

isc Silicon NPN Power Transistor

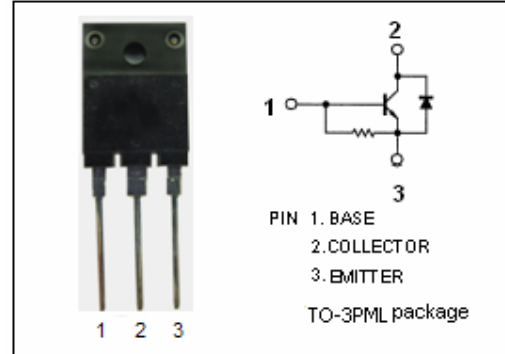
BUH313D

DESCRIPTION

- High Switching Speed
- High Voltage
- Built-in Integrated Diode

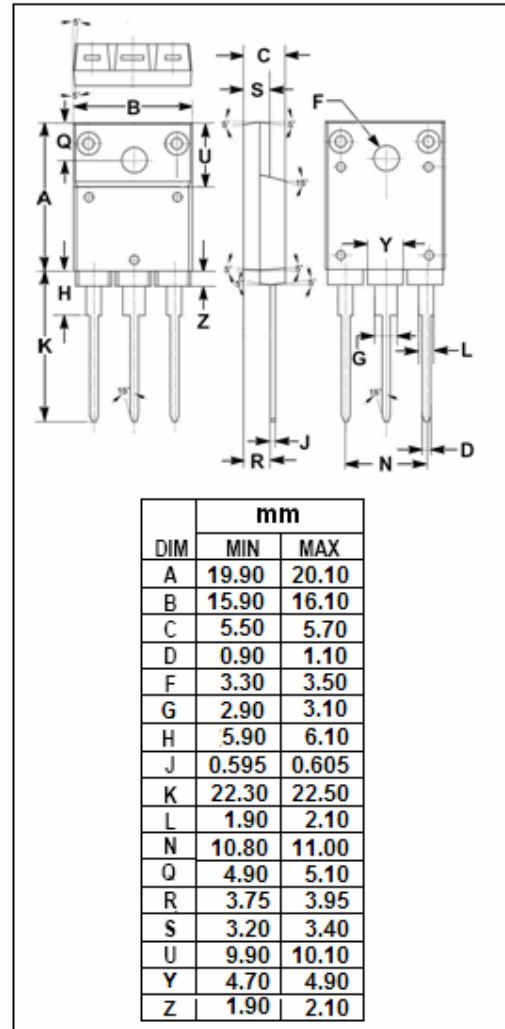
APPLICATIONS

- Horizontal deflection stage in standard and high resolution Displays for TV's and monitors.



ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

| SYMBOL | PARAMETER | VALUE | UNIT |
|------------------|---|---------|------|
| V _{CBO} | Collector-Base Voltage | 1300 | V |
| V _{CEO} | Collector-Emitter Voltage | 600 | V |
| V _{EBO} | Emitter-Base Voltage | 10 | V |
| I _C | Collector Current-Continuous | 5 | A |
| I _{CM} | Collector Current-Peak | 8 | A |
| I _B | Base Current | 3 | A |
| I _{BM} | Base Current-Peak | 5 | A |
| P _C | Collector Power Dissipation @T _C =25°C | 50 | W |
| T _J | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -65~150 | °C |



THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|--------------------------------------|-----|------|
| R _{th j-c} | Thermal Resistance, Junction to Case | 2.5 | °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 | $I_C=100\text{mA}; I_B=0, L=25\text{mH}$ | 600 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.75\text{A}$ | | | 1.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.75\text{A}$ | | | 1.3 | V |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 300 | mA |
| I_{CES} | Collector Cutoff Current | $V_{CE}=1300\text{V}; V_{BE}=0$ $V_{CE}=1300\text{V}; V_{BE}=0; T_C=125^{\circ}\text{C}$ | | | 1.0 2.0 | mA |
| h_{FE} | DC Current Gain | $I_C=3\text{A}; V_{CE}=5\text{V}$ $I_C=3\text{A}; V_{CE}=5\text{V}; T_C=100^{\circ}\text{C}$ | 5 3 | | | |
| V_{ECF} | C-E Diode Forward Voltage | $I_F=3\text{A}$ | | | 2.5 | V |

Switching Times; Resistive Load

| | | | | | | |
|-------|--------------|---|--|-----|-----|---------------|
| t_s | Storage Time | $I_C=3\text{A}; I_{B1}=1\text{A}; I_{B2}=1.5\text{A}$ $V_{CC}=400\text{V}$ | | 1.8 | 2.7 | μs |
| t_f | Fall Time | | | 0.2 | 0.3 | μs |