**CJD13003**

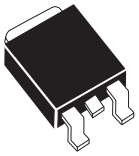
**NPN SILICON**
**POWER TRANSISTOR**

Central™
Semiconductor Corp.

**DESCRIPTION:**
The CENTRAL SEMICONDUCTOR CJD13003 type is an NPN Silicon Power Transistor manufactured in a surface mount package designed for high voltage, high speed power switching inductive applications.

**MARKING CODE: FULL PART NUMBER**

DPAK POWER!



**DPAK TRANSISTOR CASE**

**MAXIMUM RATINGS:** ($T_C$=25°C unless otherwise noted)

| | SYMBOL | | UNITS |
|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEV}$ | 700 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 400 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 9.0 | V |
| Continuous Collector Current | $I_C$ | 1.5 | A |
| Peak Collector Current | $I_{CM}$ | 3.0 | A |
| Continuous Base Current | $I_B$ | 750 | mA |
| Peak Base Current | $I_{BM}$ | 1.5 | A |
| Continuous Emitter Current | $I_E$ | 2.25 | A |
| Peak Emitter Current | $I_{EM}$ | 4.5 | A |
| Power Dissipation | $P_D$ | 15 | W |
| Power Dissipation ($T_A$=25°C) | $P_D$ | 1.56 | W |
| Operating and Storage Junction Temperature | $T_J$,$T_{stg}$ | -65 to +150 | °C |
| Thermal Resistance | $\Theta_{JC}$ | 8.33 | °C/W |
| Thermal Resistance | $\Theta_{JA}$ | 80.1 | °C/W |

**ELECTRICAL CHARACTERISTICS:** ($T_C$=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|
| $I_{CEV}$ | $V_{CE}$=700V, $V_{BE(off)}$=1.5V | | | 100 | μA |
| $I_{CEV}$ | $V_{CE}$=700V, $V_{BE(off)}$=1.5V, $T_C$=100°C | | | 2.0 | mA |
| $I_{EBO}$ | $V_{EB}$=9.0V | | | 1.0 | mA |
| $BV_{CEO}$ | $I_C$=10mA | 400 | | | V |
| $V_{CE(SAT)}$ | $I_C$=500mA, $I_B$=100mA | | | 0.5 | V |
| $V_{CE(SAT)}$ | $I_C$=1.0A, $I_B$=250mA | | | 1.0 | V |
| $V_{CE(SAT)}$ | $I_C$=1.5A, $I_B$=500mA | | | 3.0 | V |
| $V_{CE(SAT)}$ | $I_C$=1.0A, $I_B$=250mA, $T_C$=100°C | | | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C$=500mA, $I_B$=100mA | | | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C$=1.0A, $I_B$=250mA | | | 1.2 | V |
| $V_{BE(SAT)}$ | $I_C$=1.0A, $I_B$=250mA, $T_C$=100°C | | | 1.1 | V |
| $h_{FE}$ | $V_{CE}$=2.0V, $I_C$=500mA | 8.0 | | 40 | |
| $h_{FE}$ | $V_{CE}$=2.0V, $I_C$=1.0A | 5.0 | | 25 | |
| $f_T$ | $V_{CE}$=10V, $I_C$=100mA, f=1.0MHz | 4.0 | | | MHz |
| $C_{ob}$ | $V_{CB}$=10V, $I_E$=0, f=0.1MHz | | 20 | | pF |

(1) tp=25μs, Duty Cycle≤1%

R1 (26-August 2002)

**Central™**
**Semiconductor Corp.**

**CJD13003**

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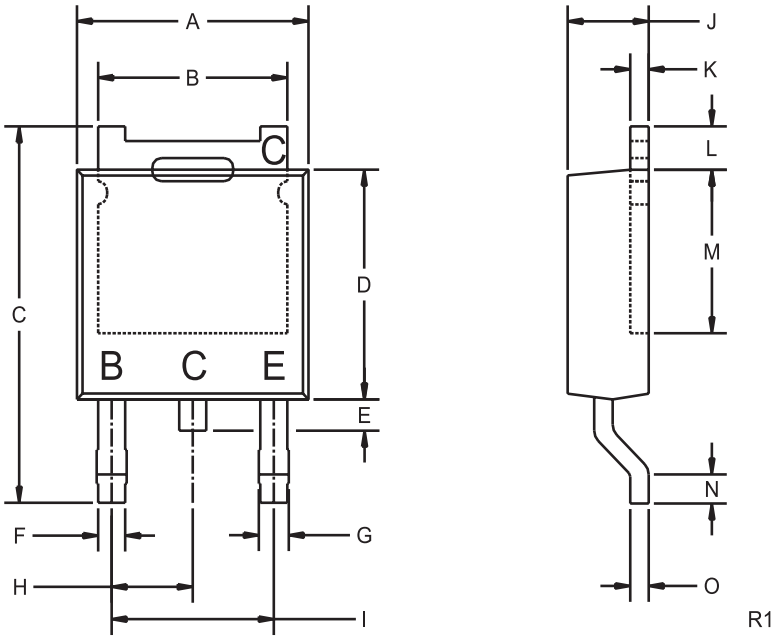
**POWER TRANSISTOR**

**ELECTRICAL CHARACTERISTICS:** ($T_C$=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|
| $t_d$ | $V_{CC}$=125V, $I_C$=1.0A, $I_{B1}$=$I_{B2}$=200mA (1) | | | 0.1 | μs |
| $t_r$ | $V_{CC}$=125V, $I_C$=1.0A, $I_{B1}$=$I_{B2}$=200mA (1) | | | 1.0 | μs |
| $t_s$ | $V_{CC}$=125V, $I_C$=1.0A, $I_{B1}$=$I_{B2}$=200mA (1) | | | 4.0 | μs |
| $t_f$ | $V_{CC}$=125V, $I_C$=1.0A, $I_{B1}$=$I_{B2}$=200mA (1) | | | 0.7 | μs |

(1) tp=25μs, Duty Cycle≤1%

**DPAK TRANSISTOR CASE - MECHANICAL OUTLINE**




**LEAD CODE:**
B) BASE
C) COLLECTOR
E) EMITTER
C) COLLECTOR

**MARKING CODE:**

**FULL PART NUMBER**

| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | MIN | MAX | MIN | MAX |
| A | 0.250 | 0.265 | 6.35 | 6.73 |
| B | 0.205 | 0.215 | 5.21 | 5.46 |
| C | 0.374 | 0.409 | 9.50 | 10.40 |
| D | 0.235 | 0.245 | 5.97 | 6.22 |
| E | 0.025 | 0.040 | 0.64 | 1.02 |
| F | 0.025 | 0.035 | 0.64 | 0.88 |
| G | 0.030 | 0.045 | 0.76 | 1.14 |
| H | 0.090 | | 2.28 | |
| I | 0.180 | | 4.57 | |
| J | 0.086 | 0.094 | 2.19 | 2.38 |
| K | 0.018 | 0.023 | 0.46 | 0.58 |
| L | 0.040 | 0.050 | 1.02 | 1.27 |
| M | 0.170 | - | 4.32 | - |
| N | 0.020 | - | 0.51 | - |
| O | 0.018 | 0.023 | 0.46 | 0.58 |

DPAK TRANSISTOR (REV: R1)

R1 (26-August 2002)