

MPS650 MPS651 NPN  
MPS750 MPS751 PNP

**COMPLEMENTARY  
SILICON TRANSISTORS**



**TO-92 CASE**



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

	<b>SYMBOL</b>	<b>MPS650 MPS750</b>	<b>MPS651 MPS751</b>	<b>UNITS</b>
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	$\theta_{JA}$		200	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$		83.3	$^\circ\text{C/W}$

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

<b>SYMBOL</b>	<b>TEST CONDITIONS</b>	<b>MPS650 MPS750</b>		<b>MPS651 MPS751</b>		<b>UNITS</b>
		<b>MIN</b>	<b>MAX</b>	<b>MIN</b>	<b>MAX</b>	
$I_{CBO}$	$V_{CB}=60\text{V}$	-	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

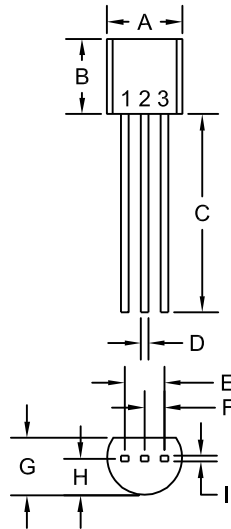
R1 (2-December 2014)

MPS650 MPS651 NPN  
MPS750 MPS751 PNP

COMPLEMENTARY  
SILICON TRANSISTORS



TO-92 CASE - MECHANICAL OUTLINE



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)

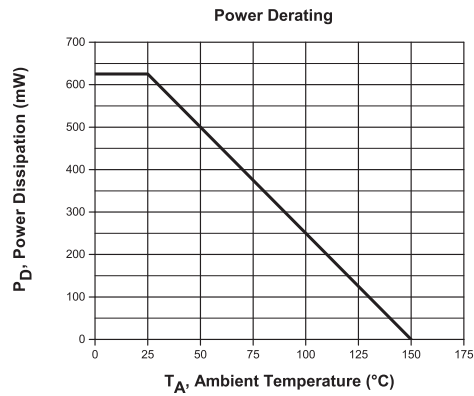
LEAD CODE:

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

MARKING:  
**FULL PART NUMBER**

R1

TYPICAL ELECTRICAL CHARACTERISTICS



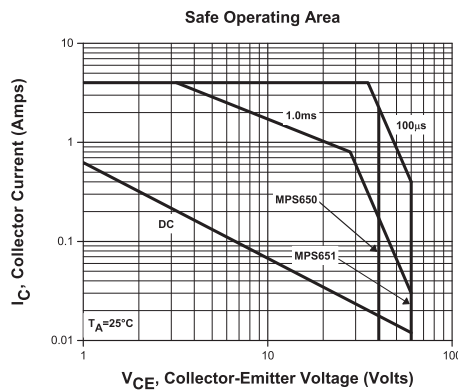
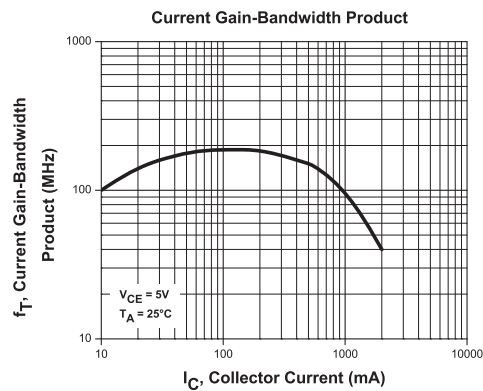
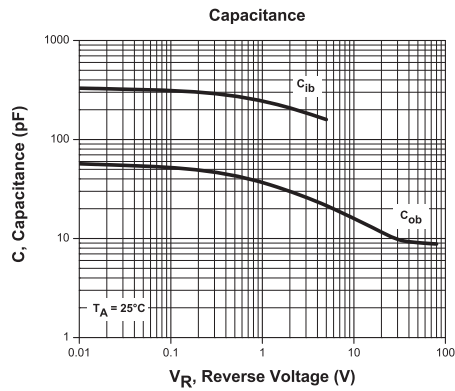
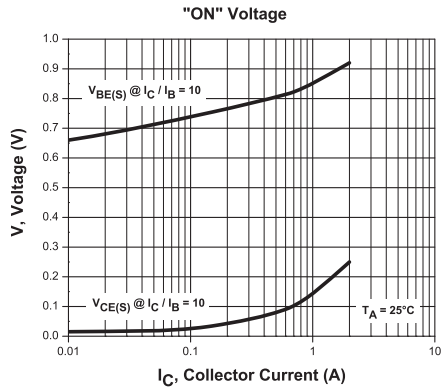
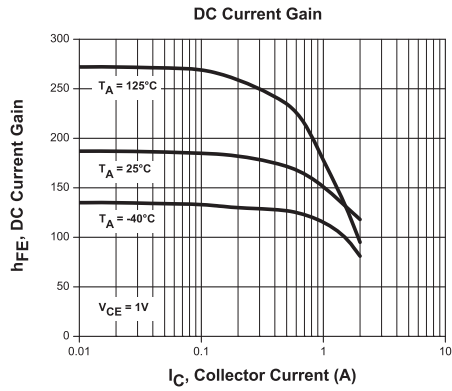
R1 (2-December 2014)

