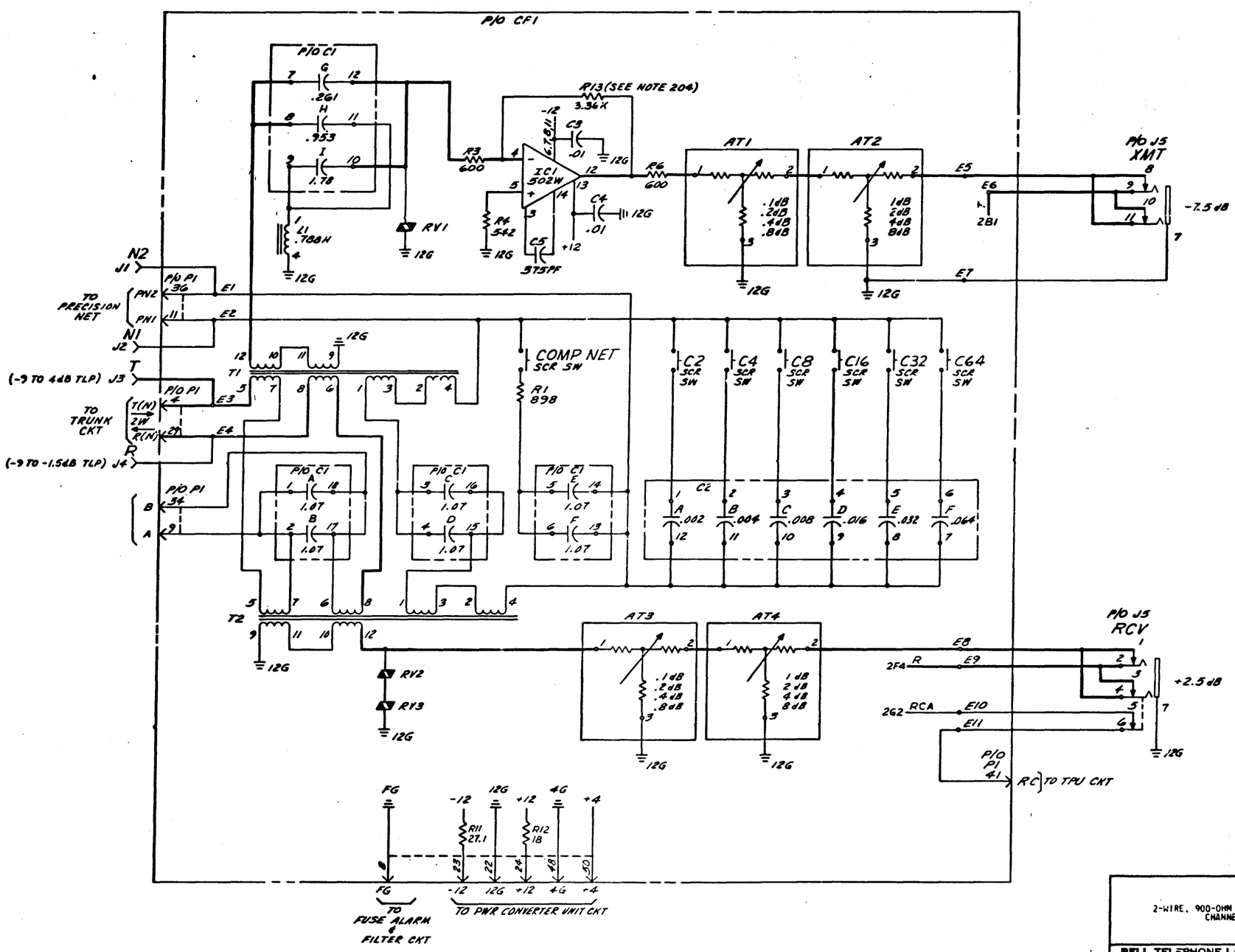
SD-3C224-01-A1

7 SHEETS

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-3C224-01-A1

FS1
TRANSMIT AND RECEIVE CIRCUIT



SHEET 2A

2-WIRE, 900-OHM TRANSMISSION ONLY CHANNEL UNIT

SD-3C224-01-B1

BELL TELEPHONE LABORATORIES INCORPORATED 6S

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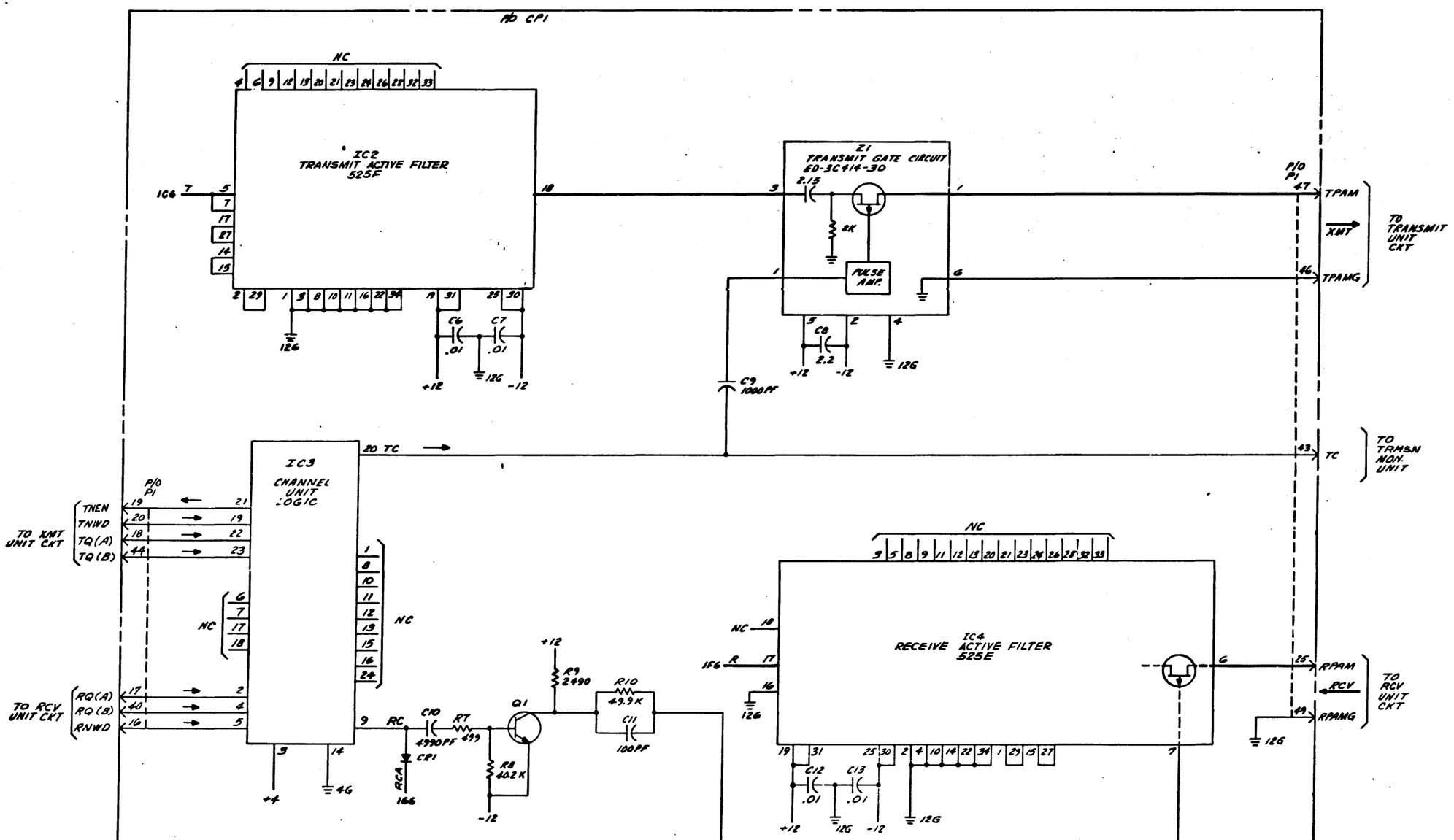
FS 2

SIGNALING CIRCUIT



2-WIRE, 900-OHM TRANSMISSION ONLY CHANNEL UNIT

SD-3C224-01-B2

BELL TELEPHONE LABORATORIES

6S

2-

SD-3C224-01-B2

APP FIG. 1

CONNECTOR

DESIG	LOC	CODE
N1(J2)	1D1	KS-20667,L15
N2(J1)	1C1	KS-20667,L14
T(J3)	1D1	KS-20667,L9
R(J4)	1E1	KS-20667,L13
[1] XMT(J5)	1C7	638AM
[1] RCV(J5)	1G7	638AM

