

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

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Manufacturers of World Class Discrete Semiconductors

MPS-A42 MPS-A43 NPN

SILICON HIGH VOLTAGE TRANSISTORS

JEDEC T0-92 Case

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MPS-A42 Series types are NPN Molded Epoxy Small Signal Silicon Transistors designed for high voltage applications.

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

|                                               | SYMBOL                            | MPS-A42     | MPS-A43 | UNIT  |
|-----------------------------------------------|-----------------------------------|-------------|---------|-------|
| Collector-Base Voltage                        | V <sub>CB0</sub>                  | 300         | 200     | V     |
| Collector-Emitter Voltage                     | V <sub>CE0</sub>                  | 300         | 200     | V     |
| Emitter-Base Voltage                          | V <sub>EB0</sub>                  | 6.0         | 6.0     | V     |
| Power Dissipation                             | P <sub>D</sub>                    | 625         | 625     | mW    |
| Operating and Storage<br>Junction Temperature | T <sub>J</sub> , T <sub>stg</sub> | -65 TO +150 |         | °C    |
| Collector Current                             | I <sub>C</sub>                    | 500         |         | mA    |
| Thermal Resistance                            | θ <sub>JA</sub>                   | .200        |         | °C/mW |

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

| SYMBOL                | TEST CONDITIONS                                      | MPS-A42 |     | MPS-A43 |     | UNIT |
|-----------------------|------------------------------------------------------|---------|-----|---------|-----|------|
|                       |                                                      | MIN     | MAX | MIN     | MAX |      |
| I <sub>CB0</sub>      | V <sub>CB</sub> =200V                                |         | 0.1 |         | -   | μA   |
| I <sub>CB0</sub>      | V <sub>CB</sub> =160V                                |         | -   |         | 0.1 | μA   |
| I <sub>EB0</sub>      | V <sub>BE</sub> =6.0V                                |         | 0.1 |         | -   | μA   |
| I <sub>EB0</sub>      | V <sub>BE</sub> =4.0V                                |         | -   |         | 0.1 | μA   |
| BV <sub>CB0</sub>     | I <sub>C</sub> =100μA                                | 300     |     | 200     |     | V    |
| BV <sub>CE0</sub>     | I <sub>C</sub> =1.0mA                                | 300     |     | 200     |     | V    |
| BV <sub>EB0</sub>     | I <sub>C</sub> =100μA                                | 6.0     |     | 6.0     |     | V    |
| V <sub>CE</sub> (SAT) | I <sub>C</sub> =20mA, I <sub>B</sub> =2.0mA          |         | 0.5 |         | 0.4 | V    |
| V <sub>BE</sub> (SAT) | I <sub>C</sub> =20mA, I <sub>B</sub> =2.0mA          |         | 0.9 |         | 0.9 | V    |
| h <sub>FE</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =1.0mA          | 25      |     | 25      |     |      |
| h <sub>FE</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =10mA           | 40      |     | 40      |     |      |
| h <sub>FE</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =30mA           | 40      | -   | 50      | 200 |      |
| f <sub>T</sub>        | V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz | 50      |     | 50      |     | MHz  |
| C <sub>ob</sub>       | V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1.0MHz    |         | 3.0 |         | 4.0 | pF   |