**SGS-THOMSON**
MICROELECTRONICS

# TIP35C
# TIP36B/36C

## COMPLEMENTARY SILICON HIGH POWER TRANSISTORS

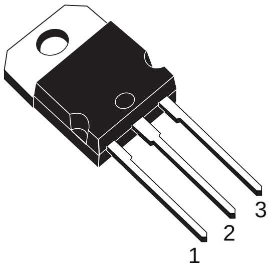
- SGS-THOMSON PREFERRED SALESTYPE

### DESCRIPTION

The TIP35C is a silicon epitaxial-base NPN transistors in TO-218 plastic package. It is intented for use in power amplifier and switching applications.

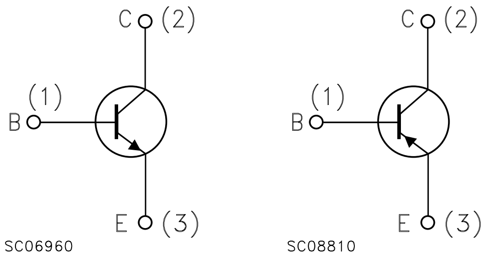
TIP36B is a silicon PNP transistor.

The complementary PNP type for TIP35C is TIP36C.



**TO-218**

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | | Value | | Unit |
|---|---|---|---|---|---|
| | | NPN | | TIP35C | |
| | | PNP | TIP36B | TIP36C | |
| $V_{CBO}$ | Collector-Base Voltage ($I_E$ = 0) | | 80 | 100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage ($I_B$ = 0) | | 80 | 100 | V |
| $V_{EBO}$ | Emitter-Base Voltage ($I_C$ = 0) | | 5 | | V |
| $I_C$ | Collector Current | | 25 | | A |
| $I_{CM}$ | Collector Peak Current | | 50 | | A |
| $I_B$ | Base Current | | 5 | | A |
| $P_{tot}$ | Total Dissipation at $T_{case} \leq 25\ ^oC$ | | 125 | | W |
| $T_{stg}$ | Storage Temperature | | -65 to 150 | | $^oC$ |
| $T_j$ | Max. Operating Junction Temperature | | 150 | | $^oC$ |

For PNP types voltage and current values are negative.

## THERMAL DATA

| | | | | |
|---|---|---|---|---|
| $R_{thj\text{-}case}$ | Thermal Resistance Junction-case | Max | 1 | $^oC/W$ |

## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25 $^oC$ unless otherwise specified)

