



# TIP35C TIP36B/TIP36C

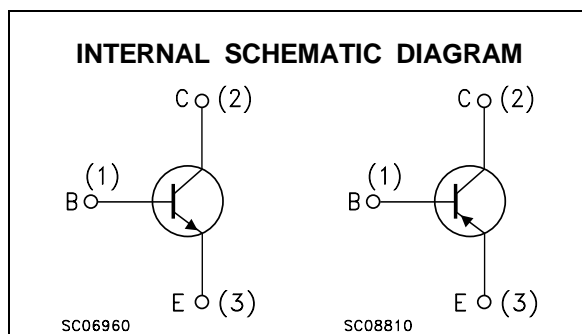
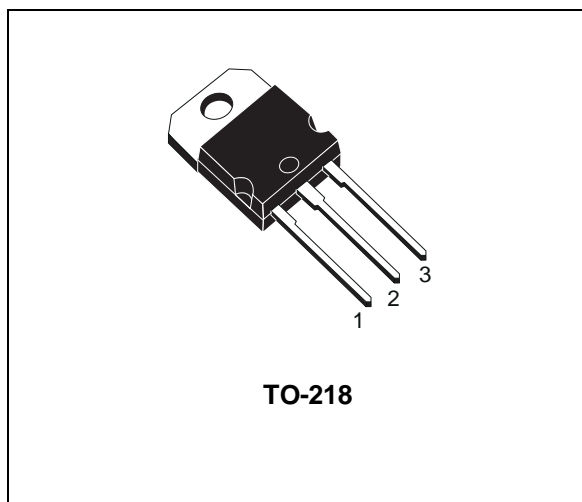
## COMPLEMENTARY SILICON HIGH POWER TRANSISTORS

- STMicroelectronic PREFERRED SALESTYPES

### DESCRIPTION

The TIP35C is a silicon Epitaxial-Base NPN transistor mounted in TO-218 plastic package. It is intended for use in power amplifier and switching applications.

The complementary PNP type is TIP36C.  
Also TIP36B is a PNP type.



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter                                       | Value      |        | Unit       |
|-----------|-------------------------------------------------|------------|--------|------------|
|           |                                                 | NPN        | TIP35C |            |
|           |                                                 | PNP        | TIP36B |            |
| $V_{CBO}$ | 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 $T_{case} \leq 25^\circ C$ | 125        |        | W          |
| $T_{stg}$ | Storage Temperature                             | -65 to 150 |        | $^\circ C$ |
| $T_j$     | Max. Operating Junction Temperature             | 150        |        | $^\circ C$ |

For PNP types voltage and current values are negative.

## TIP35C / TIP36B / TIP36C

### THERMAL DATA

|                       |                                  |     |   |      |
|-----------------------|----------------------------------|-----|---|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case | Max | 1 | °C/W |
|-----------------------|----------------------------------|-----|---|------|

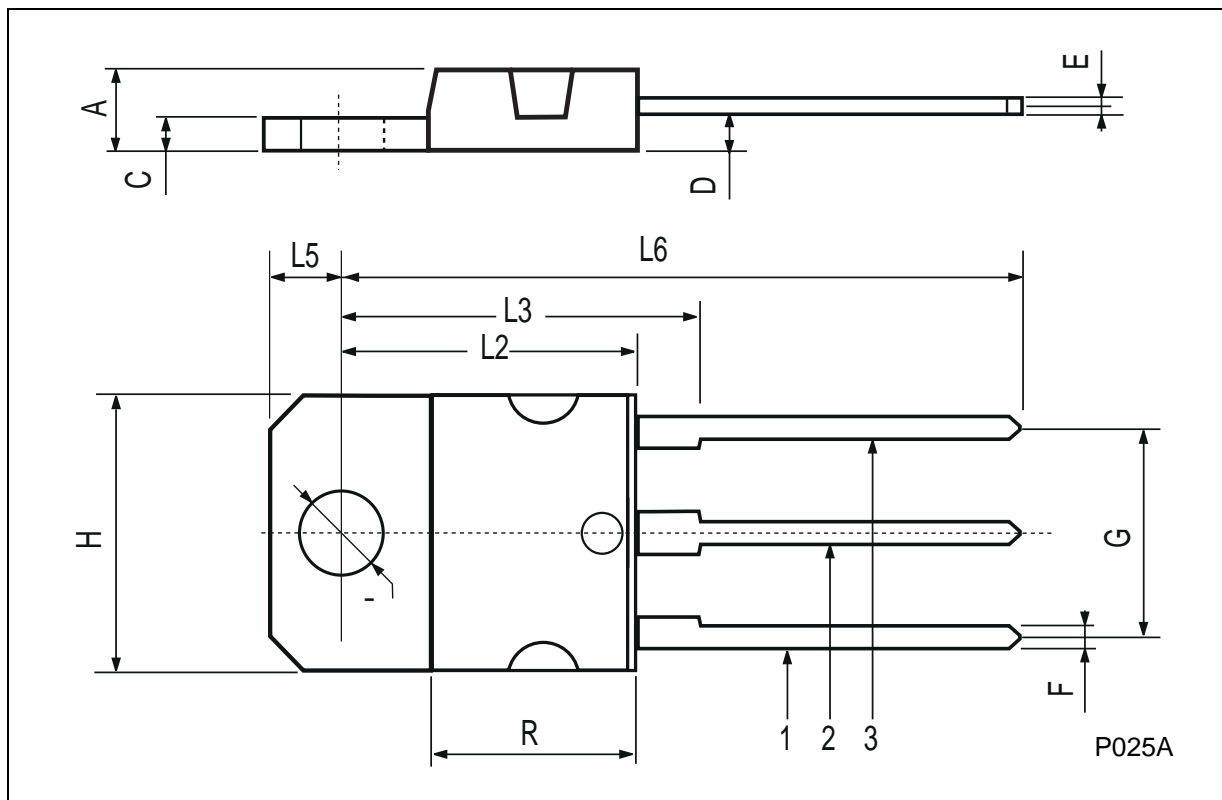
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

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