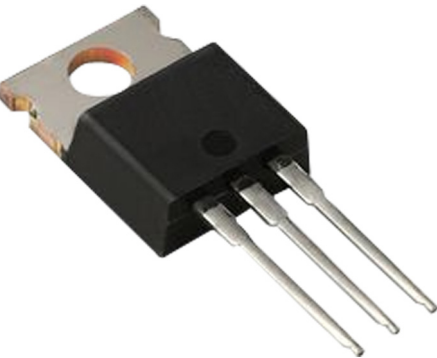
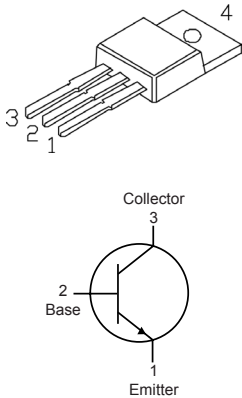


RoHS  
Compliant

NPN



## Maximum Ratings:

| Characteristic                                                                  | Symbol    | Rating      | Unit                 |
|---------------------------------------------------------------------------------|-----------|-------------|----------------------|
| Collector-Base Voltage                                                          | $V_{CBO}$ | 70          | V                    |
| Collector-Emitter Voltage                                                       | $V_{CEO}$ | 80          |                      |
| Emitter-Base Voltage                                                            | $V_{EBO}$ | 5           |                      |
| Continuous Collector Current                                                    | $I_C$     | 7           | A                    |
| Base Current                                                                    | $I_B$     | 3           |                      |
| Total Device Dissipation ( $T_C = +25^{\circ}C$ )<br>Derate Above $25^{\circ}C$ | $P_D$     | 40          | W<br>mW/ $^{\circ}C$ |
| Operating Junction Temperature Range                                            | $T_J$     | -65 to +150 | $^{\circ}C$          |
| Storage Temperature Range                                                       | $T_{stg}$ |             |                      |

# Power Transistor



## Electrical Characteristics ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min. | Max. | Unit |
|-----------|--------|-----------------|------|------|------|
|-----------|--------|-----------------|------|------|------|

### OFF Characteristics

|                                              |               |                                                  |    |     |               |
|----------------------------------------------|---------------|--------------------------------------------------|----|-----|---------------|
| Collector-Emitter Breakdown Voltage (Note 1) | $V_{(BR)CEO}$ | $I_C = 100\text{mA}, I_B = 0$                    | 70 | -   | V             |
| Collector Cut-Off Current                    | $I_{CEX}$     | $V_{CE} = 80\text{V}, V_{EB(off)} = 1.5\text{V}$ | -  | 100 | $\mu\text{A}$ |
|                                              | $I_{CEO}$     | $V_{CB} = 60\text{V}, I_B = 0$                   |    | 1   | mA            |
| Emitter Cut-Off Current                      | $I_{EBO}$     | $V_{EB} = 5\text{V}, I_C = 0$                    |    |     |               |

### ON Characteristics

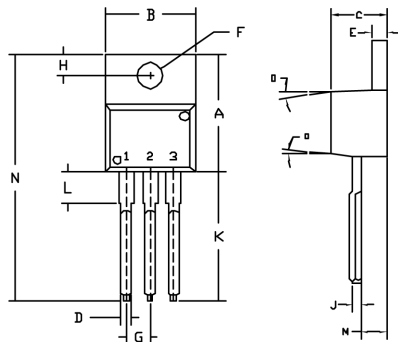
|                                                 |               |                                       |     |     |   |
|-------------------------------------------------|---------------|---------------------------------------|-----|-----|---|
| DC Current Gain (Note 1)                        | $h_{FE}$      | $V_{CE} = 4\text{V}, I_C = 2\text{A}$ | 30  | 150 | - |
|                                                 |               | $V_{CE} = 4\text{V}, I_C = 7\text{A}$ | 2.3 | -   |   |
| Collector - Emitter Saturation Voltage (Note 1) | $V_{CE(sat)}$ | $I_C = 7\text{A}, I_B = 3\text{A}$    | -   | 3.5 | V |
| Base - Emitter on Voltage (Note 1)              | $V_{BE(on)}$  | $I_C = 7\text{A}, V_{CE} = 4\text{V}$ |     | 3   |   |

### Small Signal Characteristics

|                                         |           |                                                           |   |     |          |
|-----------------------------------------|-----------|-----------------------------------------------------------|---|-----|----------|
| Current Gain-Bandwidth Product (Note 2) | $f_T$     | $V_{CE} = 4\text{V}, I_C = 500\text{mA}, f = 1\text{MHz}$ | 4 | -   | MHz      |
| Output Capacitance                      | $C_{ObO}$ | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$           | - | 250 | pF       |
| Small-Signal Current Gain               | $h_{fe}$  | $V_{CE} = 4\text{V}, I_C = .5\text{A}, f = 50\text{MHz}$  | - | 0.3 | $\Omega$ |

Note 1 : Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

Note 2 :  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity



### Pin Configuration:

- 1 Base
- 2 Collector
3. Emitter
4. Collector

| Dimensions | Min.  | Max.  |
|------------|-------|-------|
| A          | 14.42 | 16.51 |
| B          | 9.63  | 10.67 |
| C          | 3.56  | 4.83  |
| D          | -     | 0.9   |
| E          | 1.15  | 1.4   |
| F          | 3.75  | 3.88  |
| G          | 2.29  | 2.79  |
| H          | 2.54  | 3.43  |
| J          | -     | 0.56  |
| K          | 12.7  | 14.73 |
| L          | 2.8   | 4.07  |
| M          | 2.03  | 2.92  |
| N          | -     | 31.24 |
| O          | DEF 7 |       |

Dimensions : Millimetres

### Part Number Table

| Description                      | Part Number |
|----------------------------------|-------------|
| Transistor, NPN, 7A, 70V, TO-220 | 2N6292      |

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