

**MPSA42  
MPSA43**

**SILICON  
HIGH VOLTAGE  
NPN TRANSISTORS**



**TO-92 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR MPSA42 and MPSA43 are silicon NPN transistors designed for high voltage applications.

**MARKING: FULL PART NUMBER**

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

|  |
|--|
| Collector-Base Voltage                       |
| Collector-Emitter Voltage                    |
| Emitter-Base Voltage                         |
| Continuous Collector Current                 |
| Power Dissipation                            |
| Power Dissipation ( $T_C=25^\circ\text{C}$ ) |
| Operating and Storage Junction Temperature   |
| Thermal Resistance                           |
| Thermal Resistance                           |

| SYMBOL         | <u>MPSA42</u> | <u>MPSA43</u> | UNITS              |
|----------------|---------------|---------------|--------------------|
| $V_{CB0}$      | 300           | 200           | V                  |
| $V_{CEO}$      | 300           | 200           | V                  |
| $V_{EBO}$      | 6.0           |               | V                  |
| $I_C$          | 500           |               | mA                 |
| $P_D$          | 625           |               | mW                 |
| $P_D$          | 1.5           |               | W                  |
| $T_J, T_{stg}$ | -65 to +150   |               | $^\circ\text{C}$   |
| $\Theta_{JA}$  | 200           |               | $^\circ\text{C/W}$ |
| $\Theta_{JC}$  | 83.3          |               | $^\circ\text{C/W}$ |

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

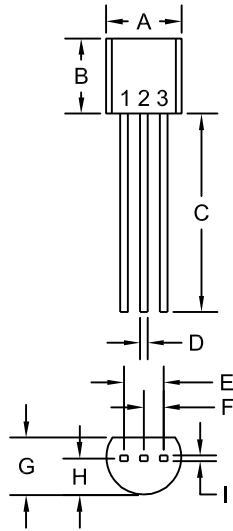
| SYMBOL        | TEST CONDITIONS                                       | <u>MPSA42</u> |      | <u>MPSA43</u> |      | UNITS |
|---------------|---|---------------|------|---------------|------|-------|
|               |   | MIN           | MAX  | MIN           | MAX  |       |
| $I_{CB0}$     | $V_{CB}=200\text{V}$                                  | -             | 100  | -             | -    | nA    |
| $I_{CB0}$     | $V_{CB}=160\text{V}$                                  | -             | -    | -             | 100  | nA    |
| $I_{EBO}$     | $V_{EB}=6.0\text{V}$                                  | -             | 100  | -             | -    | nA    |
| $I_{EBO}$     | $V_{EB}=4.0\text{V}$                                  | -             | -    | -             | 100  | nA    |
| $BV_{CB0}$    | $I_C=100\mu\text{A}$                                  | 300           | -    | 200           | -    | V     |
| $BV_{CEO}$    | $I_C=1.0\text{mA}$                                    | 300           | -    | 200           | -    | V     |
| $BV_{EBO}$    | $I_E=100\mu\text{A}$                                  | 6.0           | -    | 6.0           | -    | V     |
| $V_{CE(SAT)}$ | $I_C=20\text{mA}, I_B=2.0\text{mA}$                   | -             | 0.50 | -             | 0.40 | V     |
| $V_{BE(SAT)}$ | $I_C=20\text{mA}, I_B=2.0\text{mA}$                   | -             | 0.90 | -             | 0.90 | V     |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}$                 | 25            | -    | 25            | -    |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=10\text{mA}$                  | 40            | -    | 40            | -    |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=30\text{mA}$                  | 40            | -    | 50            | 200  |       |
| $f_T$         | $V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 50            | -    | 50            | -    | MHz   |
| $C_{ob}$      | $V_{CB}=20\text{V}, I_E=0, f=1.0\text{MHz}$           | -             | 3.0  | -             | 4.0  | pF    |

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TO-92 CASE - MECHANICAL OUTLINE



R1

| SYMBOL  | DIMENSIONS |       |             |      |
|---------|------------|-------|-------------|------|
|         | 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

MARKING:

