

# isc Silicon NPN Power Transistor

**3DD167D**

## DESCRIPTION

- With TO-3 packaging
- Large collector current
- Low collector saturation voltage
- High power dissipation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

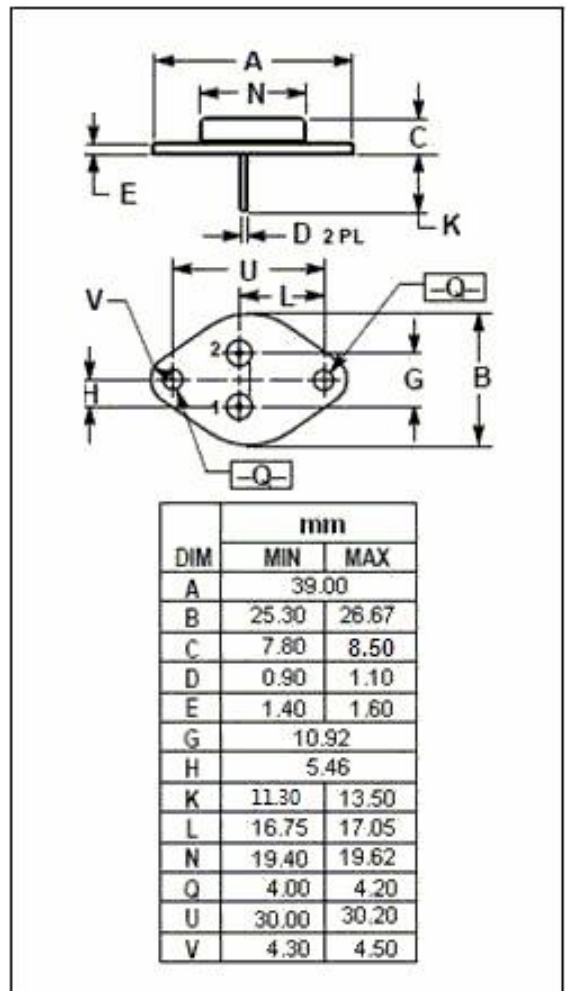
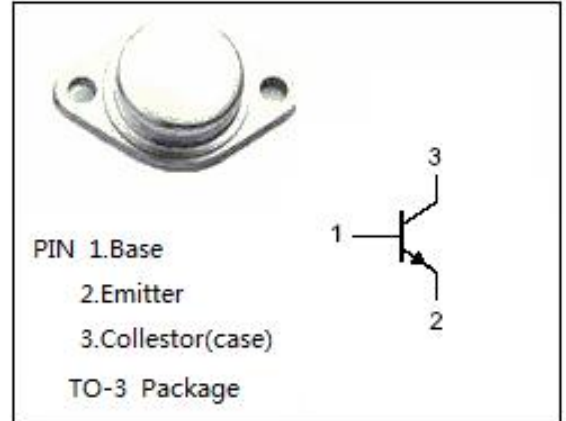
- Designed for use in DC-DC converter
- Driver of solenoid or motor

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

| SYMBOL    | PARAMETER                                         | VALUE   | UNIT               |
|-----------|---------------------------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage                            | 250     | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage                         | 200     | V                  |
| $V_{EBO}$ | Emitter-Base Voltage                              | 5       | V                  |
| $I_C$     | Collector Current-Continuous                      | 15      | A                  |
| $P_D$     | Total Power Dissipation@ $T_c=75^{\circ}\text{C}$ | 150     | W                  |
| $T_J$     | Max.Junction Temperature                          | 175     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature                               | -55~175 | $^{\circ}\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                           | MAX  | UNIT                 |
|---------------|-------------------------------------|------|----------------------|
| $R_{th\ j-c}$ | Thermal Resistance,Junction to Case | 0.66 | $^{\circ}\text{C/W}$ |



**isc Silicon NPN Power Transistor****3DD167D****ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

| SYMBOL               | PARAMETER                            | CONDITIONS                                    | MIN | MAX | UNIT |
|----------------------|--------------------------------------|-----------------------------------------------|-----|-----|------|
| BV <sub>CBO</sub>    | Collector-Base Sustaining Voltage    | I <sub>C</sub> = 5mA; I <sub>E</sub> = 0      | 250 |     | V    |
| BV <sub>CEO</sub>    | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 5mA; I <sub>B</sub> = 0      | 200 |     | V    |
| BV <sub>EBO</sub>    | Emitter-Base Sustaining Voltage      | I <sub>E</sub> = 10mA; I <sub>C</sub> =0      | 5   |     | V    |
| V <sub>CE(sat)</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 7.5A; I <sub>B</sub> = 0.75A |     | 1.5 | V    |
| V <sub>BE(sat)</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 7.5A; I <sub>B</sub> = 0.75A |     | 1.8 | V    |
| I <sub>CEO</sub>     | Collector Cutoff Current             | V <sub>CE</sub> =100V; I <sub>E</sub> = 0     |     | 2   | mA   |
| h <sub>FE</sub>      | DC Current Gain                      | I <sub>C</sub> = 7.5A; V <sub>CE</sub> = 5V   | 15  | 120 |      |

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