

## PNP TIP34-A-B-C

### SILICON POWER TRANSISTORS

They are PNP power transistors mounted in jedec TO-3PN. They are intended for use in general purpose power amplifier and switching applications.

NPN complements are TIP33-A-B-C

Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                   |        | Value | Unit |
|-----------|---------------------------|--------|-------|------|
| $V_{CBO}$ | Collector-Base Voltage    | TIP34  | -40   | V    |
|           |                           | TIP34A | -60   |      |
|           |                           | TIP34B | -80   |      |
|           |                           | TIP34C | -100  |      |
| $V_{CEO}$ | Collector-Emitter Voltage | TIP34  | -40   | V    |
|           |                           | TIP34A | -60   |      |
|           |                           | TIP34B | -80   |      |
|           |                           | TIP34C | -100  |      |
| $V_{EBO}$ | Emitter-Base Voltage      | TIP34  | -5    | V    |
|           |                           | TIP34A |       |      |
|           |                           | TIP34B |       |      |
|           |                           | TIP34C |       |      |
| $I_C$     | Collector Current         | TIP34  | -10   | A    |
|           |                           | TIP34A |       |      |
|           |                           | TIP34B |       |      |
|           |                           | TIP34C |       |      |
| $I_{CM}$  | Collector Peak Current    | TIP34  | -15   | A    |
|           |                           | TIP34A |       |      |
|           |                           | TIP34B |       |      |
|           |                           | TIP34C |       |      |

## PNP TIP34-A-B-C

### ABSOLUTE MAXIMUM RATINGS

| Symbol         | Ratings                   |                        |        | Value       | Unit  |
|----------------|---------------------------|------------------------|--------|-------------|-------|
| I <sub>B</sub> | Base Current              |                        | TIP34  | -3          | A     |
|                |                           |                        | TIP34A |             |       |
|                |                           |                        | TIP34B |             |       |
|                |                           |                        | TIP34C |             |       |
| P <sub>C</sub> | Power Dissipation         | @ T <sub>c</sub> < 25° | TIP34  | 80          | Watts |
|                |                           |                        | TIP34A |             |       |
|                |                           |                        | TIP34B |             |       |
|                |                           |                        | TIP34C |             |       |
|                |                           | @ T <sub>a</sub> < 25° | TIP34  | 3.5         |       |
|                |                           |                        | TIP34A |             |       |
|                |                           |                        | TIP34B |             |       |
|                |                           |                        | TIP34C |             |       |
| T <sub>J</sub> | Junction Temperature      |                        | TIP34  | 150         | °C    |
|                |                           |                        | TIP34A |             |       |
|                |                           |                        | TIP34B |             |       |
|                |                           |                        | TIP34C |             |       |
| T <sub>s</sub> | Storage Temperature range |                        | TIP34  | -65 to +150 |       |
|                |                           |                        | TIP34A |             |       |
|                |                           |                        | TIP34B |             |       |
|                |                           |                        | TIP34C |             |       |

### THERMAL CHARACTERISTICS

| Symbol       | Ratings                              |        | Value | Unit               |
|--------------|--------------------------------------|--------|-------|--------------------|
| $R_{thJ-MB}$ | From junction to mounting base       | TIP34  | 1.56  | $^\circ\text{C/W}$ |
|              |                                      | TIP34A |       |                    |
|              |                                      | TIP34B |       |                    |
|              |                                      | TIP34C |       |                    |
| $R_{thJ-A}$  | From junction to ambient in free air | TIP34  | 35.7  | $^\circ\text{C/W}$ |
|              |                                      | TIP34A |       |                    |
|              |                                      | TIP34B |       |                    |
|              |                                      | TIP34C |       |                    |

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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

