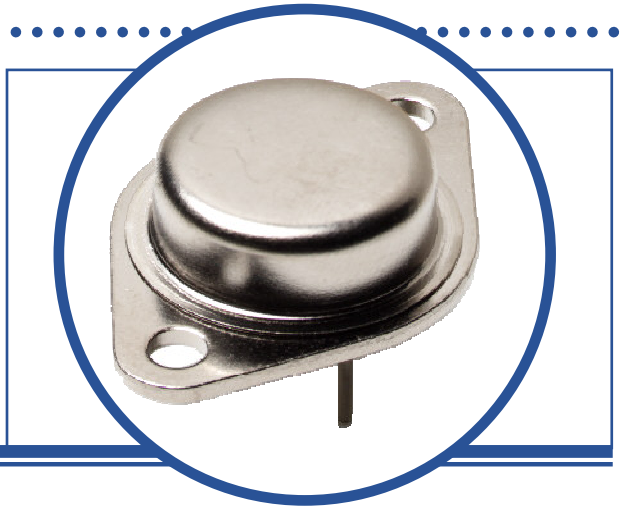
# FAST SWITCHING NPN POWER TRANSISTOR

TT electronics
Semelab Limited

# BUV62A

- Fast Switching Times
- Low Switching Losses
- Low Saturation Voltage
- Hermetic TO3 Metal package.
- Ideally suited for Motor Control, Switching and Linear Applications
- High Reliability Screening Options Available



## ABSOLUTE MAXIMUM RATINGS ($T_C$ = 25°C unless otherwise stated)

| | | | |
|---|---|---|---|
| $V_{CEV}$ | Collector – Emitter Voltage | $V_{BE}$ = -1.5V | 400V |
| $V_{CEO}$ | Collector – Emitter Voltage | | 300V |
| $V_{EBO}$ | Emitter – Base Voltage | | 7V |
| $I_C$ | Continuous Collector Current | | 40A |
| $I_{CM}$ | Peak Collector Current | | 60A |
| $I_B$ | Base Current | | 8A |
| $I_{BM}$ | Base Peak Current | | 12A |
| $P_D$ | Total Power Dissipation at | $T_C$ = 25°C | 250W |
| | | Derate Above 25°C | 1.43W/°C |
| $T_J$ | Junction Temperature Range | | -55 to +200°C |
| $T_{stg}$ | Storage Temperature Range | | -65 to +200°C |

### THERMAL PROPERTIES

| Symbols | Parameters | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|
| $R_{\theta JC}$ | Thermal Resistance, Junction To Case | | | 0.70 | °C/W |



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## ELECTRICAL CHARACTERISTICS ($T_C$ = 25°C unless otherwise stated)

| Symbols | Parameters | Test Conditions | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$[1] | Collector-Emitter Breakdown Voltage | $I_C$ = 10mA | $I_B$ = 0 | 300 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = 50mA | $I_C$ = 0 | 7 | | | |
| $I_{CEX}$ | Collector Cut-Off Current | $V_{CE}$ = 400V | $V_{BE}$ = -1.5V | | | 1.0 | mA |
| | | | $T_j$ = 100°C | | | 4.0 | |
| $I_{CER}$ | Collector Cut-Off Current | $V_{CE}$ = 400V | $R_{BE}$ = 10Ω | | | 1.0 | |
| | | | $T_j$ = 100°C | | | 5.0 | |
| $I_{EBO}$ | Emitter Cut-Off Current | $V_{EB}$ = 5V | $I_C$ = 0 | | | 1.0 | |
| $V_{CE(sat)}$[1] | Collector-Emitter Saturation Voltage | $I_C$ = 15A | $I_B$ = 1.5A | | | 0.9 | V |
| | | | $T_j$ = 100°C | | | 1.9 | |
| $V_{BE(sat)}$[1] | Base-Emitter Saturation Voltage | $I_C$ = 15A | $I_B$ = 1.5A | | | 1.3 | |
| | | | $T_j$ = 100°C | | | 1.3 | |

**Notes**
(1) Pulse Width ≤ 300us, δ ≤ 2%

## DYNAMIC CHARACTERISTICS (Inductive Load)

| Symbols | Parameters | Test Conditions | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| $t_s$ | Storage Time | $V_{CC}$ = 250V<br>$I_C$ = 15A<br>$V_{BB}$ = -5V<br>$L_C$ = 0.83mH | $V_{clamp}$ = 300V<br>$I_B$ = 1.5A<br>$R_{B2}$ = 1.6Ω<br>$T_j$ = 100°C | | 2.2 | | µs |
| $t_f$ | Fall Time | | | | 0.2 | | |
| $t_c$ | Crossover Time | | | | 0.3 | | |
| $V_{CEW}$ | Maximum Collector Emitter Voltage without Snubber | $V_{CC}$ = 50V<br>$V_{BB}$ = -5V<br>$L_C$ = 0.83mH<br>$T_j$ = 125°C | $I_{CWoff}$ = 22A<br>$I_{B1}$ = 1.5A<br>$R_{BB}$ = 1.6Ω | 300 | | | V |

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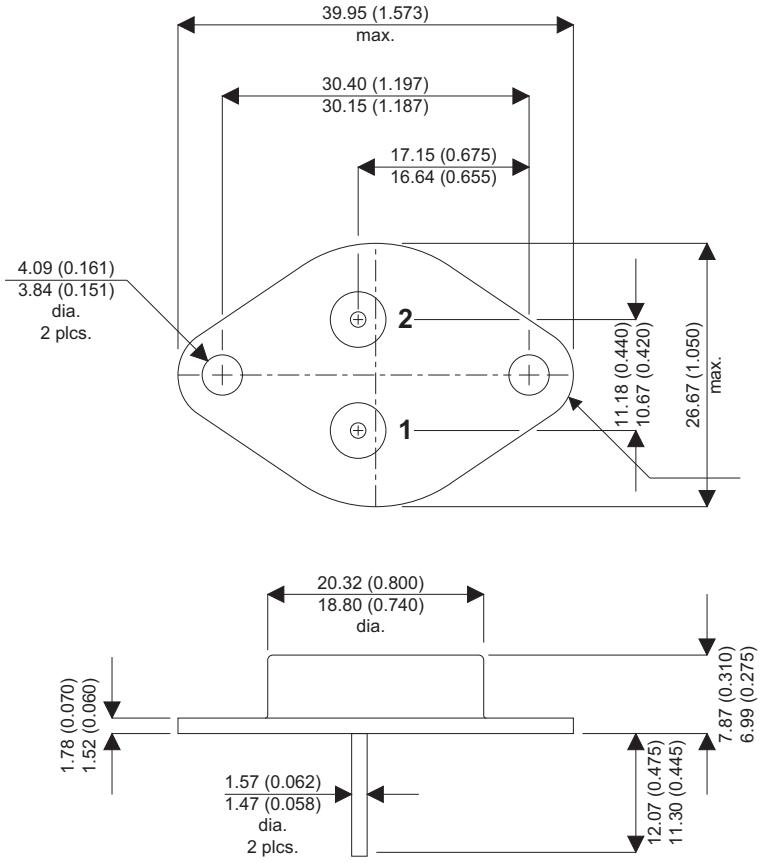
## MECHANICAL DATA

Dimensions in mm (inches)




**TO3 (TO-204AE)**

Pin 1 - Base  Pin 2 - Emitter  Case - Collector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