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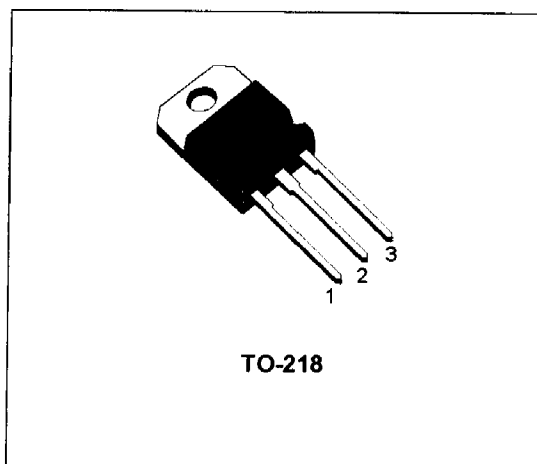
## TIP35C TIP36B/TIP36C

### 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.

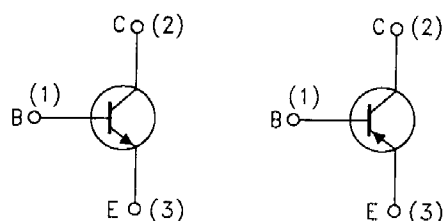
The complementary PNP type is TIP36C.

Also TIP36B is a PNP type.



TO-218

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter                                       | Value      |            | Unit       |
|-----------|-------------------------------------------------|------------|------------|------------|
|           |                                                 | NPN        | TIP35C     |            |
| $V_{CBO}$ | 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          | 5          | V          |
| $I_C$     | Collector Current                               | 25         | 25         | A          |
| $I_{CM}$  | Collector Peak Current                          | 50         | 50         | A          |
| $I_B$     | Base Current                                    | 5          | 5          | A          |
| $P_{tot}$ | Total Dissipation at $T_{case} \leq 25^\circ C$ | 125        | 125        | W          |
| $T_{stg}$ | Storage Temperature                             | -65 to 150 | -65 to 150 | $^\circ C$ |
| $T_J$     | Max. Operating Junction Temperature             | 150        | 150        | $^\circ C$ |

For PNP types voltage and current values are negative.

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



## THERMAL DATA

|                |                                  |     |   |      |
|----------------|----------------------------------|-----|---|------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 1 | °C/W |
|----------------|----------------------------------|-----|---|------|

## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

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

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle  $\leq 2\%$   
For PNP types voltage and current values are negative.

| 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 |

