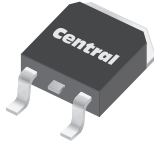


CJD13003

**SURFACE MOUNT SILICON
NPN POWER TRANSISTOR**

DPAK
POWER!



DPAK CASE



www.centrasemi.com

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

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

CJD13003

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NPN POWER TRANSISTOR**

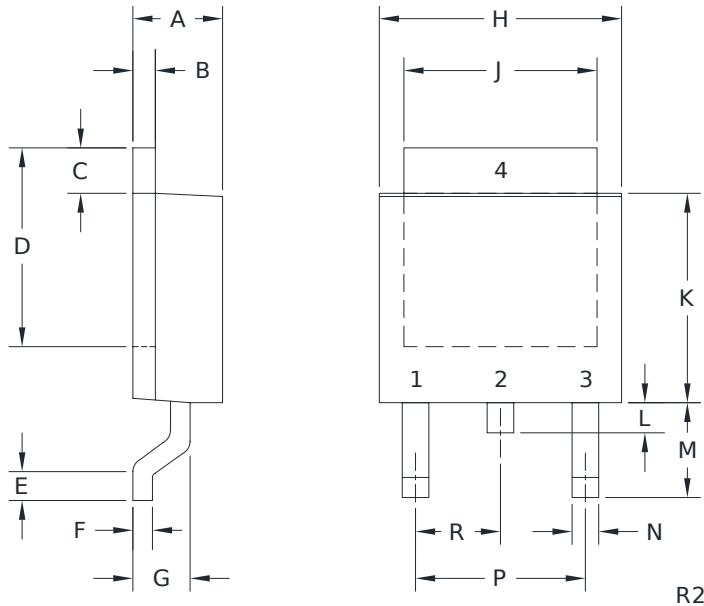


ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

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 Cycle $\leq 1\%$

DPAK CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.035	0.40	0.89
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.061		1.55	
H	0.248	0.268	6.30	6.81
J	0.195	0.217	4.95	5.50
K	0.209	0.245	5.30	6.22
L	0.033		0.83	
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:R2)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R4 (22-August 2023)

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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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centalsemi.com/terms

Product End of Life Notification

PDN ID:	PDN01180 Rev:001
Notification Date:	10/11/21
Last Buy Date:	N/A
Last Shipment Date	N/A

Summary: The following transistors manufactured in the DPAK case are discontinued and now classified as End of Life (EOL). Revision 001, dated October 8, 2021, issued to add CJD13003 and CJD41C which were previously excluded in error.

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

*** All Plating types (PBFREE, TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
CJD112 TR13	N/A
CJD117 TR13	N/A
CJD122 BK	N/A
CJD122 TR13	N/A
CJD127 TR13	N/A
CJD13003 BK	N/A
CJD13003 TR13	N/A
CJD200 TR13	N/A
CJD2955 TR13	N/A
CJD3055 TR13	N/A
CJD31C TR13	N/A
CJD32C TR13	N/A
CJD340 TR13	N/A
CJD350 TR13	N/A
CJD41C BK	N/A
CJD41C TR13	N/A
CJD42C TR13	N/A
CJD44H11 TR13	N/A
CJD45H11 TR13	N/A
CJD47 TR13	N/A
CJD50 BK	N/A
CJD50 TR13	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centrasemi.com.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.