

TIP30
TIP30A
TIP30B
TIP30C

SILICON
PNP POWER TRANSISTORS



TO-220 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR TIP30 series devices are silicon PNP epitaxial-base power transistors designed for power amplifier and high speed switching applications.

MARKING: FULL PART NUMBER

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

| | SYMBOL | TIP30 | TIP30A | TIP30B | TIP30C | UNITS |
|--|----------------|-------|--------|-------------|--------|------------------|
| Collector-Base Voltage | V_{CBO} | 40 | 60 | 80 | 100 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | 60 | 80 | 100 | V |
| Emitter-Base Voltage | V_{EBO} | | | 5.0 | | V |
| Continuous Collector Current | I_C | | | 1.0 | | A |
| Peak Collector Current | I_{CM} | | | 3.0 | | A |
| Continuous Base Current | I_B | | | 0.4 | | A |
| Power Dissipation | P_D | | | 30 | | W |
| Power Dissipation ($T_A=25^\circ\text{C}$) | P_D | | | 2.0 | | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | | | -65 to +150 | | $^\circ\text{C}$ |

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

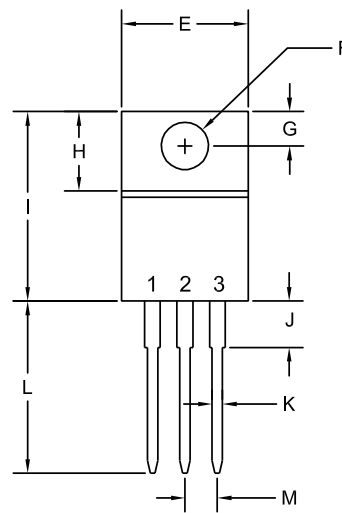
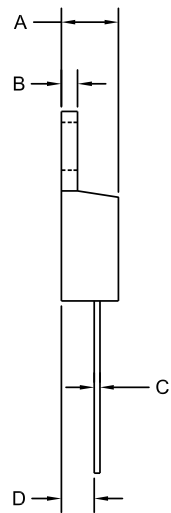
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|--|-----|-----|-----|---------------|
| I_{CEO} | $V_{CE}=30\text{V}$ (TIP30, TIP30A) | | | 0.3 | mA |
| I_{CEO} | $V_{CE}=60\text{V}$ (TIP30B, TIP30C) | | | 0.3 | mA |
| I_{CES} | $V_{CE}=\text{Rated } V_{CEO}$ | | | 0.2 | mA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | | 1.0 | mA |
| BV_{CEO} | $I_C=30\text{mA}$ (TIP30) | 40 | | | V |
| BV_{CEO} | $I_C=30\text{mA}$ (TIP30A) | 60 | | | V |
| BV_{CEO} | $I_C=30\text{mA}$ (TIP30B) | 80 | | | V |
| BV_{CEO} | $I_C=30\text{mA}$ (TIP30C) | 100 | | | V |
| $V_{CE(SAT)}$ | $I_C=1.0\text{A}, I_B=125\text{mA}$ | | | 0.7 | V |
| $V_{BE(ON)}$ | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}$ | | | 1.3 | V |
| h_{FE} | $V_{CE}=4.0\text{V}, I_C=0.2\text{A}$ | 40 | | | |
| h_{FE} | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}$ | 15 | | 75 | |
| h_{fe} | $V_{CE}=10\text{V}, I_C=0.2\text{A}, f=1.0\text{kHz}$ | 20 | | | |
| f_T | $V_{CE}=10\text{V}, I_C=0.2\text{A}, f=1.0\text{MHz}$ | 3.0 | | | MHz |
| t_{on} | $I_C=1.0\text{A}, I_{B1}=I_{B2}=0.1\text{A}, R_L=30\Omega$ | | 0.3 | | μs |
| t_{off} | $I_C=1.0\text{A}, I_{B1}=I_{B2}=0.1\text{A}, R_L=30\Omega$ | | 1.0 | | μs |

R1 (12-March 2014)

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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 (12-March 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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