

MPSA42
MPSA43

SILICON
HIGH VOLTAGE
NPN TRANSISTORS



TO-92 CASE

Central
Semiconductor Corp.

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 | MPSA42 | MPSA43 | UNITS |
|----------------|-------------|--------|--------------------|
| V_{CBO} | 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 | | $^\circ\text{C}$ |
| θ_{JA} | 200 | | $^\circ\text{C/W}$ |
| θ_{JC} | 83.3 | | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MPSA42 | | MPSA43 | | UNITS |
|---------------|---|--------|------|--------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I_{CBO} | $V_{CB}=200\text{V}$ | - | 100 | - | - | nA |
| I_{CBO} | $V_{CB}=160\text{V}$ | - | - | - | 100 | nA |
| I_{EBO} | $V_{EB}=6.0\text{V}$ | - | 100 | - | - | nA |
| I_{EBO} | $V_{EB}=4.0\text{V}$ | - | - | - | 100 | nA |
| BV_{CBO} | $I_C=100\mu\text{A}$ | 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 |

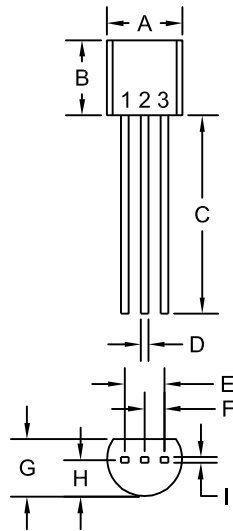
R2 (26-March 2015)

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TO-92 CASE - MECHANICAL OUTLINE



R1

| 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

MARKING:
FULL PART NUMBER

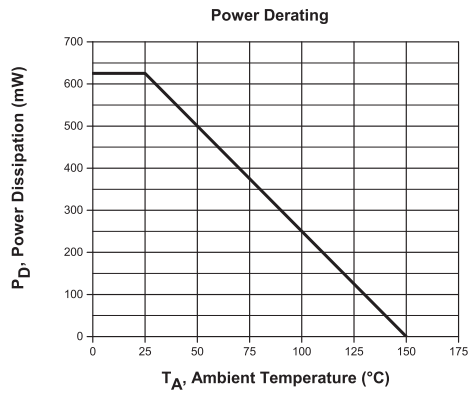
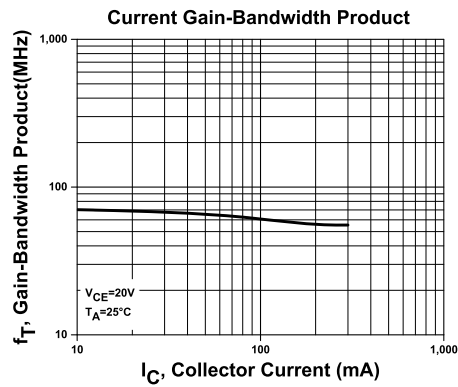
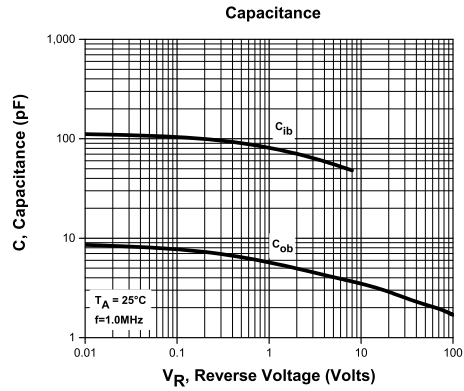
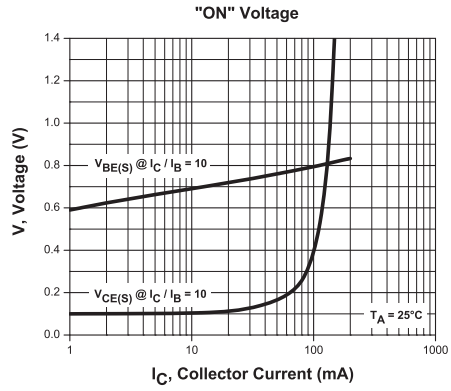
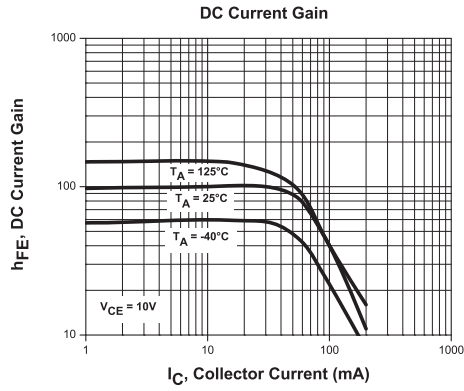
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TYPICAL ELECTRICAL CHARACTERISTICS



R2 (26-March 2015)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd 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

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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