

TIP41  
TIP41A  
TIP41B  
TIP41C

NPN SILICON  
POWER TRANSISTOR



TO-220 CASE



www.centra-semi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR TIP41 SERIES types are NPN Epitaxial-Base Silicon Power Transistors designed for power amplifier and high speed switching applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_C=25^{\circ}\text{C}$ )

|                                                |  |
|------------------------------------------------|--|
| Collector-Base Voltage                         |  |
| Collector-Emitter Voltage                      |  |
| Emitter-Base Voltage                           |  |
| Continuous Collector Current                   |  |
| Peak Collector Current                         |  |
| Continuous Base Current                        |  |
| Power Dissipation                              |  |
| Power Dissipation ( $T_A=25^{\circ}\text{C}$ ) |  |
| Operating and Storage Junction Temperature     |  |

| SYMBOL         | TIP41 | TIP41A      | TIP41B | TIP41C | UNITS              |
|----------------|-------|-------------|--------|--------|--------------------|
| $V_{CBO}$      | 40    | 60          | 80     | 100    | V                  |
| $V_{CEO}$      | 40    | 60          | 80     | 100    | V                  |
| $V_{EBO}$      |       |             | 5.0    |        | V                  |
| $I_C$          |       | 6.0         |        |        | A                  |
| $I_{CM}$       |       | 10          |        |        | A                  |
| $I_B$          |       | 2.0         |        |        | A                  |
| $P_D$          |       | 65          |        |        | W                  |
| $P_D$          |       | 2.0         |        |        | W                  |
| $T_J, T_{stg}$ |       | -65 to +150 |        |        | $^{\circ}\text{C}$ |

**ELECTRICAL CHARACTERISTICS:** ( $T_C=25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL        | TEST CONDITIONS                                             | MIN | TYP | MAX | UNITS         |
|---------------|-------------------------------------------------------------|-----|-----|-----|---------------|
| $I_{CEO}$     | $V_{CE}=30\text{V}$ (TIP41, TIP41A)                         |     |     | 0.7 | mA            |
| $I_{CEO}$     | $V_{CE}=60\text{V}$ (TIP41B, TIP41C)                        |     |     | 0.7 | mA            |
| $I_{CES}$     | $V_{CE}=\text{Rated } V_{CEO}$                              |     |     | 0.4 | mA            |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$                                        |     |     | 1.0 | mA            |
| $BV_{CEO}$    | $I_C=30\text{mA}$ (TIP41)                                   | 40  |     |     | V             |
| $BV_{CEO}$    | $I_C=30\text{mA}$ (TIP41A)                                  | 60  |     |     | V             |
| $BV_{CEO}$    | $I_C=30\text{mA}$ (TIP41B)                                  | 80  |     |     | V             |
| $BV_{CEO}$    | $I_C=30\text{mA}$ (TIP41C)                                  | 100 |     |     | V             |
| $V_{CE(SAT)}$ | $I_C=6.0\text{A}, I_B=0.6\text{A}$                          |     |     | 1.5 | V             |
| $V_{BE(ON)}$  | $V_{CE}=4.0\text{V}, I_C=6.0\text{A}$                       |     |     | 2.0 | V             |
| $h_{FE}$      | $V_{CE}=4.0\text{V}, I_C=0.3\text{A}$                       | 30  |     |     |               |
| $h_{FE}$      | $V_{CE}=4.0\text{V}, I_C=3.0\text{A}$                       | 15  |     | 75  |               |
| $h_{fe}$      | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{kHz}$       | 20  |     |     |               |
| $f_T$         | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$       | 3.0 |     |     | MHz           |
| $t_{on}$      | $I_C=6.0\text{A}, I_{B1}=I_{B2}=0.6\text{A}, R_L=5.0\Omega$ |     | 0.6 |     | $\mu\text{s}$ |
| $t_{off}$     | $I_C=6.0\text{A}, I_{B1}=I_{B2}=0.6\text{A}, R_L=5.0\Omega$ |     | 1.0 |     | $\mu\text{s}$ |

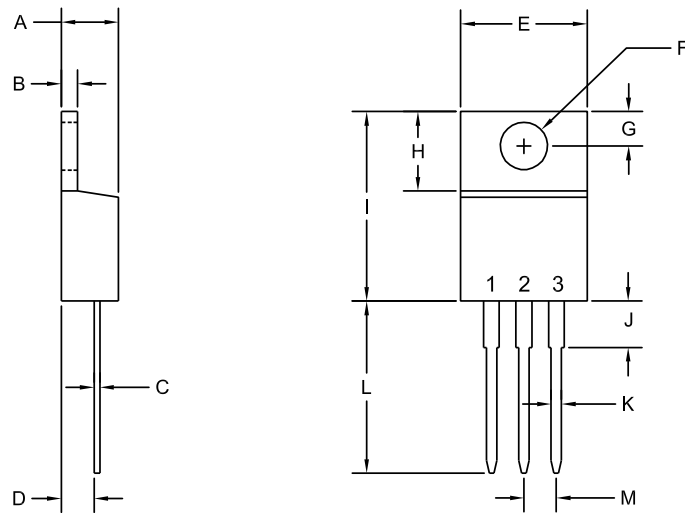
R1 (13-December 2010)

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TO-220 CASE - MECHANICAL OUTLINE



R2

LEAD CODE:

- 1) Base
- 2) Collector
- 3) Emitter
- Tab) Collector

MARKING:

FULL PART NUMBER

| SYMBOL  | DIMENSIONS |       |             |       |
|---------|------------|-------|-------------|-------|
|         | INCHES     |       | MILLIMETERS |       |
|         | MIN        | MAX   | MIN         | MAX   |
| A       | 0.170      | 0.190 | 4.31        | 4.82  |
| B       | 0.045      | 0.055 | 1.15        | 1.39  |
| C       | 0.013      | 0.026 | 0.33        | 0.65  |
| D       | 0.083      | 0.107 | 2.10        | 2.72  |
| E       | 0.394      | 0.417 | 10.01       | 10.60 |
| F (DIA) | 0.140      | 0.157 | 3.55        | 4.00  |
| G       | 0.100      | 0.118 | 2.54        | 3.00  |
| H       | 0.230      | 0.270 | 5.85        | 6.85  |
| I       | 0.560      | 0.625 | 14.23       | 15.87 |
| J       | -          | 0.250 | -           | 6.35  |
| K       | 0.025      | 0.038 | 0.64        | 0.96  |
| L       | 0.500      | 0.579 | 12.70       | 14.70 |
| M       | 0.090      | 0.110 | 2.29        | 2.79  |

TO-220 (REV: R2)

R1 (13-December 2010)