

**NEC****NPN SILICON TRANSISTOR****2SD774**

**DESCRIPTION** The 2SD774 is designed for use in driver and output stages of audio frequency amplifiers.

**FEATURES**

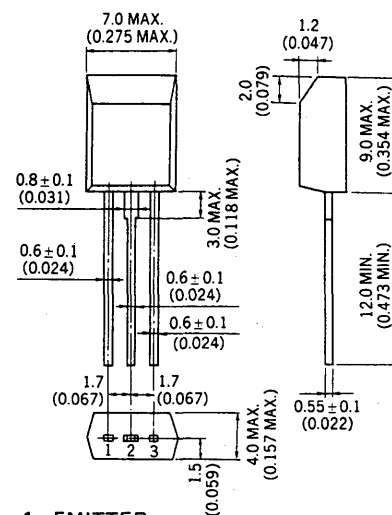
- High Total Power Dissipation  $P_T : 1.0 \text{ W}$  ( $T_a = 25^\circ \text{C}$ )
- High Voltage  $V_{CE} : 50 \text{ V MIN.}$
- Complementary to the NEC 2SB734 PNP Transistor.

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures

Storage Temperature . . . . .  $-55$  to  $+150^\circ \text{C}$ Junction Temperature . . . . .  $150^\circ \text{C}$  MaximumMaximum Power Dissipation ( $T_a = 25^\circ \text{C}$ )Total Power Dissipation . . . . .  $1.0 \text{ W}$ Maximum Voltages and Current ( $T_a = 25^\circ \text{C}$ ) $V_{CBO}$  Collector to Base Voltage . . . . .  $100 \text{ V}$  $V_{CEO}$  Collector to Emitter Voltage . . . . .  $50 \text{ V}$  $V_{EBO}$  Emitter to Base Voltage . . . . .  $6.0 \text{ V}$  $I_C$  Collector Current . . . . .  $1.0 \text{ A}$ **PACKAGE DIMENSIONS**

in millimeters (inches)



1. EMITTER  
2. COLLECTOR  
3. BASE

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ \text{C}$ )**

| SYMBOL        | CHARACTERISTIC               | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                                             |
|---------------|------------------------------|------|------|------|------|-------------------------------------------------------------|
| $h_{FE1}$     | DC Current Gain              | 135  | 300  | 600  | —    | $V_{CE} = 2.0 \text{ V}$ , $I_C = 100 \text{ mA}$           |
| $h_{FE2}$     | DC Current Gain              | 70   |      |      | —    | $V_{CE} = 1.0 \text{ V}$ , $I_C = 1.0 \text{ A}$            |
| $f_T$         | Gain Bandwidth Product       | 50   | 95   |      | MHz  | $V_{CE} = 2.0 \text{ V}$ , $I_E = -10 \text{ mA}$           |
| $C_{ob}$      | Output Capacitance           |      | 16   | 35   | pF   | $V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$ |
| $I_{CBO}$     | Collector Cutoff Current     |      |      | 100  | nA   | $V_{CB} = 50 \text{ V}$ , $I_E = 0$                         |
| $I_{EBO}$     | Emitter Cutoff Current       |      |      | 100  | nA   | $V_{EB} = 6.0 \text{ V}$ , $I_C = 0$                        |
| $V_{BE}$      | Base to Emitter Voltage      | 0.55 | 0.60 | 0.65 | V    | $V_{CE} = 6.0 \text{ V}$ , $I_C = 5.0 \text{ mA}$           |
| $V_{CE(sat)}$ | Collector Saturation Voltage |      | 0.23 | 0.30 | V    | $I_C = 1.0 \text{ A}$ , $I_B = 50 \text{ mA}$               |
| $V_{BE(sat)}$ | Base Saturation Voltage      |      | 0.92 | 1.20 | V    | $I_C = 1.0 \text{ A}$ , $I_B = 50 \text{ mA}$               |

