

**isc Silicon NPN Power Transistor**

**2N3865**

**DESCRIPTION**

- Excellent Safe Operating Area
- Low Collector-Emitter Saturation Voltage
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

**APPLICATIONS**

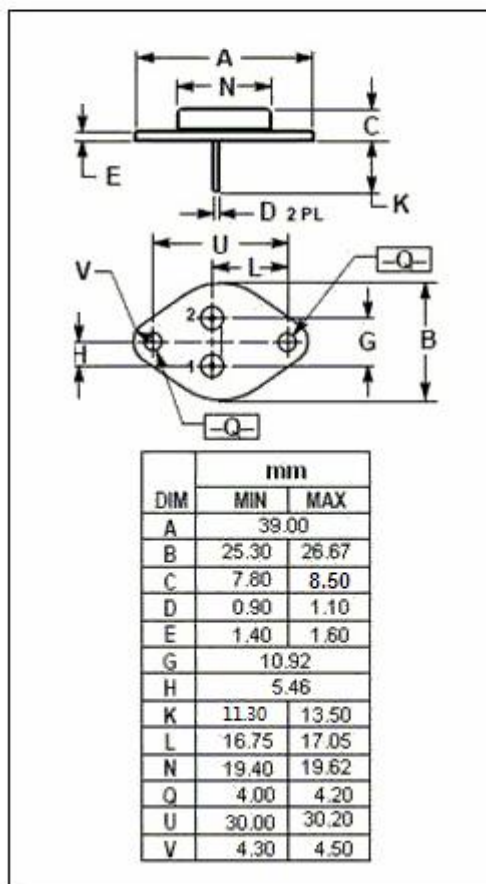
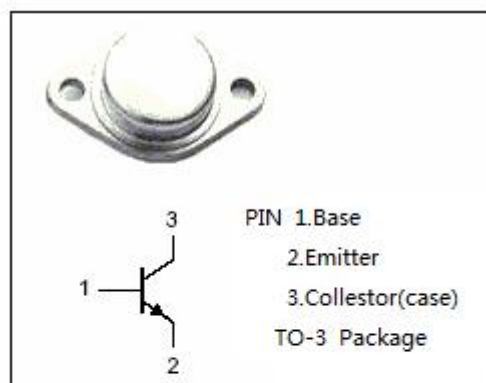
- Designed for medium-speed switching and amplifier applications.

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

| SYMBOL           | PARAMETER  | VALUE   | UNIT |
|------------------|--|---------|------|
| V <sub>CBO</sub> | Collector-Base Voltage                           | 160     | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                        | 150     | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                             | 7       | V    |
| I <sub>c</sub>   | Collector Current-Continuous                     | 7.5     | A    |
| P <sub>c</sub>   | Collector Power Dissipation@T <sub>c</sub> =25°C | 117     | W    |
| T <sub>J</sub>   | Junction Temperature                             | -65~200 | °C   |
| T <sub>stg</sub> | Storage Temperature                              | -65~200 | °C   |

**THERMAL CHARACTERISTICS**

| SYMBOL              | PARAMETER                            | MAX | UNIT |
|---------------------|--------------------------------------|-----|------|
| R <sub>th j-c</sub> | Thermal Resistance, Junction to Case | 1.5 | °C/W |



**isc Silicon NPN Power Transistor****2N3865****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL           | PARAMETER                            | CONDITIONS                        | MIN | MAX | UNIT |
|------------------|--------------------------------------|-----------------------------------|-----|-----|------|
| $V_{CE0(SUS)}$ * | Collector-Emitter Sustaining Voltage | $I_C=200\text{mA}; I_B=0$         | 150 |     | V    |
| $I_{EBO}$        | Emitter Cutoff Current               | $V_{EB}=7\text{V}; I_C=0$         |     | 5   | mA   |
| $V_{CE(sat)}$    | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.2\text{A}$  |     | 1.0 | V    |
| $V_{BE(sat)}$    | Base-Emitter Saturation Voltage      | $I_C=3\text{A}; I_B=0.2\text{A}$  |     | 2.0 | V    |
| $h_{FE}$         | DC Current Gain                      | $I_C=3\text{A}; V_{CE}=2\text{V}$ | 30  | 90  |      |

\*:Pulse test:Pulse width=300us,duty cycle $\leq$ 2%