

CXT5401E

**ENHANCED SPECIFICATION  
SURFACE MOUNT  
PNP SILICON TRANSISTOR**



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CXT5401E is a PNP Silicon Transistor, packaged in an SOT-89 case, designed for general purpose amplifier applications requiring high breakdown voltage.

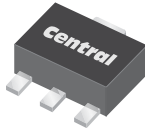
**MARKING: FULL PART NUMBER**

**FEATURES:**

- High Collector Breakdown Voltage: 250V
- Low Leakage Current: 50nA MAX
- Low Saturation Voltage: 150mV MAX @ 50mA
- Complementary Device: CXT5551E
- SOT-89 Surface Mount Package



**SOT-89 CASE**



**APPLICATIONS:**

- General purpose switching and amplification
- Telephone applications

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

|  |
|--|
| ◆ <b>Collector-Base Voltage</b>            |
| ◆ <b>Collector-Emitter Voltage</b>         |
| ◆ <b>Emitter-Base Voltage</b>              |
| Continuous Collector Current               |
| Power Dissipation                          |
| Operating and Storage Junction Temperature |
| Thermal Resistance                         |

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $V_{CBO}$      | 250         | V                  |
| $V_{CEO}$      | 220         | V                  |
| $V_{EBO}$      | 7.0         | V                  |
| $I_C$          | 600         | mA                 |
| $P_D$          | 1.2         | W                  |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$   |
| $\theta_{JA}$  | 104         | $^\circ\text{C/W}$ |

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

| SYMBOL          | TEST CONDITIONS                             | MIN | MAX  | UNITS         |
|-----------------|---|-----|------|---------------|
| $I_{CBO}$       | $V_{CB}=120\text{V}$                        |     | 50   | nA            |
| $I_{CBO}$       | $V_{CB}=120\text{V}, T_A=100^\circ\text{C}$ |     | 50   | $\mu\text{A}$ |
| $I_{EBO}$       | $V_{EB}=3.0\text{V}$                        |     | 50   | nA            |
| ◆ $BV_{CBO}$    | $I_C=100\mu\text{A}$                        | 250 |      | V             |
| ◆ $BV_{CEO}$    | $I_C=1.0\text{mA}$                          | 220 |      | V             |
| ◆ $BV_{EBO}$    | $I_E=10\mu\text{A}$                         | 7.0 |      | V             |
| ◆ $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$         |     | 100  | mV            |
| ◆ $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$         |     | 150  | mV            |
| $V_{BE(SAT)}$   | $I_C=10\text{mA}, I_B=1.0\text{mA}$         |     | 1.00 | V             |
| $V_{BE(SAT)}$   | $I_C=50\text{mA}, I_B=5.0\text{mA}$         |     | 1.00 | V             |

◆ Enhanced specification

R1 (23-February 2010)

CXT5401E

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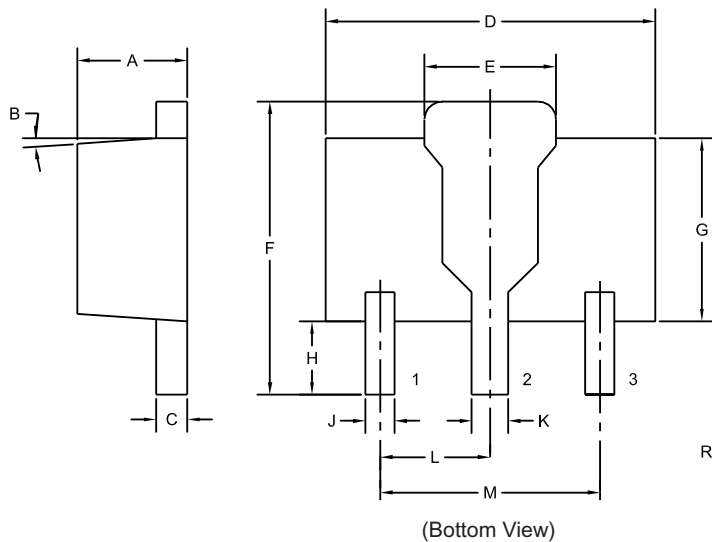


