

CMPT6517 NPN  
CMPT6520 PNP

**SURFACE MOUNT  
COMPLEMENTARY HIGH VOLTAGE  
SILICON TRANSISTORS**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT6517 and CMPT6520 are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage driver and amplifier applications.

**MARKING CODES: CMPT6517: C1Z  
CMPT6520: C2Z**

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

**SYMBOL**

$V_{CBO}$  350  
 $V_{CEO}$  350  
 $V_{EBO}$  5.0  
 $I_C$  500  
 $I_B$  250  
 $P_D$  350  
 $T_J, T_{stg}$  -65 to +150  
 $\Theta_{JA}$  357

**UNITS**

V  
V  
V  
mA  
mA  
mW  
 $^{\circ}\text{C}$   
 $^{\circ}\text{C/W}$

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

| SYMBOL        | TEST CONDITIONS                       | MIN | MAX  | UNITS |
|---------------|---------------------------------------|-----|------|-------|
| $I_{CBO}$     | $V_{CB}=250\text{V}$                  |     | 50   | nA    |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$ (CMPT6517)       |     | 50   | nA    |
| $I_{EBO}$     | $V_{EB}=4.0\text{V}$ (CMPT6520)       |     | 50   | nA    |
| $BV_{CBO}$    | $I_C=100\mu\text{A}$                  | 350 |      | V     |
| $BV_{CEO}$    | $I_C=1.0\text{mA}$                    | 350 |      | V     |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$ (CMPT6517)        | 6.0 |      | V     |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$ (CMPT6520)        | 5.0 |      | V     |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$   |     | 0.30 | V     |
| $V_{CE(SAT)}$ | $I_C=20\text{mA}, I_B=2.0\text{mA}$   |     | 0.35 | V     |
| $V_{CE(SAT)}$ | $I_C=30\text{mA}, I_B=3.0\text{mA}$   |     | 0.50 | V     |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$   |     | 1.0  | V     |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$   |     | 0.75 | V     |
| $V_{BE(SAT)}$ | $I_C=20\text{mA}, I_B=2.0\text{mA}$   |     | 0.85 | V     |
| $V_{BE(SAT)}$ | $I_C=30\text{mA}, I_B=3.0\text{mA}$   |     | 0.90 | V     |
| $V_{BE(ON)}$  | $I_C=10\text{V}, I_C=100\text{mA}$    |     | 2.0  | V     |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}$ | 20  |      |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=10\text{mA}$  | 30  |      |       |

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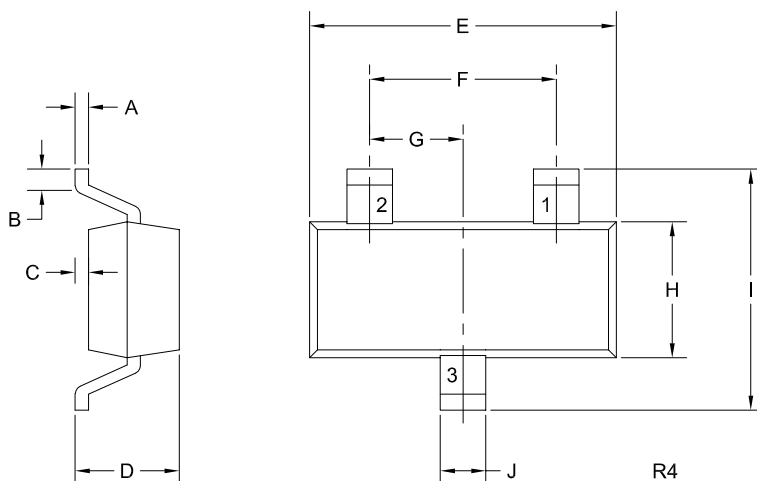
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL   | TEST CONDITIONS                                               | MIN | MAX | UNITS |
|----------|---------------------------------------------------------------|-----|-----|-------|
| $h_{FE}$ | $V_{CE}=10\text{V}$ , $I_C=30\text{mA}$                       | 30  | 200 |       |
| $h_{FE}$ | $V_{CE}=10\text{V}$ , $I_C=50\text{mA}$                       | 20  | 200 |       |
| $h_{FE}$ | $V_{CE}=10\text{V}$ , $I_C=100\text{mA}$                      | 15  |     |       |
| $f_T$    | $V_{CE}=20\text{V}$ , $I_C=10\text{mA}$ , $f=20\text{MHz}$    | 40  | 200 | MHz   |
| $C_{cb}$ | $V_{CE}=20\text{V}$ , $I_C=0$ , $f=1.0\text{MHz}$             |     | 6.0 | pF    |
| $C_{eb}$ | $V_{EB}=0.5\text{V}$ , $I_E=0$ , $f=1.0\text{MHz}$ (CMPT6517) |     | 95  | pF    |
| $C_{eb}$ | $V_{EB}=0.5\text{V}$ , $I_E=0$ , $f=1.0\text{MHz}$ (CMPT6520) |     | 100 | pF    |

**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODES:**

**CMPT6517: C1Z**

**CMPT6520: C2Z**

| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.003      | 0.007 | 0.08        | 0.18 |
| B      | 0.006      | -     | 0.15        | -    |
| C      | -          | 0.005 | -           | 0.13 |
| D      | 0.035      | 0.044 | 0.89        | 1.12 |
| E      | 0.110      | 0.120 | 2.80        | 3.05 |
| F      | 0.075      |       | 1.90        |      |
| G      | 0.037      |       | 0.95        |      |
| H      | 0.047      | 0.055 | 1.19        | 1.40 |
| I      | 0.083      | 0.104 | 2.10        | 2.64 |
| J      | 0.014      | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R4)

R6 (18-March 2022)

## 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

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