

CJD13003

**SURFACE MOUNT SILICON
NPN POWER TRANSISTOR**



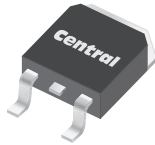
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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD13003 is a silicon NPN power transistor manufactured in a surface mount package and designed for high voltage, high speed power switching inductive applications.

MARKING: FULL PART NUMBER

DPAK
POWER!



DPAK CASE

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$ 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 ($T_A=25^\circ\text{C}$)	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}	$V_{CE}=700\text{V}, V_{BE(off)}=1.5\text{V}$			100	μA
I_{CEV}	$V_{CE}=700\text{V}, V_{BE(off)}=1.5\text{V}, T_C=100^\circ\text{C}$			2.0	mA
I_{EBO}	$V_{EB}=9.0\text{V}$			1.0	mA
BV_{CEO}	$I_C=10\text{mA}$	400			V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=100\text{mA}$			0.5	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=250\text{mA}$			1.0	V
$V_{CE(SAT)}$	$I_C=1.5\text{A}, I_B=500\text{mA}$			3.0	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=250\text{mA}, T_C=100^\circ\text{C}$			1.0	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=100\text{mA}$			1.0	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=250\text{mA}$			1.2	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=250\text{mA}, T_C=100^\circ\text{C}$			1.1	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	8.0		40	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	5.0		25	
f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=1.0\text{MHz}$	4.0			MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$		20		pF

R3 (21-January 2013)

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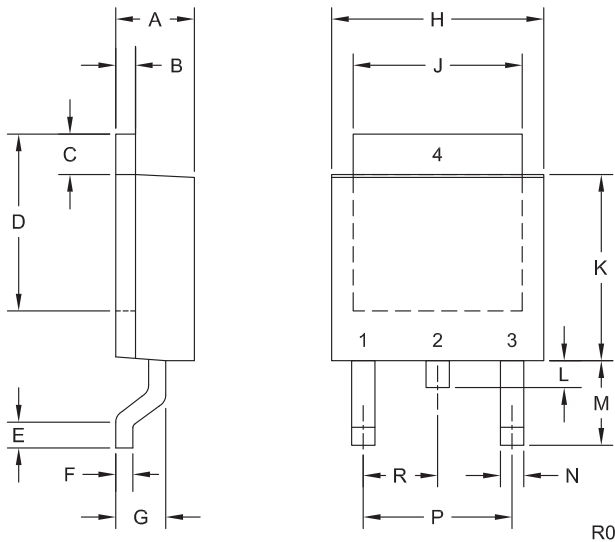


ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^\circ\text{C}$ unless otherwise noted)

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

Notes (1) $t_p=25\mu\text{s}$, Duty Cycles \leq 1%

DPAK CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.032	0.40	0.81
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.018	0.024	0.45	0.60
G	0.051	0.071	1.30	1.80
H	0.248	0.268	6.30	6.81
J	0.197	0.217	5.00	5.50
K	0.209	0.245	5.30	6.22
L	0.025	0.040	0.64	1.02
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	
R	0.090		2.30	

DPAK (REV: R0)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R3 (21-January 2013)

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- Application and design sample kits
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