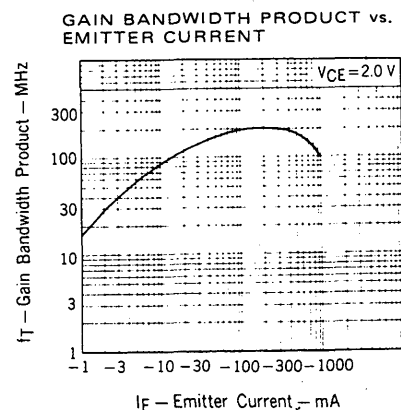
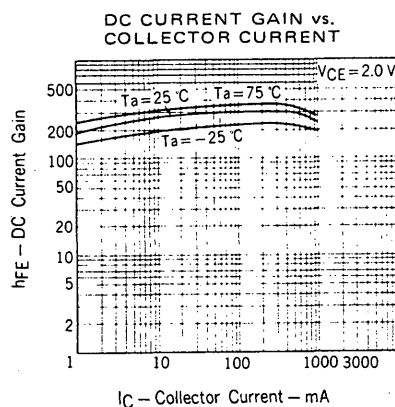
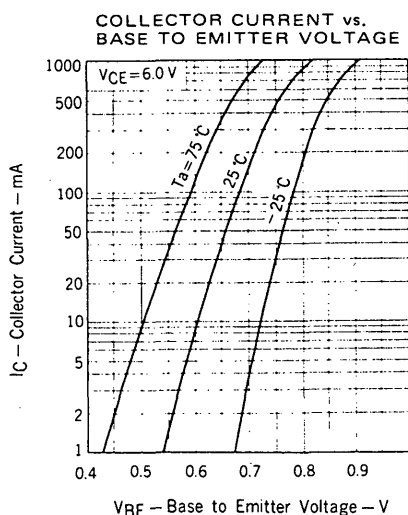
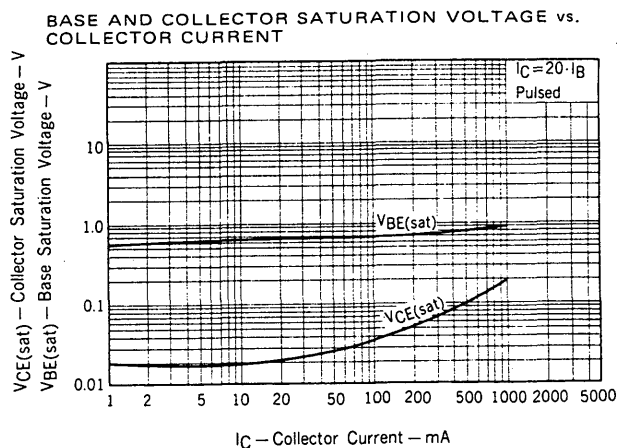
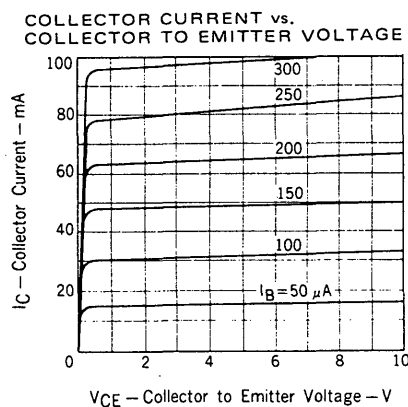
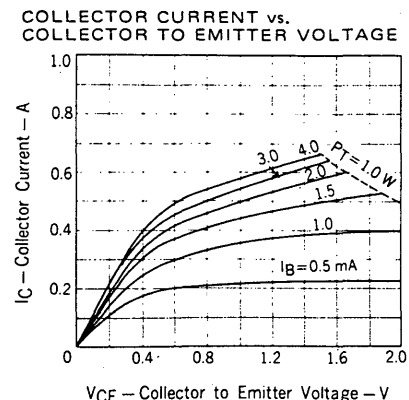
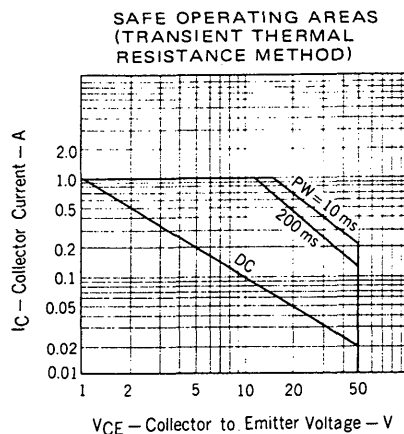
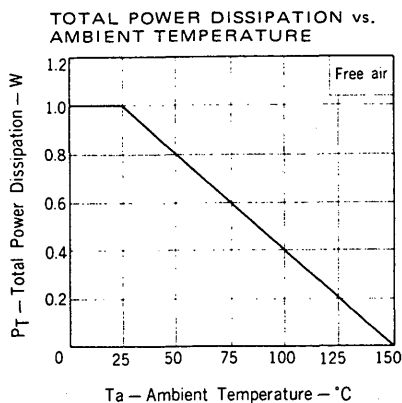
**Classification of  $h_{FE1}$** 

| Rank  | $L_2$     | $K_3$     | $K_4$     | $U_4$     | $U_5$     |
|-------|-----------|-----------|-----------|-----------|-----------|
| Range | 135 – 270 | 200 – 320 | 250 – 400 | 300 – 480 | 360 – 600 |

Test Conditions :  $V_{CE} = 2.0 \text{ V}$ ,  $I_C = 100 \text{ mA}$ .

## 2SD774

NEC

TYPICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

**NEC****2SD774**