

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com

|                |                |
|----------------|----------------|
| <b>NPN</b>     | <b>PNP</b>     |
| <b>MPS6512</b> | <b>MPS6516</b> |
| <b>MPS6513</b> | <b>MPS6517</b> |
| <b>MPS6514</b> | <b>MPS6518</b> |
| <b>MPS6515</b> | <b>MPS6519</b> |

**COMPLEMENTARY  
SILICON TRANSISTORS**

JEDEC TO-92 CASE

## DESCRIPTION

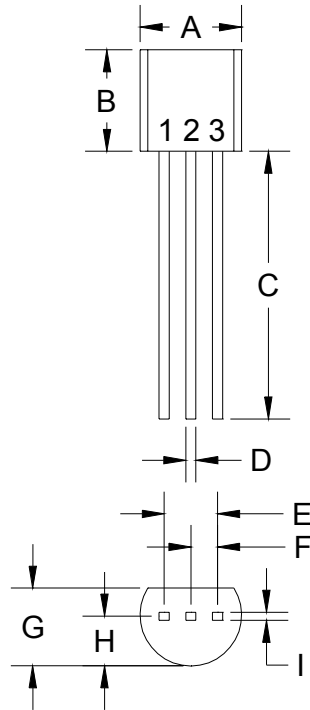
The CENTRAL SEMICONDUCTOR MPS6512 Series (NPN) and MPS6516 Series (PNP) types are molded Epoxy Silicon Small Signal Transistors designed for general-purpose amplifier applications.

## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

|                                               | SYMBOL                            | MPS6512<br>MPS6513 | MPS6514<br>MPS6515 | MPS6516<br>MPS6517<br>MPS6518 | MPS6519 | UNITS |
|-----------------------------------------------|-----------------------------------|--------------------|--------------------|-------------------------------|---------|-------|
| Collector-Base Voltage                        | V <sub>CBO</sub>                  | 40                 | 40                 | 40                            | 25      | V     |
| Collector-Emitter Voltage                     | V <sub>CEO</sub>                  | 30                 | 25                 | 40                            | 25      | V     |
| Emitter-Base Voltage                          | V <sub>EBO</sub>                  |                    | 4.0                |                               |         | V     |
| Collector Current                             | I <sub>C</sub>                    |                    | 100                |                               |         | mA    |
| Power Dissipation                             | P <sub>D</sub>                    |                    | 625                |                               |         | mW    |
| Power Dissipation (T <sub>C</sub> =25°C)      | P <sub>D</sub>                    |                    | 1.5                |                               |         | W     |
| Operating and Storage<br>Junction Temperature | T <sub>J</sub> , T <sub>stg</sub> |                    | -65 to +150        |                               |         | °C    |
| Thermal Resistance                            | θ <sub>JC</sub>                   |                    | 83.3               |                               |         | °C/W  |
| Thermal Resistance                            | θ <sub>JA</sub>                   |                    | 200                |                               |         | °C/W  |

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| SYMBOL               | TEST CONDITIONS                                   | MPS6512<br>MPS6513<br>MIN MAX | MPS6514<br>MPS6515<br>MIN MAX | MPS6516<br>MPS6517<br>MPS6518<br>MIN MAX | MPS6519<br>MIN MAX            | UNITS |
|----------------------|---------------------------------------------------|-------------------------------|-------------------------------|------------------------------------------|-------------------------------|-------|
| I <sub>CBO</sub>     | V <sub>CB</sub> =30V                              | 50                            | 50                            | 50                                       | -                             | nA    |
| I <sub>CBO</sub>     | V <sub>CB</sub> =20V                              | -                             | -                             | -                                        | 50                            | nA    |
| BV <sub>CEO</sub>    | I <sub>C</sub> =0.5mA                             | 30                            | 25                            | 40                                       | 25                            | V     |
| BV <sub>EBO</sub>    | I <sub>E</sub> =10μA                              | 4.0                           | 4.0                           | 4.0                                      | 4.0                           | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA       | 0.5                           | 0.5                           | 0.5                                      | 0.5                           | V     |
| C <sub>ob</sub>      | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=100kHz | 3.5                           | 3.5                           | 4.0                                      | 4.0                           | pF    |
| SYMBOL               | TEST CONDITIONS                                   | MPS6512<br>MPS6516<br>MIN MAX | MPS6513<br>MPS6517<br>MIN MAX | MPS6514<br>MPS6518<br>MIN MAX            | MPS6515<br>MPS6519<br>MIN MAX |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =10V, I <sub>C</sub> =2.0mA       | 50 100                        | 90 180                        | 150 300                                  | 250 500                       |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =10V, I <sub>C</sub> =100mA       | 30                            | 60                            | 90                                       | 150                           |       |

TO-92 PACKAGE - MECHANICAL OUTLINE

R1

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A (DIA)    | 0.175  | 0.205 | 4.45        | 5.21 |
| B          | 0.170  | 0.210 | 4.32        | 5.33 |
| C          | 0.500  | -     | 12.70       | -    |
| D          | 0.016  | 0.022 | 0.41        | 0.56 |
| E          | 0.100  |       | 2.54        |      |
| F          | 0.050  |       | 1.27        |      |
| G          | 0.125  | 0.165 | 3.18        | 4.19 |
| H          | 0.080  | 0.105 | 2.03        | 2.67 |
| I          | 0.015  |       | 0.38        |      |

TO-92 (REV: R1)

LEAD CODE

1. Emitter
2. Base
3. Collector

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## 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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