JACK

SEE CONNECTOR

CIRCUIT PACK

DESIG	LOC	CODE
CP1 E/W	1B3,2A3	ED-3C489-( )

ATTENUATOR

DESIG	LOC	CODE
AT1	1B5	50C
AT2	1B6	50E
AT3	1F4	50C
AT4	1F5	50E

CAPACITOR

DESIG	LOC	CODE	
C1A-I	1B2,1E2,1E3,1E4	734B,CAP PACK	
C2A-F	1E5	726K,CAP PACK	
C3	1B4	KS-16048,L4:.01	
C4	1C4	KS-16048,L4:.01	
C5	1C4	KS-16742,L32:375PF	
C6	2C3	KS-16048,L4:.01	
C7	2C3	KS-16048,L4:.01	
C8	2C5	KS-20736,L8:2.2	
C9	2D4	KS-16742,L32:1030PF	
C10	2F3	KS-16742,L32:4990PF	[1]
C11	2F4	KS-16958,L31:100PF	
C12	2G5	KS-16048,L4:.01	
C13	2G5	KS-16048,L4:.01	

DIODE

DESIG	LOC	CODE
CR1	2G2	458C

INDUCTOR

DESIG	LOC	CODE
L1	1C2	16228J,.788H

CIRCUIT PACK (CONT)

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	1C4	502W
IC2	2B2	525F
IC3	2E2	1290
IC4	2F6	525E

NETWORK

DESIG	LOC	CODE
Z1	2B5	ED-3C414-30

RESISTOR

DESIG	LOC	CODE
R1	1D3	KS-20810,L1A,898
R3	1C3	KS-20810,L1A,600
R4	1C3	KS-20810,L1A,542
R6	1C4	KS-20810,L1A,600
R7	2F3	KS-20810,L1A,499
R8	2G3	KS-20810,L1A,40.2K
R9	2F3	KS-20810,L1A,2490
R10	2F4	KS-20810,L1A,49.9K
R11	1H2	KS-20810,L1A,27.1
R12	1H3	KS-20810,L1A,18
R13	1B4	KS-20810,L1A,3.36K

SELECTOR BLOCK

DESIG	LOC	CODE
COMP NET	1D4	P-44P303
C2	1D4	L-900603-2
C4	1D5	L-900603-2
C8	1D5	L-900603-2
C16	1D5	L-900603-2
C32	1D6	L-900603-2
C64	1D6	L-900603-2

TRANSISTOR

DESIG	LOC	CODE
Q1	2F3	66J

TRANSFORMER

DESIG	LOC	CODE
T1	1D2	2663C
T2	1F2	2663C

VARISTOR

DESIG	LOC	CODE
RV1	1C3	106A
RV2	1F3	106A
RV3	1G3	100A

2-WIRE, 900-OHM TRANSMISSION ONLY CHANNEL UNIT

SD-3C224-01-C1

BELL TELEPHONE LABORATORIES INCORPORATED

SHEET 2 OF 4

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
BATTERY SYMBOL			VOLTAGE RANGE

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY

103.

RECORD OF FIELD WIRING AND APPARATUS CHANGES						
CHANGED ON ISSUE	(IF RECORDS DO NOT SPECIFY)		SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD

CIRCUIT NOTES: (CONT)

104. TALK BATTERY AND GROUND MUST NOT BE CONNECTED TO TERMINALS 25 AND 26.

EQUIPMENT NOTES:

201. "P1" INDICATES PRINTED CONNECTOR FINGERS OF PWB PLUG END AND MATES WITH A 940A CONNECTOR.

202. DESIGNATIONS SHOWN IN BOLD CHARACTERS IN B SECTION ARE MARKED ON UNIT.

203. TO CLOSE A SCREW SWITCH, THE SCREW SHALL BE TIGHTENED SUFFICIENTLY TO INSURE CONTACT BETWEEN TERMINALS AND UNDERSIDE OF SCREW HEAD. CAUTION IN TIGHTENING SCREW IS RECOMMENDED TO AVOID SHEARING OF SCREW. TO OPEN A SCREW SWITCH THE SCREW SHALL BE LOOSENED APPROXIMATELY TWO COMPLETE TURNS. THE UNIT SHALL BE SHIPPED WITH ATTENUATORS SET FOR MAXIMUM ATTENUATION AND ALL SCREW SWITCHES OPEN EXCEPT "COMP NET" SHALL BE CLOSED.

