

isc Silicon NPN Darlington Power Transistor
2SD650
DESCRIPTION

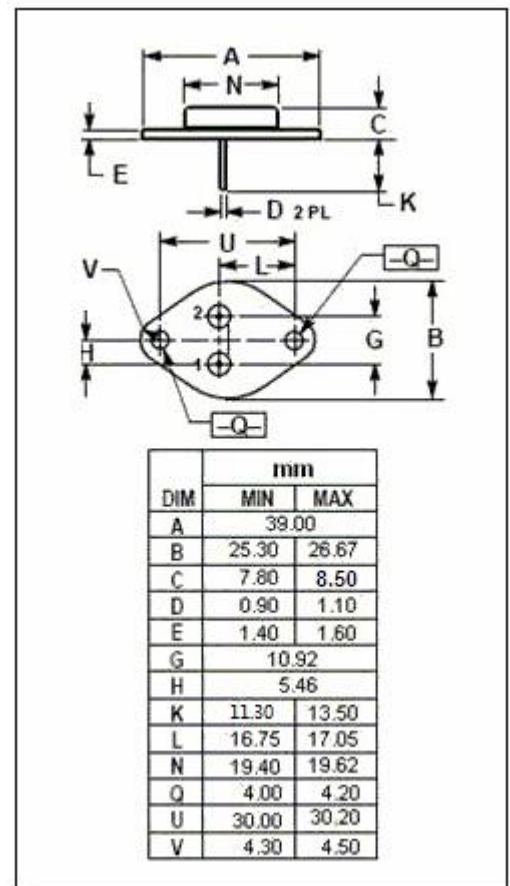
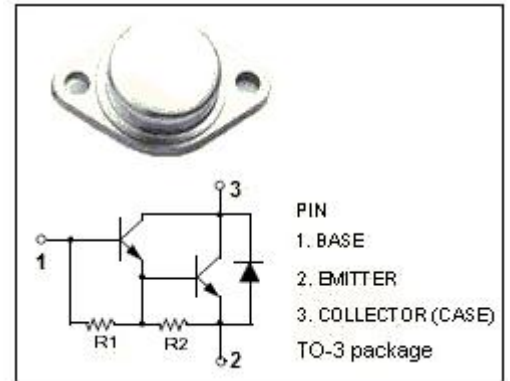
- Collector-Emitter Sustaining Voltage-
 $V_{CEO(SUS)} = 400V(\text{Min})$
- High Power Dissipation
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for line operated switchmode applications such as:
- Switching regulators
- Inverters
- Solenoid and relay drivers

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 400 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current | 6 | A |
| I_{CM} | Collector Current-peak | 8 | A |
| I_B | Base Current | 0.5 | A |
| P_C | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 80 | W |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



isc Silicon NPN Darlington Power Transistor**2SD650****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 | $I_C= 50\text{mA}; I_B= 0$ | 400 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C= 1\text{mA}; I_E= 0$ | 400 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E= 10\text{mA}; I_C= 0$ | 7 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C= 4\text{A}; I_B= 10\text{mA}$ | | | 1.6 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C= 4\text{A}; I_B= 10\text{mA}$ | | | 2.0 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=400\text{V}; I_E=0$ | | | 0.1 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}= 400\text{V}; I_B= 0$ | | | 0.5 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}= 7\text{V}; I_C= 0$ | | | 10 | mA |
| h_{FE} | DC Current Gain | $I_C= 4\text{A}; V_{CE}= 2\text{V}$ | 500 | | | |

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