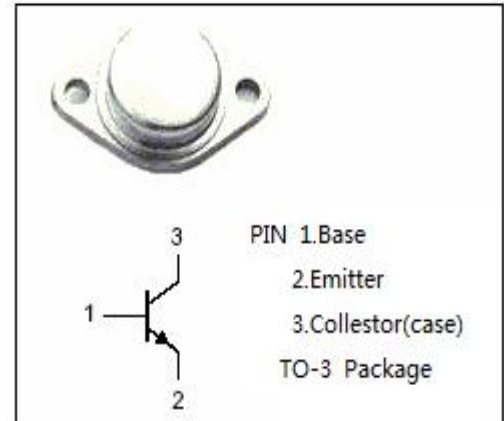


**isc Silicon NPN Power Transistors**
**BU113**
**DESCRIPTION**

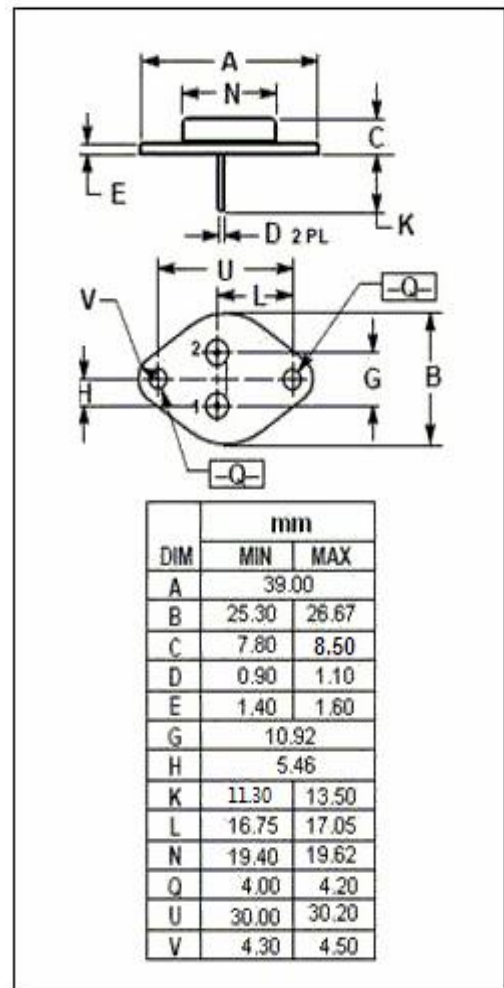
- Collector-Emitter Voltage-  
:  $V_{CEX(SUS)} = 700V(\text{Min.})$
- Collector Current-  $I_C = 10A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for use in horizontal deflection output state of color TV receivers.


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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Emitter Voltage                                 | 700     | V                |
| $V_{CEX}$ | Collector-Emitter Voltage $V_{BE} = -5V$                  | 700     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | 10      | V                |
| $I_C$     | Collector Current-Continuous                              | 10      | A                |
| $I_B$     | Base Current-Continuous                                   | 4       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_c = 90^\circ\text{C}$ | 30      | 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 | 2.0 | $^\circ\text{C/W}$ |

## isc Silicon NPN Power Transistors

## BU113

## ELECTRICAL CHARACTERISTICS

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

| SYMBOL               | PARAMETER                            | CONDITIONS   | MIN | TYP. | MAX       | UNIT |
|----------------------|--------------------------------------|--|-----|------|-----------|------|
| V <sub>(BR)EBO</sub> | Collector-Base Breakdown Voltage     | I <sub>E</sub> = 30mA; I <sub>C</sub> = 0  | 10  |      |           | V    |
| V <sub>CE(sat)</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 10A; I <sub>B</sub> = 2A  |     |      | 3.0       | V    |
| I <sub>CEX</sub>     | Collector Cutoff Current             | V <sub>CE</sub> = 250V; V <sub>BE</sub> = -5V<br>V <sub>CE</sub> = 700V; V <sub>BE</sub> = -5V |     |      | 2.0<br>10 | mA   |
| h <sub>FE</sub>      | DC Current Gain                      | I <sub>C</sub> = 8A; V <sub>CE</sub> = 2V  | 7   |      |           |      |
| f <sub>T</sub>       | Current-Gain—Bandwidth Product       | I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 4V  |     | 6    |           | MHz  |
| C <sub>OB</sub>      | Collector Output Capacitance         | I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1MHz   |     | 250  |           | pF   |
| t <sub>f</sub>       | Fall Time                            | I <sub>C</sub> = 8A; I <sub>B1</sub> = -I <sub>B2</sub> = 1.6A                                 |     |      | 1.0       | μs   |

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