



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

TIP36A, TIP36B, TIP36C Silicon PNP Transistors Power Amp, Switch TO-247 Type Package

Features:

- 25A Collector Current
- Low Leakage Current: $I_{CEO} = 1\text{mA}$ @ 30V and 60V
- Excellent DC Gain: $h_{FE} = 40$ (Typ) @ $I_C = 15\text{A}$
- High Current Gain Bandwidth Product: $|h_{fe}| = 3$ (Min) @ $I_C = 1\text{A}$, $f = 1\text{MHz}$

Absolute Maximum Ratings:

| | | |
|--|-------|-------------------------------------|
| Collector-Base Voltage, V_{CB} | | |
| TIP36A | | 60V |
| TIP36B | | 80V |
| TIP36C | | 100V |
| Collector-Emitter Voltage, V_{CEO} | | |
| TIP36A | | 60V |
| TIP36B | | 80V |
| TIP36C | | 100V |
| Emitter-Base Voltage, V_{EB} | | 5V |
| Continuous Current, I_C | | |
| Continuous | | 25A |
| Peak (Note 1) | | 40A |
| Continuous Base Current, I_B | | 5A |
| Unclamped Inductive Load, E_{SB} | | 90mJ |
| Power Dissipation ($T_C = +25^\circ\text{C}$), P_D | | 125W |
| Derate Above $+25^\circ\text{C}$ | | $1.0\text{W}/^\circ\text{C}$ |
| Operating Junction Temperature Range, T_J | | -65° to $+150^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | | -65° to $+150^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Case, R_{thJC} | | $1.0^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction-to-Ambient, R_{thJA} | | $35.7^\circ\text{C}/\text{W}$ |

Note 1. Pulse Test: Pulse Width = 10ms, Duty Cycle $\leq 10\%$.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------|--|-----|-----|-----|------|
| OFF Characteristics | | | | | | |
| Collector-Emitter Sustaining Voltage | $V_{CEO(sus)}$ | $I_C = 30\text{mA}$, $I_B = 0$, Note 2 | 60 | - | - | V |
| TIP36A | | | | | | |
| TIP36B | | | | | | |
| TIP36C | | | 100 | - | - | V |

Note 2. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|------|
| Collector Cutoff Current TIP36A | I_{CEO} | $V_{CE} = 30\text{V}, I_B = 0$ | - | - | 1.0 | mA |
| TIP36B, TIP36C | | $V_{CE} = 60\text{V}, I_B = 0$ | - | - | 1.0 | mA |
| Collector Cutoff Current | I_{CES} | $V_{CE} = \text{Rated } V_{CEO}, V_{EB} = 0$ | - | - | 0.7 | mA |
| Emitter Cutoff Current | I_{EBO} | $V_{BE} = 5\text{V}, I_C = 0$ | - | - | 1.0 | mA |
| ON Characteristics (Note 2) | | | | | | |
| DC Current Gain | h_{FE} | $V_{CE} = 4\text{V}, I_C = 1.5\text{A}$ | 25 | - | - | |
| | | $V_{CE} = 4\text{V}, I_C = 15\text{A}$ | 15 | - | 75 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 15\text{A}, I_B = 1.5\text{A}$ | - | - | 1.8 | V |
| | | $I_C = 25\text{A}, I_B = 5\text{A}$ | - | - | 4.0 | V |
| Base-Emitter ON Voltage | $V_{BE(on)}$ | $V_{CE} = 4\text{V}, I_C = 15\text{A}$ | - | - | 2.0 | V |
| | | $V_{CE} = 4\text{V}, I_C = 25\text{A}$ | - | - | 4.0 | V |
| Dynamic Characteristics | | | | | | |
| Small-Signal Current Gain | h_{fe} | $V_{CE} = 10\text{V}, I_C = 1.0\text{A}, f = 1\text{kHz}$ | 25 | - | - | |
| Current-Gain Bandwidth Product | f_T | $V_{CE} = 10\text{V}, I_C = 1.0\text{A}, f = 1\text{MHz}$ | 3 | - | - | MHz |

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

