

isc Silicon NPN Darlington Power Transistor

BUX90

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
 $V_{CEO(SUS)} = 400V(\text{Min})$
- High Reliability
- DARLINGTON
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

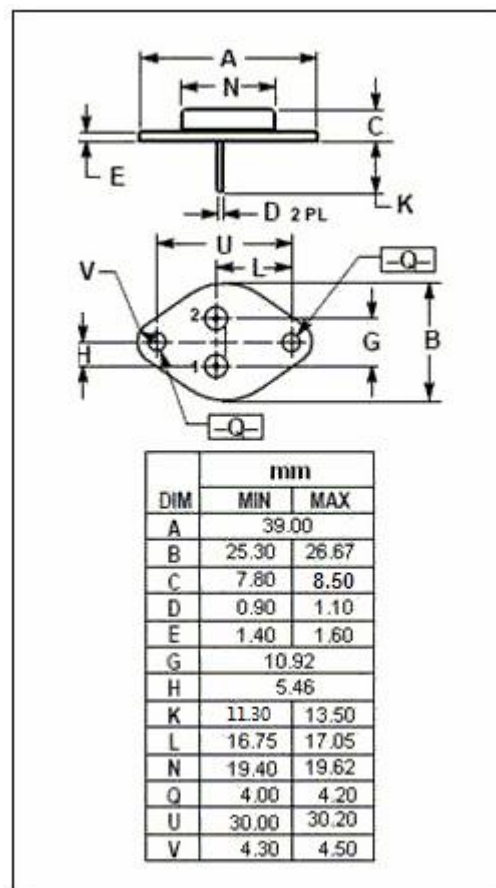
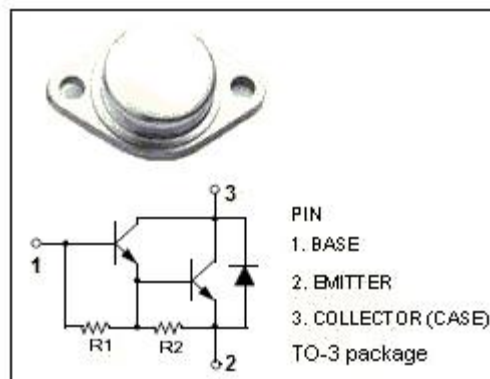
- Automotive ignition applications
- Inverters circuits for motor controls

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 650 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 12 | A |
| I_{CM} | Collector Current-peak | 20 | A |
| I_B | Base Current | 1 | A |
| I_{BM} | Base Current-peak | 5 | A |
| P_C | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 125 | 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 | 1.0 | $^\circ\text{C/W}$ |



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-------------------------|--------------------------------------|--|-----|------|------------|------|
| V _{CEO(SUS)} | Collector-Emitter Sustaining Voltage | I _C = 50mA; I _B = 0 | 400 | | | V |
| V _{CE(sat)-1} | Collector-Emitter Saturation Voltage | I _C = 8A; I _B = 100mA | | | 1.6 | V |
| V _{CE(sat) -2} | Collector-Emitter Saturation Voltage | I _C = 10A; I _B = 250mA | | | 1.8 | V |
| V _{BE(sat) -1} | Base-Emitter Saturation Voltage | I _C = 8A; I _B = 100mA | | | 2.2 | V |
| V _{BE(sat) -2} | Base-Emitter Saturation Voltage | I _C = 10A; I _B = 250mA | | | 2.5 | V |
| I _{CES} | Collector Cutoff Current | V _{CE} = 650V; V _{BE} = 0 V _{CE} = 650V; V _{BE} = 0; T _j = 125°C | | | 1.0 5.0 | mA |
| I _{CEO} | Collector Cutoff Current | V _{CE} = 400V; I _B = 0 | | | 1.0 | mA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 5V; I _C = 0 | | | 20 | mA |
| h _{FE} | DC Current Gain | I _C = 5A ; V _{CE} = 10V | 300 | | | |
| V _{ECF} | C-E Diode Forward Voltage | I _F = 10A | | | 2.8 | V |

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