MPS650 MPS651 NPN  
 MPS750 MPS751 PNP

COMPLEMENTARY  
 SILICON TRANSISTORS



### NPN TYPICAL ELECTRICAL CHARACTERISTICS



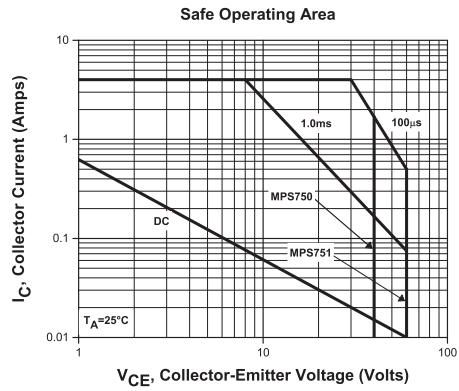
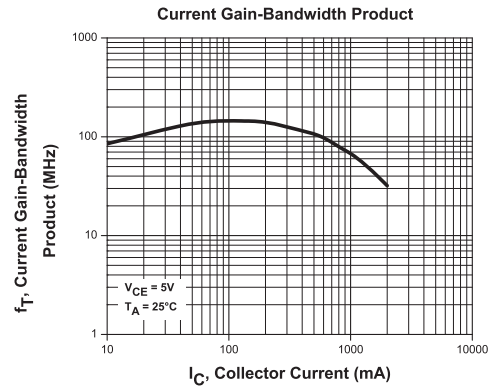
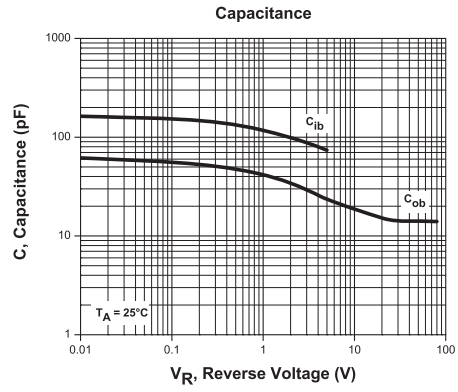
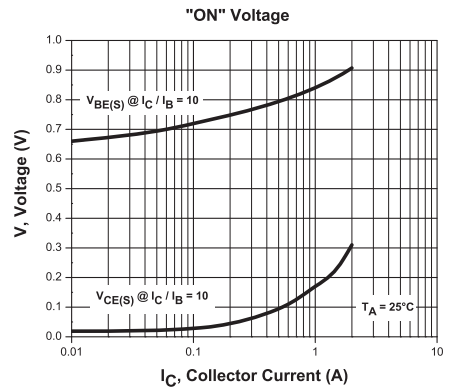
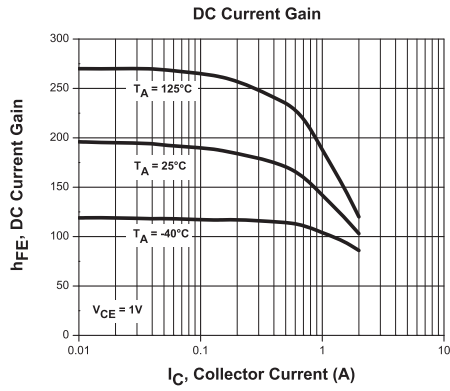
R1 (2-December 2014)

MPS650 MPS651 NPN  
MPS750 MPS751 PNP



COMPLEMENTARY  
SILICON TRANSISTORS

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 (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

---

### 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).

---

### 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)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)