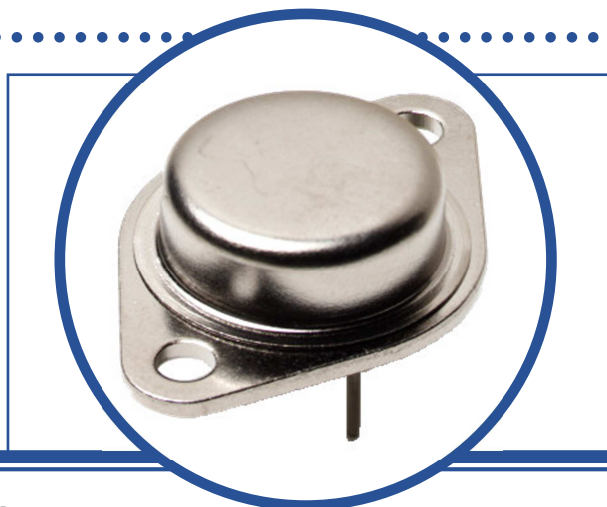


# SILICON HIGH POWER NPN TRANSISTOR

## 2N5672

- High Current Rating
- Hermetic TO3 Metal Package.
- Designed For High Speed Switching Applications
- Screening Options Available



### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

|           |                                                     |                             |
|-----------|-----------------------------------------------------|-----------------------------|
| $V_{CBO}$ | Collector – Base Voltage                            | 150V                        |
| $V_{CEO}$ | Collector – Emitter Voltage                         | 120V                        |
| $V_{EBO}$ | Emitter – Base Voltage                              | 7.0V                        |
| $I_C$     | Continuous Collector Current                        | 30A                         |
| $I_B$     | Base Current                                        | 10A                         |
| $P_D$     | Total Power Dissipation at $T_A = 25^\circ\text{C}$ | 6W                          |
|           | Derate Above $25^\circ\text{C}$                     | 34mW/ $^\circ\text{C}$      |
| $P_D$     | Total Power Dissipation at $T_C = 25^\circ\text{C}$ | 140W                        |
|           | Derate Above $25^\circ\text{C}$                     | 800mW/ $^\circ\text{C}$     |
| $T_J$     | Junction Temperature Range                          | -65 to $+200^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                           | -65 to $+200^\circ\text{C}$ |

### THERMAL PROPERTIES

| Symbols         | Parameters                           | Max. | Units              |
|-----------------|--------------------------------------|------|--------------------|
| $R_{\theta JC}$ | Thermal Resistance, Junction To Case | 1.25 | $^\circ\text{C/W}$ |

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

# SILICON HIGH POWER NPN TRANSISTOR 2N5672

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

| Symbols             | Parameters                           | Test Conditions                                | Min. | Typ | Max. | Units |
|---------------------|--------------------------------------|------------------------------------------------|------|-----|------|-------|
| $V_{(BR)CEO}^{(1)}$ | Collector-Emitter Breakdown Voltage  | $I_C = 50\text{mA}$ $I_B = 0$                  | 120  |     |      | V     |
| $V_{(BR)CEX}$       | Collector-Emitter Breakdown Voltage  | $I_C = 10\text{mA}$ $V_{BE} = -1.5\text{V}$    | 150  |     |      |       |
| $V_{(BR)CER}^{(1)}$ | Collector-Emitter Breakdown Voltage  | $I_C = 10\text{mA}$ $R_{BE} = 50\Omega$        | 140  |     |      |       |
| $I_{CEX}$           | Collector-Emitter Cut-Off Current    | $V_{CE} = 135\text{V}$ $V_{BE} = -1.5\text{V}$ |      |     | 10   | mA    |
| $I_{CEO}$           | Collector-Emitter Cut-Off Current    | $V_{CE} = 80\text{V}$ $I_B = 0$                |      |     | 10   |       |
| $I_{EBO}$           | Emitter Cut-Off Current              | $V_{EB} = 7.0\text{V}$ $I_C = 0$               |      |     | 10   |       |
| $h_{FE}^{(1)}$      | DC Current Gain                      | $I_C = 20\text{A}$ $V_{CE} = 5.0\text{V}$      | 20   |     |      |       |
|                     |                                      | $I_C = 15\text{A}$ $V_{CE} = 2.0\text{V}$      | 20   |     | 100  |       |
| $V_{BE}^{(1)}$      | Base-Emitter Voltage                 | $I_C = 15\text{A}$ $V_{CE} = 5.0\text{V}$      |      |     | 1.6  | V     |
| $V_{CE(sat)}^{(1)}$ | Collector-Emitter Saturation Voltage | $I_C = 15\text{A}$ $I_B = 1.2\text{A}$         |      |     | 0.75 |       |
| $V_{BE(sat)}^{(1)}$ | Base-Emitter Saturation Voltage      | $I_C = 15\text{A}$ $I_B = 1.2\text{A}$         |      |     | 1.5  |       |

