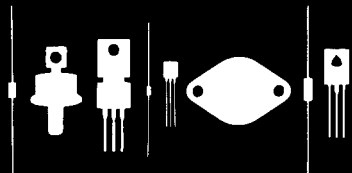


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Semiconductor Corp.  
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Semiconductor Corp.**

145 Adams Avenue  
Hauppauge, New York 11788



2N3771

2N3772

NPN POWER TRANSISTOR

JEDEC TO-3 CASE

# DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3771, 2N3772 types are NPN silicon power transistors manufactured by the epitaxial base process designed for high power amplifier and switching applications.

## MAXIMUM RATINGS ( $T_C=25^{\circ}\text{C}$ )

|                           | SYMBOL         | 2N3771      | 2N3772 | UNIT                 |
|---------------------------|----------------|-------------|--------|----------------------|
| Collector-Base Voltage    | $V_{CB0}$      | 50          | 100    | V                    |
| Collector-Emitter Voltage | $V_{CE0}$      | 40          | 60     | V                    |
| Collector-Emitter Voltage | $V_{CEV}$      | 50          | 80     | V                    |
| Emitter-Base Voltage      | $V_{EB0}$      | 5.0         | 7.0    | V                    |
| Collector Current         | $I_C$          | 15          | 10     | A                    |
| Collector Current-Peak    | $I_{CM}$       | 30          | 30     | A                    |
| Base Current              | $I_B$          | 7.5         | 5.0    | A                    |
| Base Current-Peak         | $I_{BM}$       | 15          | 15     | A                    |
| Power Dissipation         | $P_D$          | 150         |        | W                    |
| Operating and Storage     |                |             |        |                      |
| Junction Temperature      | $T_J, T_{STG}$ | -65 to +200 |        | $^{\circ}\text{C}$   |
| Thermal Resistance        | $\theta_{JC}$  | 1.17        |        | $^{\circ}\text{C/W}$ |

## ELECTRICAL CHARACTERISTICS ( $T_C=25^{\circ}\text{C}$ unless otherwise noted)

| SYMBOL               | TEST CONDITIONS                                                  | 2N3771 |     | 2N3772 |     | UNIT |
|----------------------|------------------------------------------------------------------|--------|-----|--------|-----|------|
|                      |                                                                  | MIN    | MAX | MIN    | MAX |      |
| $I_{CB0}$            | $V_{CB}=\text{Rated } V_{CB0}$                                   |        | 4.0 |        | 5.0 | mA   |
| $I_{CE0}$            | $V_{CE}=30\text{V}$                                              |        | 10  |        | -   | mA   |
| $I_{CE0}$            | $V_{CE}=50\text{V}$                                              |        | -   |        | 10  | mA   |
| $I_{CEV}$            | $V_{CE}=\text{Rated } V_{CB0}, V_{BE}=1.5\text{V}$               |        | 2.0 |        | 5.0 | mA   |
| $I_{CEV}$            | $V_{CE}=30\text{V}, V_{BE}=1.5\text{V}, T_C=150^{\circ}\text{C}$ |        | 10  |        | 10  | mA   |
| $I_{EB0}$            | $V_{EB}=\text{Rated } V_{EB0}$                                   |        | 5.0 |        | 5.0 | mA   |
| $BV_{CE0}$           | $I_C=0.2\text{A}$                                                | 40     |     | 60     |     | V    |
| $BV_{CEV}$           | $V_{EB}=1.5\text{V}, I_C=0.2\text{A}, R_{BE}=100\Omega$          | 50     |     | 80     |     | V    |
| $BV_{CER}$           | $I_C=0.2\text{A}, R_{BE}=100\Omega$                              | 45     |     | 70     |     | V    |
| $V_{CE}(\text{SAT})$ | $I_C=10\text{A}, I_B=1.0\text{A}$                                |        | -   |        | 1.4 | V    |
| $V_{CE}(\text{SAT})$ | $I_C=15\text{A}, I_B=1.5\text{A}$                                |        | 2.0 |        | -   | V    |
| $V_{CE}(\text{SAT})$ | $I_C=20\text{A}, I_B=4.0\text{A}$                                |        | -   |        | 4.0 | V    |
| $V_{CE}(\text{SAT})$ | $I_C=30\text{A}, I_B=6.0\text{A}$                                |        | 4.0 |        | -   | V    |
| $V_{BE}(\text{ON})$  | $V_{CE}=4.0\text{V}, I_C=15\text{A}$                             |        | 2.7 |        | -   | V    |
| $V_{BE}(\text{ON})$  | $V_{CE}=4.0\text{V}, I_C=10\text{A}$                             |        | -   |        | 2.2 | V    |
| $h_{FE}$             | $V_{CE}=4.0\text{V}, I_C=10\text{A}$                             | -      | -   | 15     | 60  |      |
| $h_{FE}$             | $V_{CE}=4.0\text{V}, I_C=15\text{A}$                             | 15     | 60  | -      | -   |      |
| $h_{FE}$             | $V_{CE}=4.0\text{V}, I_C=20\text{A}$                             |        | -   | 5.0    |     |      |
| $h_{FE}$             | $V_{CE}=4.0\text{V}, I_C=30\text{A}$                             | 5.0    |     | -      |     |      |
| $h_{fe}$             | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}, f=1.0\text{kHz}$           | 40     |     | 40     |     |      |
| $f_T$                | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}, f=50\text{kHz}$            | 0.2    |     | 0.2    |     | MHz  |
| $I_{s/b}$            | $V_{CE}=25\text{V}, t=1.0\text{s}$                               | 6.0    |     | 6.0    |     | A    |