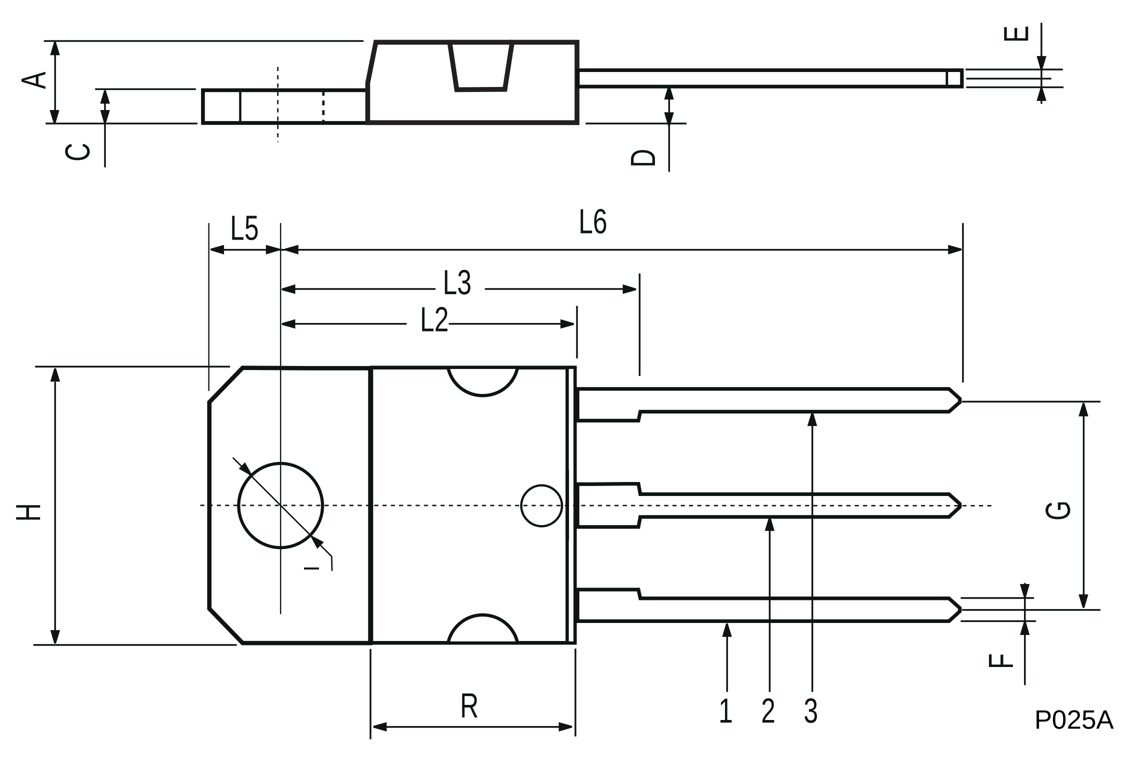
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cut-off Current ($I_B$ = 0) | $V_{CB}$ = 60 V | | | 1 | mA |
| $I_{EBO}$ | Emitter Cut-off Current ($I_C$ = 0) | $V_{EB}$ = 5 V | | | 1 | mA |
| $I_{CES}$ | Collector Cut-off Current ($V_{BE}$ = 0) | $V_{CE}$ = Rated $V_{CEO}$ | | | 0.7 | mA |
| $V_{CEO(sus)}$* | Collector-Emitter Sustaining Voltage ($I_B$ = 0) | $I_C$ = 30 mA<br>for **TIP36B**<br>for **TIP35C/36C** | <br>80<br>100 | | | <br>V<br>V |
| $h_{FE}$* | DC Current Gain | $I_C$ = 1.5 A $V_{CE}$ = 4 V<br>$I_C$ = 15 A $V_{CE}$ = 4 V | 25<br>10 | | <br>50 | |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage | $I_C$ = 15 A $I_B$ = 1.5 A<br>$I_C$ = 25 A $I_B$ = 5 A | | | 1.8<br>4 | V |
| $V_{BE(on)}$* | Base-Emitter Voltage | $I_C$ = 15 A $V_{CE}$ = 4 V<br>$I_C$ = 25 A $V_{CE}$ = 4 V | | | 2<br>4 | V<br>V |
| $f_T$ | Transition Frequency | $I_C$ = 1 A $V_{CE}$ = 10 V<br>f = 1 MHz | 3 | | | MHz |
| $h_{fe}$ | Small Signal Current Gain | $I_C$ = 1 A $V_{CE}$ = 10 V<br>f = 1 KHz | 25 | | | |

∗ Pulsed: Pulse duration = 300 µs, duty cycle ≤ 2 %

For PNP types voltage and current values are negative.

## TO-218 (SOT-93) MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.7 | | 4.9 | 0.185 | | 0.193 |
| C | 1.17 | | 1.37 | 0.046 | | 0.054 |
| D | | 2.5 | | | 0.098 | |
| E | 0.5 | | 0.78 | 0.019 | | 0.030 |
| F | 1.1 | | 1.3 | 0.043 | | 0.051 |
| G | 10.8 | | 11.1 | 0.425 | | 0.437 |
| H | 14.7 | | 15.2 | 0.578 | | 0.598 |
| L2 | – | | 16.2 | – | | 0.637 |
| L3 | | 18 | | | 0.708 | |
| L5 | 3.95 | | 4.15 | 0.155 | | 0.163 |
| L6 | | 31 | | | 1.220 | |
| R | – | | 12.2 | – | | 0.480 |
| Ø | 4 | | 4.1 | 0.157 | | 0.161 |



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