

D40D1 D40D5 D40D11
D40D2 D40D7 D40D13
D40D3 D40D8 D40D14
D40D4 D40D10

**NPN SILICON
POWER TRANSISTOR**



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR D40D series types are NPN silicon power transistors designed for amplifier and switching applications. The PNP complementary types are the D41D series.

MARKING: FULL PART NUMBER



TO-202 CASE

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

| | SYMBOL | D40D1 | | | D40D10 | | UNITS |
|--|----------------|-------|-------|-------------|--------|--------|--------------------|
| | | D40D2 | D40D4 | D40D7 | D40D11 | D40D13 | |
| Collector-Emitter Voltage | V_{CES} | 45 | 60 | 75 | 90 | | V |
| Collector-Emitter Voltage | V_{CEO} | 30 | 45 | 60 | 75 | | V |
| Emitter-Base Voltage | V_{EBO} | | | 5.0 | | | V |
| Continuous Collector Current | I_C | | | 1.0 | | | A |
| Peak Collector Current | I_{CM} | | | 1.5 | | | A |
| Power Dissipation | P_D | | | 6.25 | | | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | | | -65 to +150 | | | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JC} | | | 20 | | | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|--|-----|-----|-------|
| I_{CES} | $V_{CE}=\text{Rated } V_{CES}$ | | 100 | nA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 100 | nA |
| BV_{CEO} | $I_C=10\text{mA}$ (D40D1, 2, 3) | 30 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (D40D4, 5) | 45 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (D40D7, 8) | 60 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (D40D10, 11, 13, 14) | 75 | | V |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ (D40D1, 2, 4, 5) | | 0.5 | V |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ (D40D7, 8, 10, 11, 13, 14) | | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | 1.5 | V |

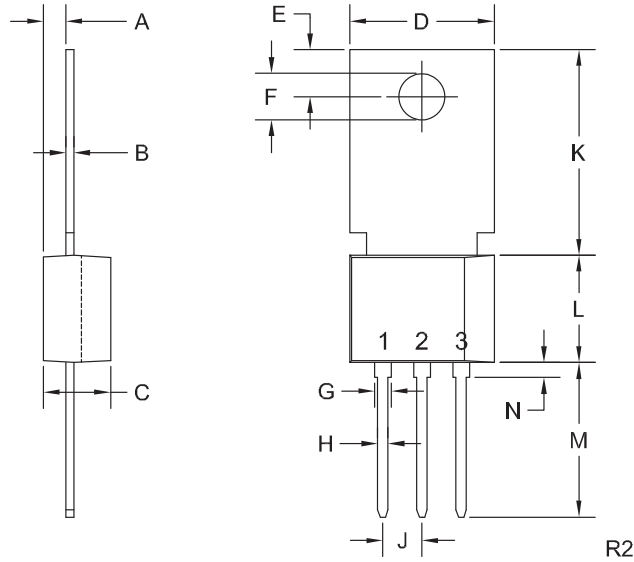
| | | D40D1 | | D40D4 | | D40D7 | | D40D10 | | D40D5 | | D40D8 | | D40D11 | | D40D13 | | D40D14 | |
|----------|--|-------|-----|-------|-----|-------|-----|--------|-----|-------|-----|-------|-----|--------|-----|--------|-----|--------|-----|
| | | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=100\text{mA}$ | 50 | 150 | 120 | 360 | 290 | - | 120 | 360 | | | | | | | | | | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ (Except D40D13, 14) | 10 | - | 20 | - | 10 | - | 10 | - | | | | | | | | | | |

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TO-202 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Emitter
 - 2) Base
 - 3) Collector
- Tab is common to pin 3

MARKING:

FULL PART NUMBER

| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.055 | 0.071 | 1.40 | 1.80 |
| B | 0.016 | 0.024 | 0.40 | 0.60 |
| C | 0.173 | 0.181 | 4.40 | 4.60 |
| D | 0.374 | 0.413 | 9.50 | 10.5 |
| E | 0.118 | 0.154 | 3.00 | 3.90 |
| F (DIA) | 0.124 | 0.150 | 3.15 | 3.80 |
| G | 0.035 | 0.055 | 0.90 | 1.40 |
| H | 0.023 | 0.031 | 0.59 | 0.80 |
| J | 0.094 | 0.106 | 2.39 | 2.69 |
| K | 0.459 | 0.559 | 11.66 | 14.21 |
| L | 0.280 | 0.346 | 7.12 | 8.80 |
| M | 0.406 | 0.531 | 10.3 | 13.5 |
| N | 0.024 | 0.059 | 0.60 | 1.50 |

TO-202 (REV: R2)

R1 (23-January 2012)