



CJD13003

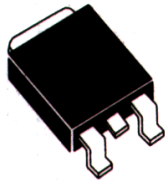
NPN SILICON
POWER TRANSISTOR

CentralTM
Semiconductor Corp.

DESCRIPTION:

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

DPAK POWER!TM



DPAK CASE

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

| | 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 ($T_C=25^\circ\text{C}$) | P_D | 15 | W |
| Power Dissipation ($T_A=25^\circ\text{C}$) | P_D | 1.56 | W |
| Operating and Storage | | | |
| Junction Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JC} | 8.33 | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JA} | 80.1 | $^\circ\text{C/W}$ |

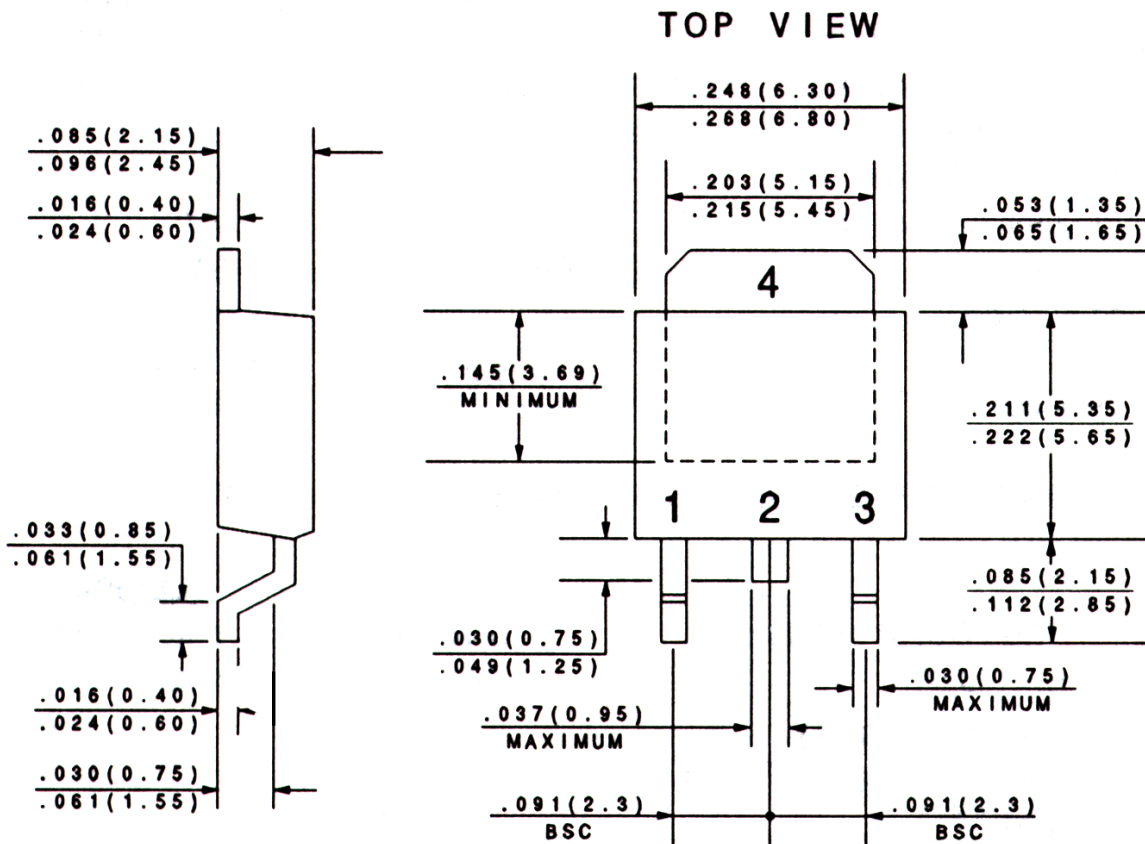
ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|---|------------|------------|------------|---------------|
| I_{CEV} | $V_{CE}=700\text{V}, V_{BE(\text{off})}=1.5\text{V}$ | | | 100 | μA |
| I_{CEV} | $V_{CE}=700\text{V}, V_{BE(\text{off})}=1.5\text{V}, T_C=100^\circ\text{C}$ | | | 2.0 | mA |
| I_{EBO} | $V_{EB}=9.0\text{V}$ | | | 1.0 | mA |
| BV_{CEO} | $I_C=10\text{mA}$ | 400 | | | V |
| $V_{CE(\text{SAT})}$ | $I_C=500\text{mA}, I_B=100\text{mA}$ | | | 0.5 | V |
| $V_{CE(\text{SAT})}$ | $I_C=1.0\text{A}, I_B=250\text{mA}$ | | | 1.0 | V |
| $V_{CE(\text{SAT})}$ | $I_C=1.5\text{A}, I_B=500\text{mA}$ | | | 3.0 | V |
| $V_{CE(\text{SAT})}$ | $I_C=1.0\text{A}, I_B=250\text{mA}, T_C=100^\circ\text{C}$ | | | 1.0 | V |

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|--|-----|-----|-----|---------|
| $V_{BE(SAT)}$ | $I_C=500mA, I_B=100mA$ | | | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C=1.0A, I_B=250mA$ | | | 1.2 | V |
| $V_{BE(SAT)}$ | $I_C=1.0A, I_B=250mA, T_C=100^\circ C$ | | | 1.1 | V |
| V_{CE} | $V_{CE}=2.0V, I_C=500mA$ | 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 |
| 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) $t_p=25\mu s$, Duty Cycle $\leq 1\%$

All dimensions in inches (mm).



LEAD CODE:

- 1) BASE
- 2) COLLECTOR
- 3) EMITTER
- 4) COLLECTOR



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