FULL PART NUMBER

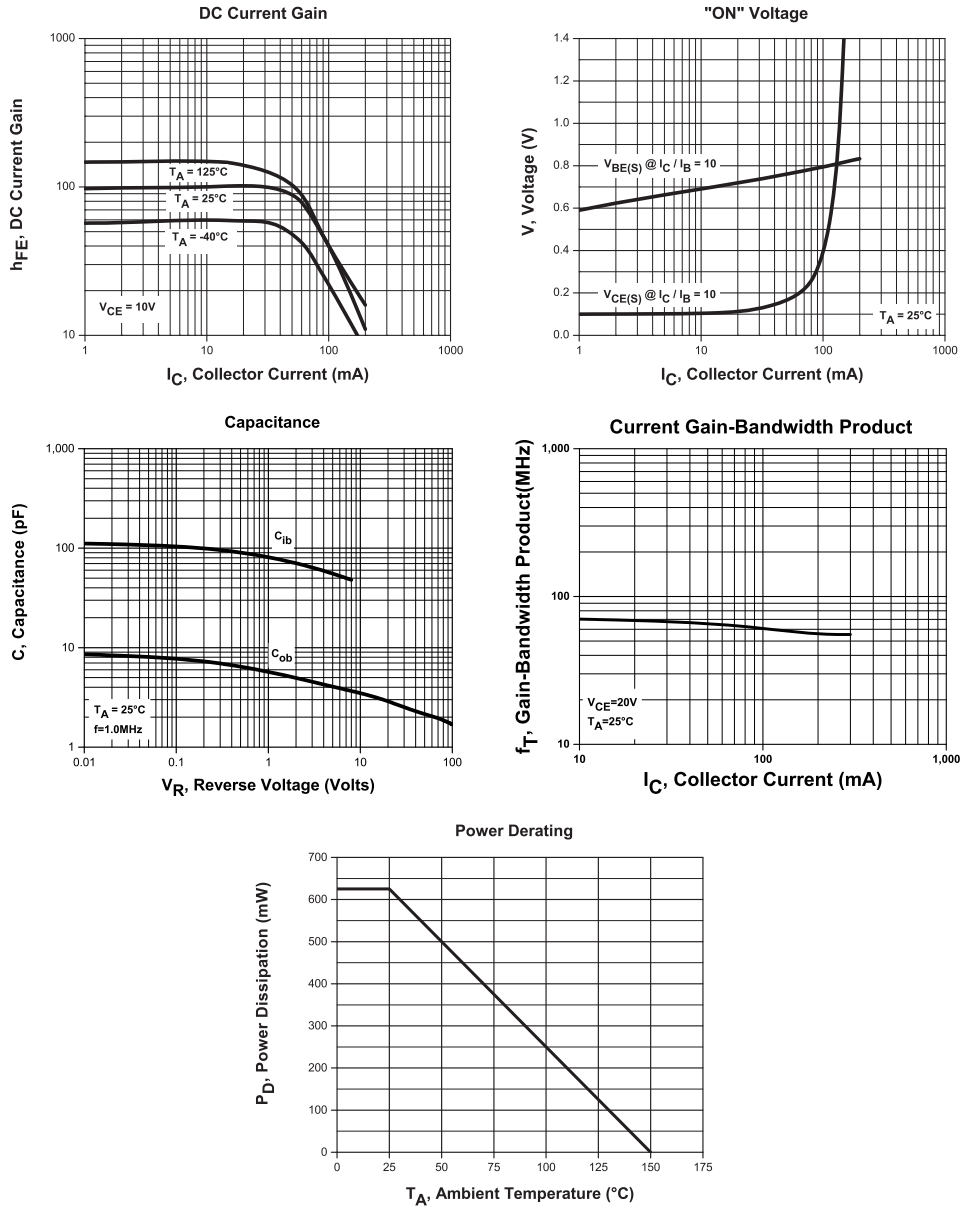
R2 (26-March 2015)

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TYPICAL ELECTRICAL CHARACTERISTICS



R2 (26-March 2015)

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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

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- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

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- 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

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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