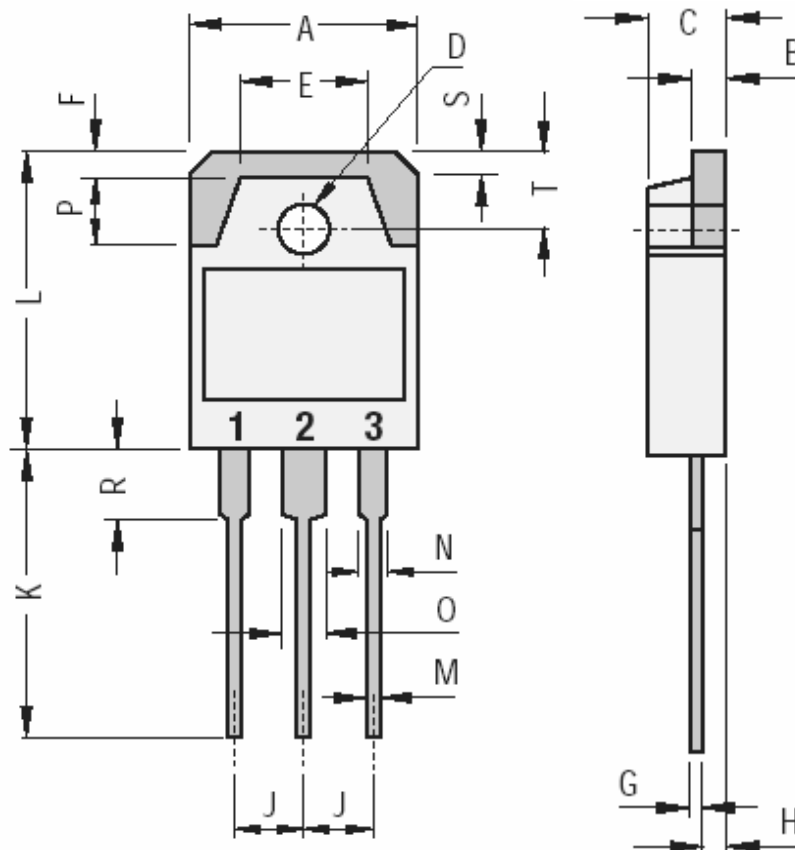
| Symbol               | Ratings                                  | Test Condition(s)                                       |        | Min  | Typ | Max  | Unit |
|----------------------|------------------------------------------|---------------------------------------------------------|--------|------|-----|------|------|
| I <sub>CES</sub>     | Collector Cutoff Current                 | I <sub>E</sub> = 0, V <sub>CE</sub> = -V <sub>CEO</sub> | TIP34  | -    | -   | -0.4 | Ma   |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
| I <sub>CEO</sub>     | Collector Cutoff Current                 | I <sub>B</sub> = 0, V <sub>CE</sub> = -30V              | TIP34  | -    | -   | -0.7 | mA   |
|                      |                                          | TIP34A                                                  |        |      |     |      |      |
|                      |                                          | I <sub>B</sub> = 0, V <sub>CE</sub> = -60V              | TIP34B | -    | -   | -0.7 |      |
|                      |                                          | TIP34C                                                  |        |      |     |      |      |
| I <sub>EBO</sub>     | Emitter Cutoff Current                   | V <sub>EB</sub> = -5 V<br>I <sub>C</sub> = 0            | TIP34  | -    | -   | -1   | mA   |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
| V <sub>CEO</sub>     | Collector-Emitter Breakdown Voltage (*)  | I <sub>C</sub> = -30 mA<br>I <sub>B</sub> = 0           | TIP34  | -40  | -   | -    | V    |
|                      |                                          |                                                         | TIP34A | -60  | -   | -    |      |
|                      |                                          |                                                         | TIP34B | -80  | -   | -    |      |
|                      |                                          |                                                         | TIP34C | -100 | -   | -    |      |
| V <sub>CE(SAT)</sub> | Collector-Emitter saturation Voltage (*) | I <sub>C</sub> = -3 A<br>I <sub>B</sub> = -300 mA       | TIP34  | -    | -   | -1   | V    |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
|                      |                                          | I <sub>C</sub> = -10 A<br>I <sub>B</sub> = -2.5 mA      | TIP34  | -    | -   | -4   | V    |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
| V <sub>BE(on)</sub>  | Base-Emitter Voltage (*)                 | I <sub>C</sub> = -3 A<br>V <sub>CE</sub> = -4 V         | TIP34  | -    | -   | -1.6 | V    |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
|                      |                                          | I <sub>C</sub> = -10 A<br>V <sub>CE</sub> = -4 V        | TIP34  | -    | -   | -3   | V    |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
| h <sub>FE</sub>      | DC Current Gain (*)                      | V <sub>CE</sub> = -4 V<br>I <sub>C</sub> = -1 A         | TIP34  | 40   | -   | -    | -    |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |
|                      |                                          | V <sub>CE</sub> = -4 V<br>I <sub>C</sub> = -3 A         | TIP34  | 20   | -   | 100  |      |
|                      |                                          |                                                         | TIP34A |      |     |      |      |
|                      |                                          |                                                         | TIP34B |      |     |      |      |
|                      |                                          |                                                         | TIP34C |      |     |      |      |

(\*) Pulse Width  $\approx 300 \mu s$ , Duty Cycle  $\angle 2.0\%$

## PNP TIP34-A-B-C

| Symbol | Ratings                        | Test Condition(s)                                                      | Min | Typ | Max | Unit |
|--------|--------------------------------|------------------------------------------------------------------------|-----|-----|-----|------|
| $f_T$  | Current Gain-Bandwidth Product | $V_{CE} = -10\text{ V}$<br>$I_C = -0.5\text{ A}$<br>$f = 1\text{ kHz}$ | 3   | -   | -   | MHz  |
|        |                                |                                                                        |     |     |     |      |
|        |                                |                                                                        |     |     |     |      |
|        |                                |                                                                        |     |     |     |      |

### MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



| DIMENSIONS (mm) |       |       |
|-----------------|-------|-------|
|                 | Min.  | Max.  |
| A               | 15.20 | 1600  |
| B               | 1.90  | 2.10  |
| C               | 4.60  | 5.00  |
| D               | 3.10  | 3.30  |
| E               |       | 9.60  |
| F               |       | 2.00  |
| G               | 0.35  | 0.55  |
| H               |       | 1.40  |
| J               | 5.35  | 5.55  |
| K               | 20.00 |       |
| L               | 19.60 | 20.20 |
| M               | 0.95  | 1.25  |
| N               |       | 2.00  |
| O               |       | 3.00  |
| P               |       | 4.00  |
| R               |       | 4.00  |
| S               |       | 1.80  |
| T               | 4.80  | 5.20  |

|         |           |
|---------|-----------|
| Pin 1 : | Base      |
| Pin 2 : | Collector |
| Pin 3 : | Emitter   |
| Case :  | Collector |

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