204. THE ABILITY TO PROVIDE A RESISTOR IN PARALLEL WITH EXISTING R13 IS RETAINED.

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS VALUES PRECEDED BY THE SYMBOL (+) PLUS OR (-) MINUS ARE IN VOLTS.

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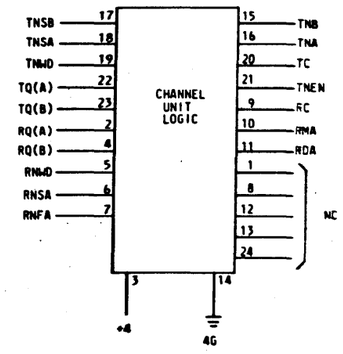
	2-WIRE, 900-OHM TRANSMISSION ONLY CHANNEL UNIT	SD-3C224-01-D1
BELL TELEPHONE LABORATORIES INCORPORATED	6S	2A

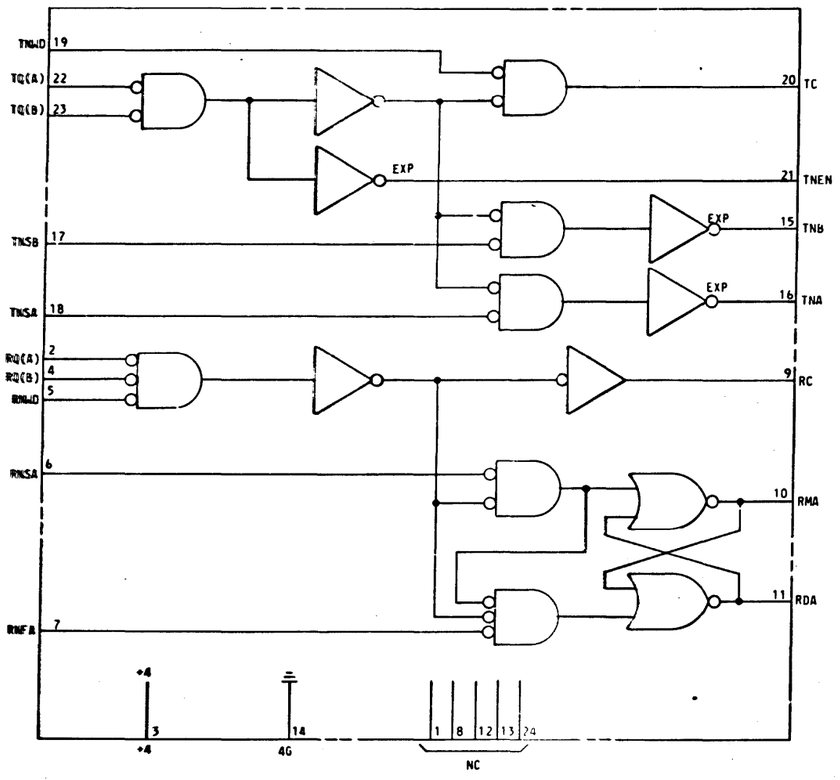
INFORMATION NOTES (CONT)
302. I.C. DEVICE CIRCUIT ELEMENTS

(A) **129D** CHANNEL UNIT LOGIC



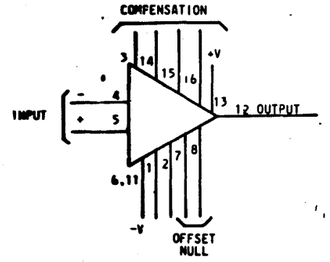
INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTION



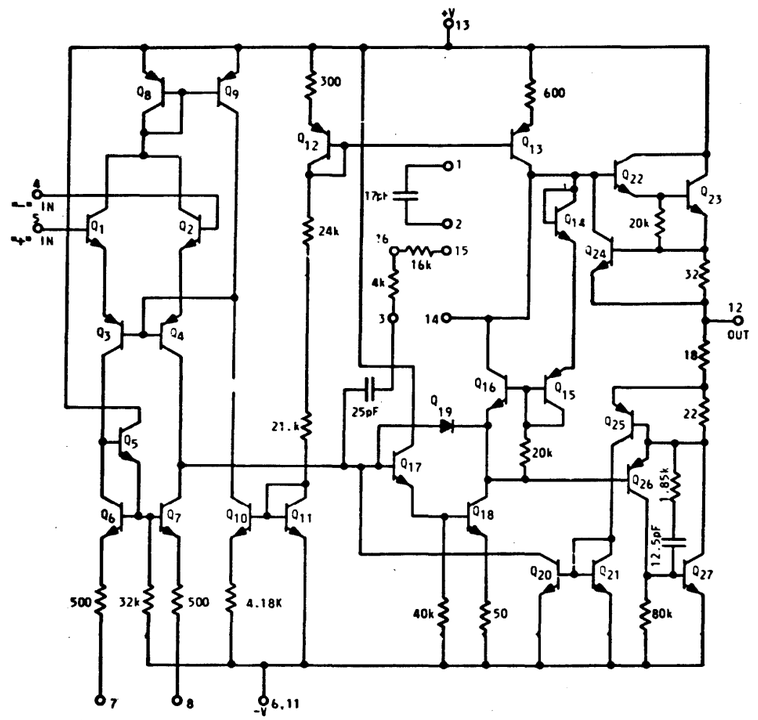
(B) **502W** DC AND VOICE FREQUENCY OPERATIONAL AMPLIFIERS

INPUT/OUTPUT INFORMATION



CIRCUIT DESCRIPTION

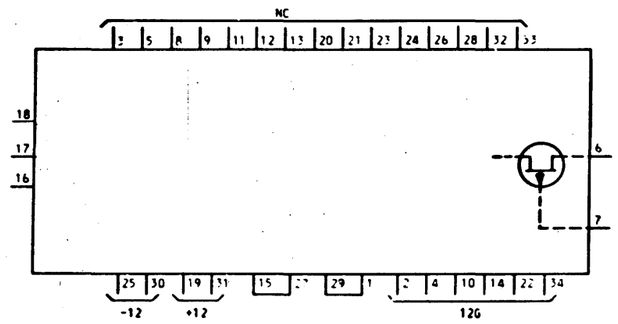
SCHEMATIC



ISSUE 1	
2-WIRE, 900-OHM TRANSMISSION ONLY CHANNEL UNIT	SD-3C224-01-D2
BELL TELEPHONE LABORATORIES INCORPORATED	6S

INFORMATION NOTES (CONT)
302. I.C. DEVICE CIRCUIT ELEMENTS (CONT)

(c) **525E** RECEIVE ACTIVE FILTER



INPUT/OUTPUT INFORMATION

PIN 6 IS THE PRIMARY CHANNEL INPUT FOR THE RECEIVE PULSE AMPLITUDE MODULATED SIGNAL.

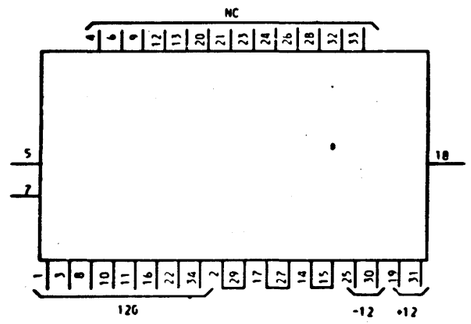
PIN 7 IS THE TIMING INPUT REQUIRED TO SAMPLE THE INDIVIDUAL CHANNEL.

PIN 17 IS THE PRIMARY CHANNEL OUTPUT FOR THE RECONSTRUCTED VOICE FREQUENCY SIGNAL

CIRCUIT DESCRIPTION

THE RECEIVING ACTIVE FILTER, RE-CONSTRUCTS THE TRANSMITTED WAVEFORM FROM THE RECEIVED SAMPLES. IT EFFECTIVELY HAS A LOW-PASS CHARACTERISTIC WHICH SUPPRESSES FREQUENCY COMPONENTS IN THE INPUT ABOVE 4 kHz.

(d) **525F** TRANSMIT ACTIVE FILTER



INPUT/OUTPUT INFORMATION

PIN 5 IS THE PRIMARY VOICE FREQUENCY SIGNAL INPUT.

PIN 18 IS THE FILTERED VOICE FREQUENCY OUTPUT.

CIRCUIT DESCRIPTION

THE TRANSMIT ACTIVE FILTER, IS A LOW-PASS FILTER WHICH EFFECTIVELY SUPPRESSES FREQUENCIES ABOVE 4 kHz. THESE FREQUENCIES WOULD PRODUCE MODULATION PRODUCTS BELOW 4 kHz IF THEY WERE NOT SUPPRESSED.

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BELL TELEPHONE LABORATORIES INCORPORATED	6S	