## DYNAMIC CHARACTERISTICS

|           |                      |                                                                  |    |  |     |               |
|-----------|----------------------|------------------------------------------------------------------|----|--|-----|---------------|
| $f_T$     | Transition Frequency | $I_C = 2.0\text{A}$ $V_{CE} = 10\text{V}$<br>$f = 5.0\text{MHz}$ | 30 |  |     | MHz           |
| $C_{obo}$ | Output Capacitance   | $V_{CB} = 10\text{V}$ $I_E = 0$<br>$f = 1.0\text{MHz}$           |    |  | 900 | pF            |
| $t_{on}$  | Turn-on Time         | $V_{CC} = 30\text{V}$ $I_C = 15\text{A}$                         |    |  | 0.5 | $\mu\text{s}$ |
| $t_{off}$ | Turn-off Time        | $I_{B1} = -I_{B2} = 1.2\text{A}$                                 |    |  | 2.0 |               |

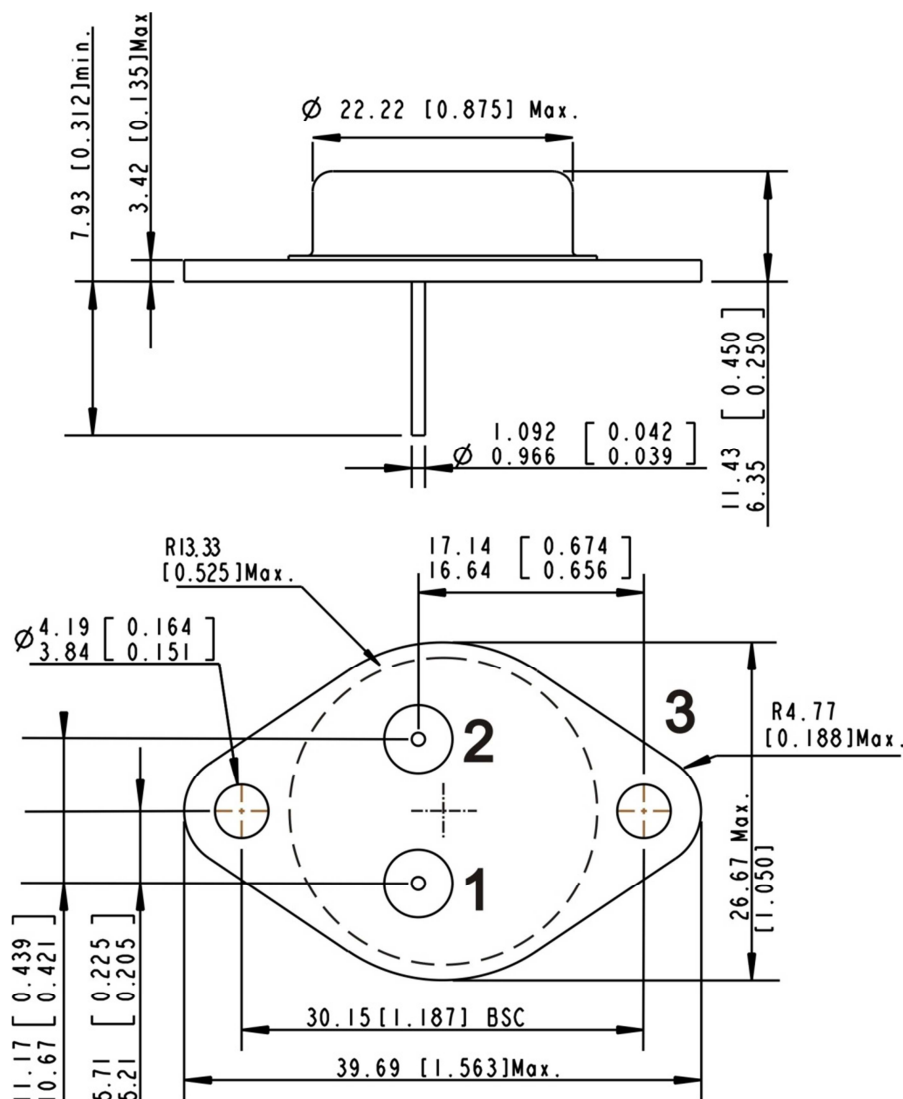
### Notes

(1) Pulse Width  $\leq 380\mu\text{s}$ ,  $\delta \leq 2\%$



**TT electronics**  
**Semelab Limited**

Dimensions in mm (inches)

**T03 (TO-204AA)**

Pin 1 - Base

Pin 2 - Emitter

## Case - Collector