

# isc Silicon NPN Power Transistor

## BUS48AP

### DESCRIPTION

- High Voltage Capability
- High Current Capability
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

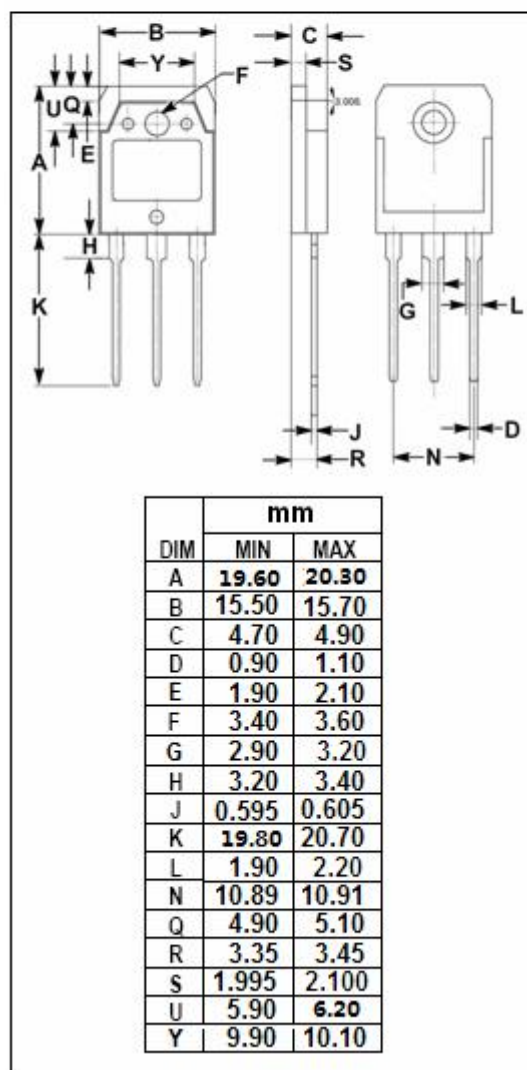
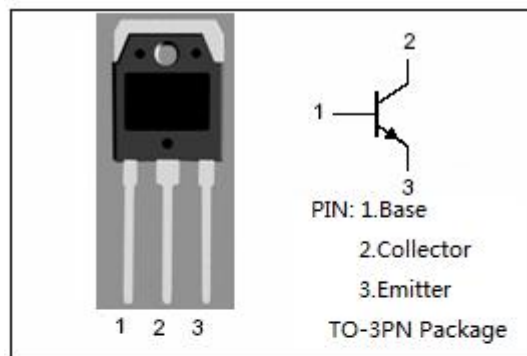
Designed for high-voltage,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line-operated switchmode applications

### Absolute maximum ratings(Ta=25°C)

| SYMBOL    | PARAMETER  | VALUE   | UNIT |
|-----------|--|---------|------|
| $V_{CEV}$ | Collector-Emitter Voltage                            | 1000    | V    |
| $V_{CEO}$ | Collector-Emitter Voltage                            | 450     | V    |
| $V_{EBO}$ | Emitter-Base Voltage                                 | 7       | V    |
| $I_C$     | Collector Current-Continuous                         | 15      | A    |
| $I_{CM}$  | Collector Current-Peak                               | 30      | A    |
| $I_B$     | Base Current-Continuous                              | 5       | A    |
| $I_{BM}$  | Base Current-peak                                    | 20      | A    |
| $P_C$     | Collector Power Dissipation<br>@T <sub>C</sub> =25°C | 150     | W    |
| $T_j$     | Junction Temperature                                 | 150     | °C   |
| $T_{stg}$ | Storage Temperature Range                            | -65~150 | °C   |

### THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                           | MAX | UNIT |
|---------------|-------------------------------------|-----|------|
| $R_{th\ j-c}$ | Thermal Resistance,Junction to Case | 1.0 | °C/W |



**isc Silicon NPN Power Transistor****BUS48AP****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL          | PARAMETER                            | CONDITIONS  | MIN | MAX        | UNIT |
|-----------------|--------------------------------------|---|-----|------------|------|
| $V_{CEO(SUS)}$  | Collector-Emitter Sustaining Voltage | $I_C = 50\text{mA}; I_B = 0;$   | 450 |            | V    |
| $V_{(BR)EBO}$   | Emitter-Base Breakdown Voltage       | $I_E = 1\text{mA}; I_C = 0$   | 7   |            | V    |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C = 8\text{A}; I_B = 1.6\text{A}$<br>$I_C = 8\text{A}; I_B = 1.6\text{A}; T_C = 100^{\circ}\text{C}$ |     | 1.5<br>2.0 | V    |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C = 12\text{A}; I_B = 2.4\text{A}$   |     | 5.0        | V    |
| $V_{BE(sat)}$   | Base-Emitter Saturation Voltage      | $I_C = 8\text{A}; I_B = 1.6\text{A}$<br>$I_C = 8\text{A}; I_B = 1.6\text{A}; T_C = 100^{\circ}\text{C}$ |     | 1.6<br>1.6 | V    |
| $I_{CBO}$       | Collector Base Cutoff Current        | $V_{CE}=1000\text{V}; I_E = 0$<br>$V_{CE}=1000\text{V}; I_E = 0; T_C=125^{\circ}\text{C}$               |     | 0.2<br>2.0 | mA   |
| $I_{EBO}$       | Emitter Cutoff Current               | $V_{EB} = 5\text{V}; I_C = 0$   |     | 0.1        | mA   |
| $h_{FE}$        | DC Current Gain                      | $I_C = 8\text{A}; V_{CE} = 5\text{V}$   | 8   |            |      |

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