

# isc Silicon NPN Power Transistor

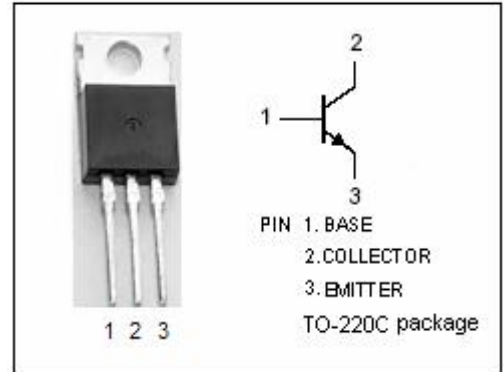
# BU406

## DESCRIPTION

- High Voltage:  $V_{CEV} = 400V(\text{Min})$
- Low Saturation Voltage-  
:  $V_{CE(\text{sat})} = 1.0V(\text{Max}) @ I_C = 5A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

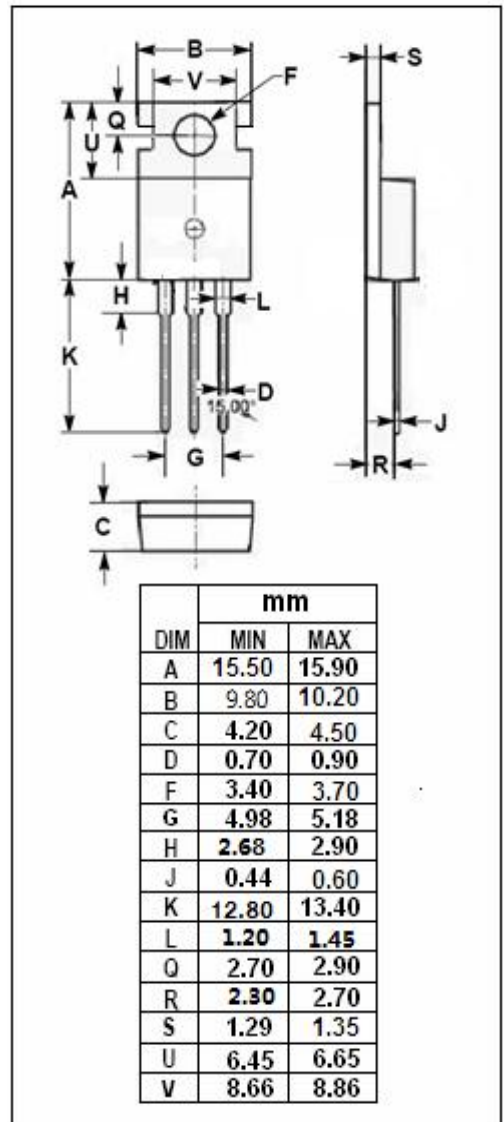
## APPLICATIONS

- Designed for use in horizontal deflection output stages of TV's and CRT's



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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | 400     | V                |
| $V_{CEV}$ | Collector-Emitter Voltage                                 | 400     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | 200     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | 6       | V                |
| $I_C$     | Collector Current-Continuous                              | 7       | A                |
| $I_{CP}$  | Collector Current-Peak Repetitive                         | 10      | A                |
| $I_{CP}$  | Collector Current- Peak (10ms)                            | 15      | A                |
| $I_B$     | Base Current  | 4       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^\circ\text{C}$ | 60      | W                |
| $T_J$     | Junction Temperature                                      | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                 | -65~150 | $^\circ\text{C}$ |



## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                               | MAX  | UNIT               |
|---------------|---|------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 2.08 | $^\circ\text{C/W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 70   | $^\circ\text{C/W}$ |

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## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

| SYMBOL                | PARAMETER                            | CONDITIONS  | MIN | TYP. | MAX  | UNIT |
|-----------------------|--------------------------------------|---|-----|------|------|------|
| V <sub>CE0(SUS)</sub> | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0  | 200 |      |      | V    |
| V <sub>CE(sat)</sub>  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 5A; I <sub>B</sub> = 0.5A  |     |      | 1.0  | V    |
| V <sub>BE(sat)</sub>  | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 5A; I <sub>B</sub> = 0.5A  |     |      | 1.2  | V    |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = 6V; I <sub>C</sub> =0   |     |      | 1.0  | mA   |
| h <sub>FE</sub>       | DC Current Gain                      | I <sub>C</sub> = 2A; V <sub>CE</sub> = 5V   | 40  |      | 120  |      |
| f <sub>T</sub>        | Current-Gain—Bandwidth Product       | I <sub>C</sub> = 0.5A ; V <sub>CE</sub> = 10V, f <sub>test</sub> = 20MHz                            | 10  |      |      | MHz  |
| C <sub>OB</sub>       | Output Capacitance                   | I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1.0MHz                               |     | 80   |      | pF   |
| t <sub>f</sub>        | Fall Time                            | I <sub>C</sub> = 5A; I <sub>B1</sub> = -I <sub>B2</sub> = 0.5A, L= 150 μ H<br>V <sub>CC</sub> = 40V |     |      | 0.75 | μ s  |

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