

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BUT11

DESCRIPTION

- High Voltage
- High Speed Switching

APPLICATIONS

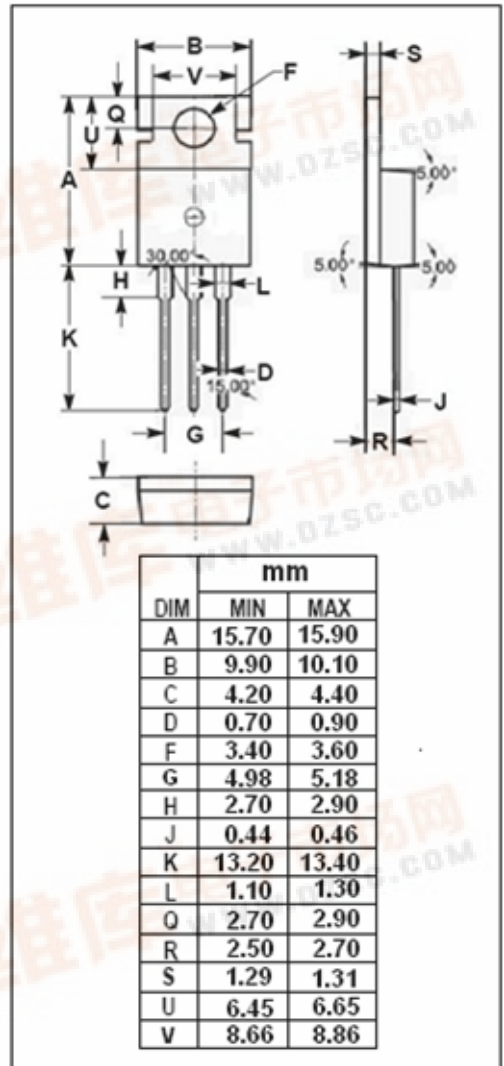
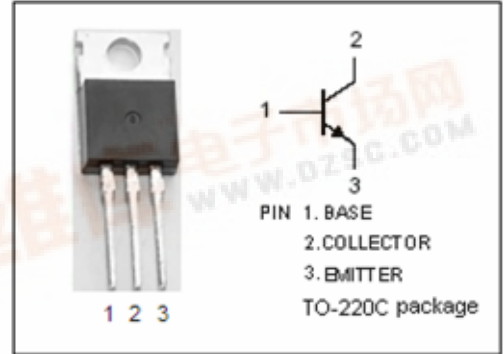
- Converters
- Inverters
- Switching regulators
- Motor control systems

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| SYMBOL | PARAMETER | VALUE | UNIT |
|------------------|---|---------|------|
| V _{CBO} | Collector-Base Voltage | 850 | V |
| V _{CEO} | Collector-Emitter Voltage | 400 | V |
| V _{EBO} | Emitter-Base Voltage | 7 | V |
| I _C | Collector Current-Continuous | 5 | A |
| I _{CM} | Collector Current-Peak | 10 | A |
| I _B | Base Current | 2 | A |
| P _C | Collector Power Dissipation @T _C =25°C | 100 | 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 | 1.25 | °C/W |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------|--------------------------------------|---|-----|------|--------|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=0.1\text{A}; I_B=0, L=25\text{mH}$ | 400 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.6\text{A}$ | | | 1.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.6\text{A}$ | | | 1.3 | V |
| I_{CES} | Collector Cutoff Current | $V_{CE}=\text{Rated } V_{CES}; V_{BE}=0$ $V_{CE}=\text{Rated } V_{CES}; V_{BE}=0; T_C=125^{\circ}\text{C}$ | | | 1 2 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=9\text{V}; I_C=0$ | | | 10 | mA |
| h_{FE-1} | DC Current Gain | $I_C=5\text{mA}; V_{CE}=5\text{V}$ | 10 | | 35 | |
| h_{FE-2} | DC Current Gain | $I_C=0.5\text{A}; V_{CE}=5\text{V}$ | 10 | | 35 | |

Switching Times ;Resistive Load

| | | | | | | |
|----------|--------------|---|--|--|-----|---------------|
| t_{on} | Turn-on Time | $I_C=3\text{A}; I_{B1}=-I_{B2}=0.6\text{A}$ | | | 1.0 | μs |
| t_s | Storage Time | | | | 4.0 | μs |
| t_f | Fall Time | | | | 0.8 | μs |