

## AMPLIFIERS

### 151-, 241-, AND 242-TYPE IDENTIFICATION

#### 1. GENERAL

**1.01** The 151-type, 241A (MD), and 242B amplifiers are single-stage transistor circuits (Fig. 1, 2, and 4). The 241B amplifier is a two-stage bipolar transistor circuit (Fig. 3). Circuits consist of inductors, diodes, transistors, capacitors, and resistors. The components are mounted on printed circuit boards. In the case of the 151-type amplifier the components are housed in a metal can. The 151D, 151E, 241A, 242A, and 242B amplifier circuits include polarity guards. The 241B amplifier is not polarity sensitive and does not require a polarity guard. The guard insures proper polarity of the supply voltage for the transistor portion of the amplifier. The 241B has a diode surge protector.

**1.02** This section is reissued to:

- Show amplifiers 151B, D, and E rated A&M Only
- Add capacitor to amplifier 241B (Fig. 3).

**1.03** The 241B amplifier is recommended. The 151A, 151C, 241A, and 242A amplifiers are rated MD. ♦The 151B, D, and E amplifiers are rated A&M Only.♦

#### 2. IDENTIFICATION

##### Purpose

**2.01** The 151-type amplifiers provide amplification for long loop operation, impaired hearing,

and noisy locations. The 241- and 242-type are used in telephone sets designed for headset/handset operation to increase transmitter output when using an operator's headset.

##### Ordering Guide

**2.02** Order as:

- Amplifier—151B, D, E, F
- Amplifier—241B
- Amplifier—242B

##### Design Features

**2.03** Refer to Table A.

##### Application

**2.04** Refer to Table B.

#### 3. CONNECTIONS

**3.01** ♦When the 241B amplifier is used in conjunction with the 425-type network, terminal 4 of the amplifier should always be connected to network terminal R, and terminal 1 of the amplifier should always be connected to network terminal B.♦

**3.02** For other connection information refer to appropriate telephone set section.

#### NOTICE

Not for use or disclosure outside the  
Bell System except under written agreement

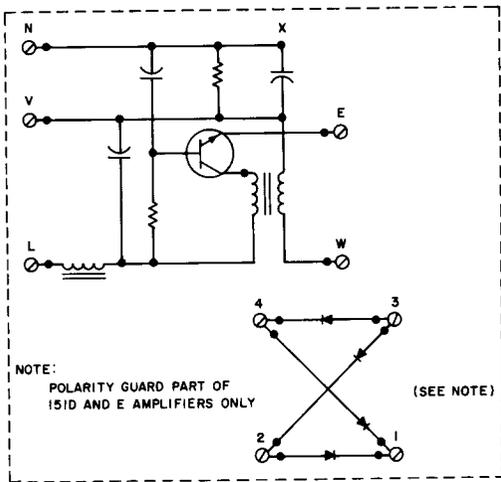


Fig. 1—151-Type Amplifier and Polarity Guard, Schematic

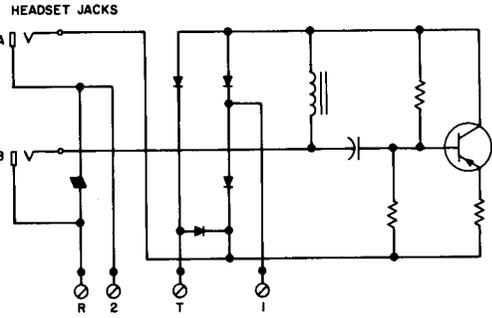


Fig. 4—242B Amplifier Schematic

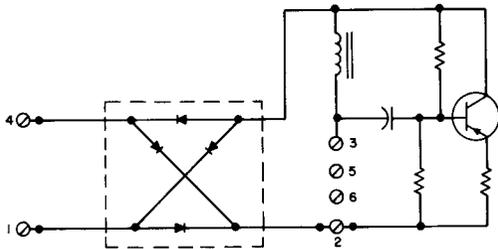


Fig. 2—241A (MD) Amplifier Schematic

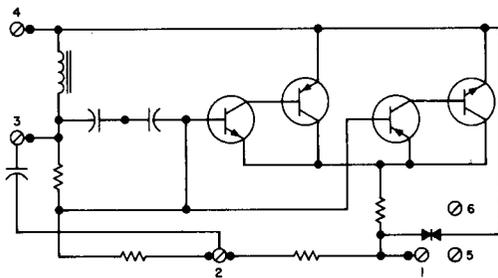


Fig. 3—241B Amplifier Schematic

**TABLE A -  
DESIGN FEATURES**

DESIGN FEATURE	AMPLIFIER TYPE		
	151	241	242
Equipped with jacks arranged for 289-type, 396A or 464-type plugs			A, B
Equipped with polarity guard	D and E	A	A and B
Designed for use with 52-, 53-, 60-, 61-, or KS-type head telephone sets to amplify output of the transmitter unit		A* and B	A and B
Designed for use with the 292A operator's receive amplifier		B	
Designed for use with jack-equipped telephone sets except card dialers		A and B	

\* Do not use the 241A with 60- or 61-type headsets on long loops (over 1200 ohms).

**◆TABLE B◆  
APPLICATION**

APPLICATION	AMPLIFIER TYPE		
	151	241	242
500-, 560-, 630-, and 2600-type telephone sets		B	
532-, 533-, and 536-type telephone sets	B *	B	
636A1, 638A1, and 639A1 telephone sets	D *	B	
610B1 and 610B2 telephone sets	E *	B	
663-, 664-, 1663-, 1664-, 2663-, and 2664-type telephone sets			A and B
507-, 509-, 557-, and 559-type telephone sets	F		
636-, 637-, 638-, 639-, 1636-, 1637-, 1638-, and 1639-type telephone sets		A (MD), B	

\* (A&M Only)