**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| SYMBOL     | TEST CONDITIONS   | MIN | MAX | UNITS |
|------------|---|-----|-----|-------|
| ◆ $h_{FE}$ | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$  | 100 |     |       |
| ◆ $h_{FE}$ | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$   | 100 | 300 |       |
| ◆ $h_{FE}$ | $V_{CE}=5.0\text{V}, I_C=50\text{mA}$   | 75  |     |       |
| ◆ $h_{FE}$ | $V_{CE}=10\text{V}, I_C=150\text{mA}$   | 25  |     |       |
| $f_T$      | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$   | 100 | 300 | MHz   |
| $C_{ob}$   | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$   |     | 6.0 | pF    |
| $h_{fe}$   | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$  | 40  | 200 |       |
| NF         | $V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=10\Omega,$<br>$f=10\text{Hz to } 15.7\text{kHz}$ |     | 8.0 | dB    |

◆ Enhanced specification

**SOT-89 CASE - MECHANICAL OUTLINE**



| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.055  | 0.067 | 1.40        | 1.70 |
| B      | 4°     |       | 4°          |      |
| C      | 0.014  | 0.018 | 0.35        | 0.46 |
| D      | 0.173  | 0.185 | 4.40        | 4.70 |
| E      | 0.064  | 0.074 | 1.62        | 1.87 |
| F      | 0.146  | 0.177 | 3.70        | 4.50 |
| G      | 0.090  | 0.106 | 2.29        | 2.70 |
| H      | 0.028  | 0.051 | 0.70        | 1.30 |
| J      | 0.014  | 0.019 | 0.36        | 0.48 |
| K      | 0.017  | 0.023 | 0.44        | 0.58 |
| L      | 0.059  |       | 1.50        |      |
| M      | 0.118  |       | 3.00        |      |

SOT-89 (REV: R4)

**LEAD CODE:**

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

**MARKING:**

**FULL PART NUMBER**

R1 (23-February 2010)

## 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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### CONTACT US

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# Product End of Life Notification

|                           |                  |
|---------------------------|------------------|
| <b>PDN ID:</b>            | PDN01024 Rev:001 |
| <b>Notification Date:</b> | 10/07/16         |
| <b>Last Buy Date:</b>     | 11/11/16         |
| <b>Last Shipment Date</b> | 5/11/17          |

Summary: The following high voltage NPN and PNP enhanced specification transistors were discontinued on May 11, 2016, and are currently classified as End of Life (EOL). Rev:001 of PDN#01024, October 7, 2016, is being issued to remove part #s CZT5551E BK and CZT5551E TR from the PDN to address market demand. CZT5551E BK and CZT5551E TR are now active devices.

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by various 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 Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

| <u>Central Part Number</u> | <u>Replacement</u> |
|----------------------------|--------------------|
| CMPT5401E BK               | CMPT5401 BK        |
| CMPT5401E TR               | CMPT5401 TR        |
| CMPT5551E BK               | CMPT5551 BK H      |
| CMPT5551E TR               | CMPT5551 TR H      |
| CMUT5401E BK               | CMUT5401 BK        |
| CMUT5401E TR               | CMUT5401 TR        |
| CMUT5551E BK               | CMUT5551 BK        |
| CMUT5551E TR               | CMUT5551 TR        |
| CXT5401E BK                | CXT5401 BK H       |
| CXT5401E TR                | CXT5401 TR H       |
| CXT5551E BK                | CXT5551 BK         |
| CXT5551E TR                | CXT5551 TR         |
| CZT5401E BK                | CZT5401 BK H       |
| CZT5401E TR                | CZT5401 TR H       |

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@centralsemi.com](mailto:engineering@centralsemi.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.