

MPS650 MPS651 NPN
MPS750 MPS751 PNP

**COMPLEMENTARY
SILICON TRANSISTORS**



TO-92 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MPS650, MPS750 series devices are complementary silicon transistors designed for general purpose amplifier and switching applications requiring high gain at high collector current.

MARKING: FULL PART NUMBER

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

| | SYMBOL | MPS650 MPS750 | MPS651 MPS751 | UNITS |
|--|----------------|--------------------------|--------------------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 60 | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | 60 | V |
| Emitter-Base Voltage | V_{EBO} | | 5.0 | V |
| Continuous Collector Current | I_C | | 2.0 | A |
| Power Dissipation | P_D | | 625 | mW |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P_D | | 1.5 | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | | 200 | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JC} | | 83.3 | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MPS650 MPS750 | | MPS651 MPS751 | | UNITS |
|---------------|--|--------------------------|------------|--------------------------|------------|--------------|
| | | MIN | MAX | MIN | MAX | |
| I_{CBO} | $V_{CB}=60\text{V}$ | - | 100 | - | - | nA |
| I_{CBO} | $V_{CB}=80\text{V}$ | - | - | - | 100 | nA |
| I_{EBO} | $V_{EB}=4.0\text{V}$ | - | 100 | - | 100 | nA |
| BV_{CBO} | $I_C=100\mu\text{A}$ | 60 | - | 80 | - | V |
| BV_{CEO} | $I_C=10\text{mA}$ | 40 | - | 60 | - | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 5.0 | - | 5.0 | - | V |
| $V_{CE(SAT)}$ | $I_C=1.0\text{A}, I_B=100\text{mA}$ | - | 0.3 | - | 0.3 | V |
| $V_{CE(SAT)}$ | $I_C=2.0\text{A}, I_B=200\text{mA}$ | - | 0.5 | - | 0.5 | V |
| $V_{BE(SAT)}$ | $I_C=1.0\text{A}, I_B=100\text{mA}$ | - | 1.2 | - | 1.2 | V |
| $V_{BE(ON)}$ | $V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ | - | 1.0 | - | 1.0 | V |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=50\text{mA}$ | 75 | - | 75 | - | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=500\text{mA}$ | 75 | - | 75 | - | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ | 75 | - | 75 | - | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=2.0\text{A}$ | 40 | - | 40 | - | |
| f_T | $V_{CE}=5.0\text{V}, I_C=50\text{mA}, f=100\text{MHz}$ | 75 | - | 75 | - | MHz |

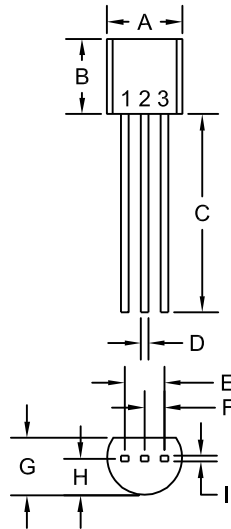
R1 (2-December 2014)

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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 | |

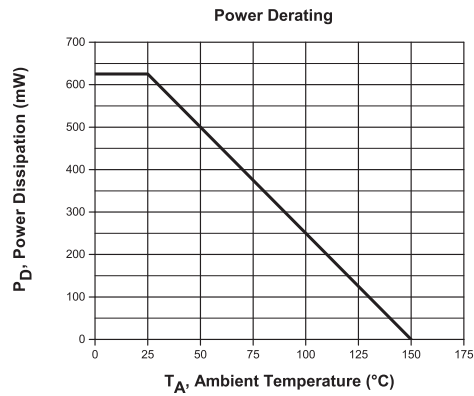
TO-92 (REV: R1)

LEAD CODE:

