

# Medium Power Transistor



## Pin Configuration

1. Emitter
2. Base
3. Collector

## Features:

- High performance, low frequency devices typically with current ratings 2A. Up to 1W power dissipation
- PNP Epitaxial Planar Silicon Transistors

## Absolute Maximum Ratings:

( $T_a = 25^\circ\text{C}$  unless otherwise specified)

| Characteristic                                                             | Symbol         | Value       | Unit             |
|----------------------------------------------------------------------------|----------------|-------------|------------------|
| Collector Base Voltage                                                     | $V_{CBO}$      | 350         | V                |
| Collector-Emitter Voltage                                                  | $V_{CEO(sus)}$ | 300         |                  |
| Collector-Emitter Voltage $R_{BE} = 100\Omega$                             | $V_{CER}$      |             |                  |
| Emitter-Base Voltage                                                       | $V_{EBO}$      | 6           |                  |
| Collector Peak Current                                                     | $I_{CM}$       | 1           | A                |
| Base Current                                                               | $I_B$          | 0.5         |                  |
| Power Dissipation at $T_a = 25^\circ\text{C}$<br>at $T_C 25^\circ\text{C}$ | $P_{tot}$      | 1<br>10     | W                |
| Operating Storage Temperature Range                                        | $T_J, T_{stg}$ | -65 to +200 | $^\circ\text{C}$ |

## Thermal Resistance

|                     |               |      |                    |
|---------------------|---------------|------|--------------------|
| Junction to Ambient | $R_{th(j-a)}$ | 17.5 | $^\circ\text{C/W}$ |
| Junction to Case    | $R_{th(j-c)}$ |      |                    |

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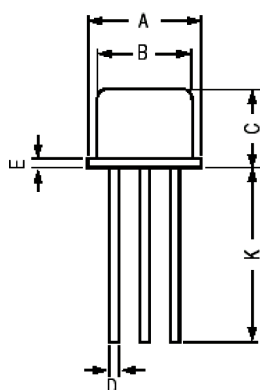
## Electrical Characteristics:

( $T_a = +25^\circ\text{C}$  unless otherwise specified)

| Parameter                                      | Symbol          | Test Condition                                    | Min. | Max. | Unit          |
|------------------------------------------------|-----------------|---------------------------------------------------|------|------|---------------|
| Collector-Cut off Current $R_{BE} = 100\Omega$ | $I_{CBO}$       | $V_{CB} = 40V, I_E = 0$                           | -    | 100  | nA            |
|                                                | $I_{CER}$       | $V_{CE} = 70V$                                    |      | 10   | $\mu\text{A}$ |
| Collector-Emitter Voltage                      | $V_{CEO}^*$     | $I_C = 10\text{mA}, I_B = 0$                      | 60   | -    | V             |
| Emitter-Base Voltage                           | $V_{EBO}$       | $I_E = 100\mu\text{A}, I_C = 0$                   | 5    |      |               |
| DC Current Gain                                | $h_{FE}^*$      | $I_C = 500\text{mA}, V_{CE} = 4V$                 | 40   | 250  | -             |
| Collector Emitter Saturation Voltage           | $V_{CE(sat)}^*$ | $I_C = 1,000\text{mA}, I_B = 100\text{mA}$        | -    | 1    | V             |
| Base Emitter Saturation Voltage                | $V_{BE(sat)}^*$ | $I_C = 1A, I_B = 100\text{mA}$                    |      | 1.5  |               |
| Transition Frequency                           | $f_t$           | $I_C = 50\text{mA}, V_{CE} = 4V, f = 1\text{MHz}$ | 50   | -    | MHz           |

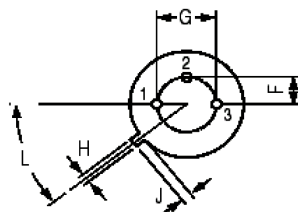
\*Pulse : Pulse Duration = 300 $\mu\text{s}$ , Duty Cycle = 1%

## TO-39 Metal Can Package



| Dim. | Min. | Max. |
|------|------|------|
| A    | 8.5  | 9.39 |
| B    | 7.74 | 8.5  |
| C    | 6.09 | 6.6  |
| D    | 0.4  | 0.53 |
| E    | -    | 0.88 |
| F    | 2.41 | 2.66 |
| G    | 4.82 | 5.33 |
| H    | 0.71 | 0.86 |
| J    | 0.73 | 1.02 |
| K    | 12.7 | -    |
| L    | 42°  | 48°  |

Dimensions : Millimetres



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1. Emitter
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### Part Number Table

| Description            | Part Number |
|------------------------|-------------|
| Transistor, PNP, TO-39 | BC461       |

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