

CJD13003

**SURFACE MOUNT SILICON  
NPN POWER TRANSISTOR**



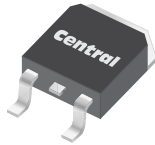
[www.centrasemi.com](http://www.centrasemi.com)

**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**

**DPAK**  
**POWER!**



**DPAK CASE**

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

|  | <b>SYMBOL</b>  |             | <b>UNITS</b>       |
|--|----------------|-------------|--------------------|
| 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                           | $\theta_{JC}$  | 8.33        | $^\circ\text{C/W}$ |
| Thermal Resistance                           | $\theta_{JA}$  | 80.1        | $^\circ\text{C/W}$ |

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

| <b>SYMBOL</b> | <b>TEST CONDITIONS</b>   | <b>MIN</b> | <b>TYP</b> | <b>MAX</b> | <b>UNITS</b>  |
|---------------|--|------------|------------|------------|---------------|
| $I_{CEV}$     | $V_{CE}=700\text{V}, V_{BE(off)}=1.5\text{V}$                        |            |            | 100        | $\mu\text{A}$ |
| $I_{CEV}$     | $V_{CE}=700\text{V}, V_{BE(off)}=1.5\text{V}, T_C=100^\circ\text{C}$ |            |            | 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)

CJD13003

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NPN POWER TRANSISTOR**

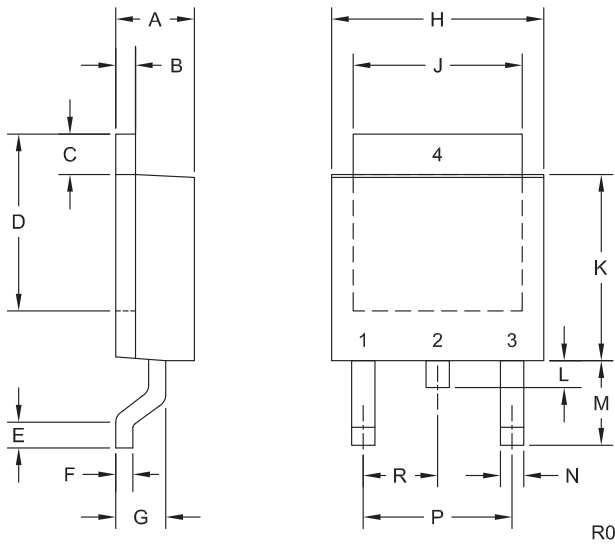


**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

| 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 | $\mu\text{s}$ |
| $t_r$ (Note 1) | $V_{CC}=125\text{V}$ , $I_C=1.0\text{A}$ , $I_{B1}=I_{B2}=200\text{mA}$ | 1.0 | $\mu\text{s}$ |
| $t_s$ (Note 1) | $V_{CC}=125\text{V}$ , $I_C=1.0\text{A}$ , $I_{B1}=I_{B2}=200\text{mA}$ | 4.0 | $\mu\text{s}$ |
| $t_f$ (Note 1) | $V_{CC}=125\text{V}$ , $I_C=1.0\text{A}$ , $I_{B1}=I_{B2}=200\text{mA}$ | 0.7 | $\mu\text{s}$ |

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

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> 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

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### 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).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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http://www.centrasemi.com

# 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](mailto: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.