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

MARKING:
FULL PART NUMBER

TYPICAL ELECTRICAL CHARACTERISTICS



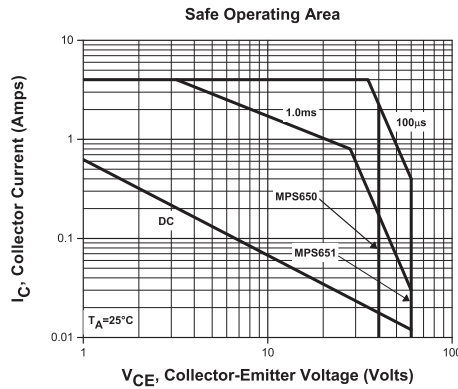
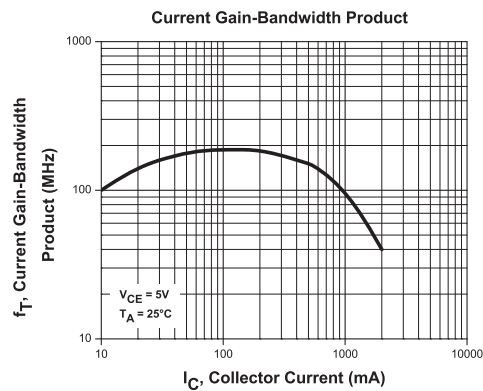
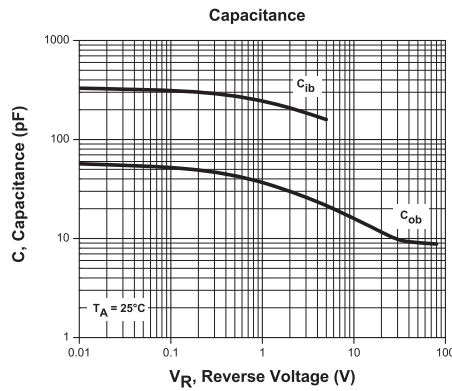
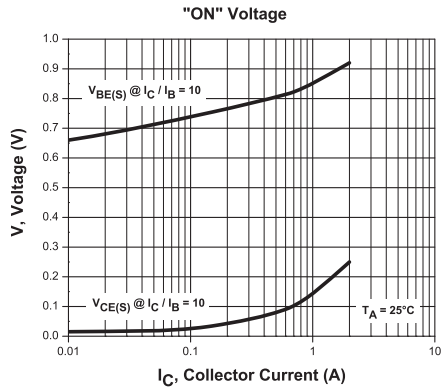
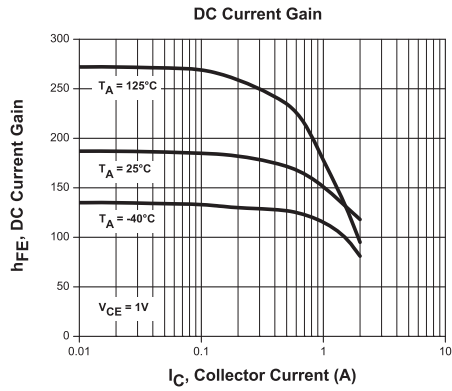
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NPN TYPICAL ELECTRICAL CHARACTERISTICS



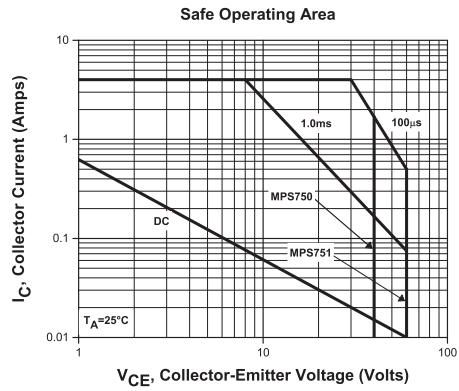
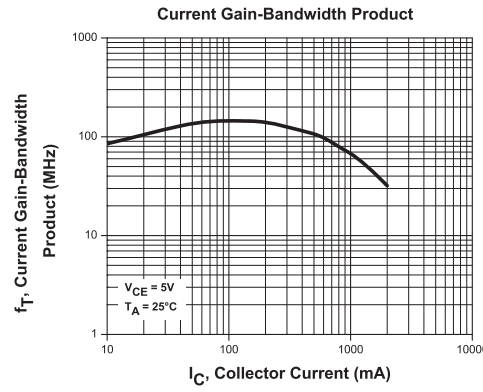
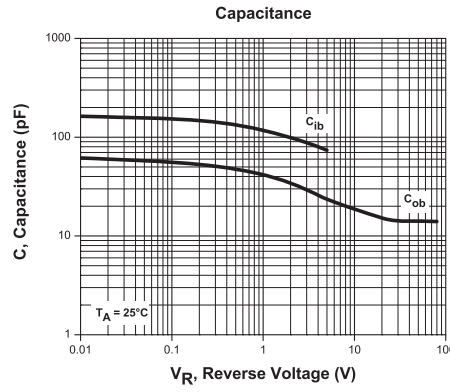
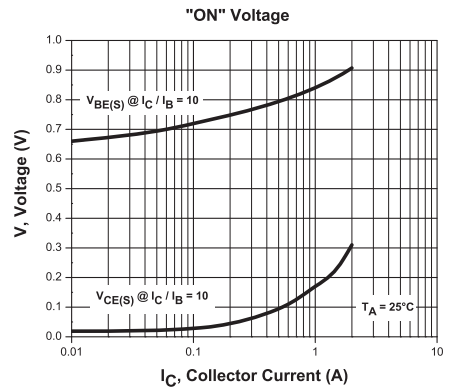
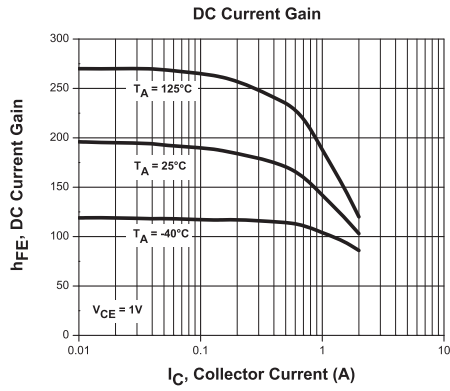
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PNP TYPICAL ELECTRICAL CHARACTERISTICS



R1 (2-December 2014)

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

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