

MPSA42  
MPSA43

SILICON  
HIGH VOLTAGE  
NPN TRANSISTORS



TO-92 CASE

**Central**  
Semiconductor Corp.

[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	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		$^\circ\text{C}$
$\theta_{JA}$	200		$^\circ\text{C/W}$
$\theta_{JC}$	83.3		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	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

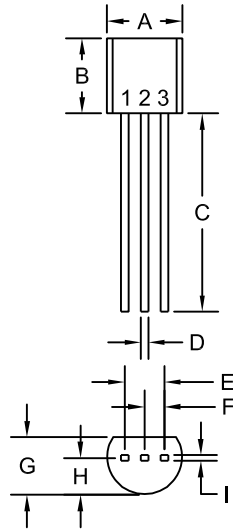
R2 (26-March 2015)

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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

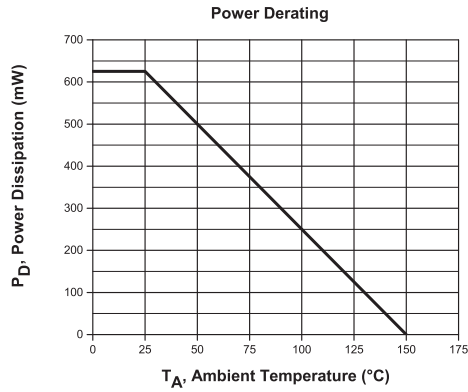
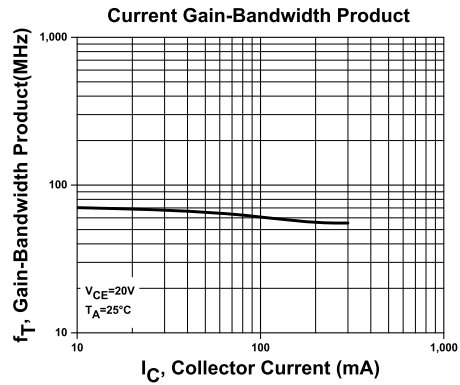
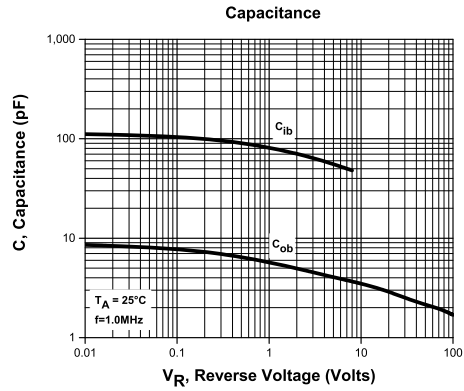
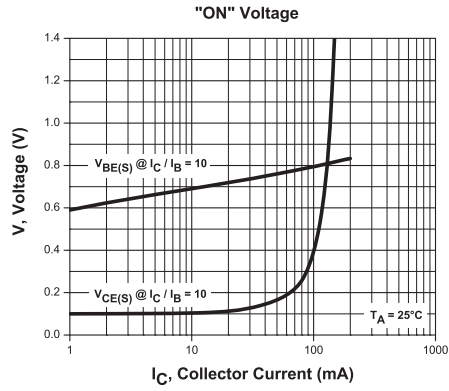
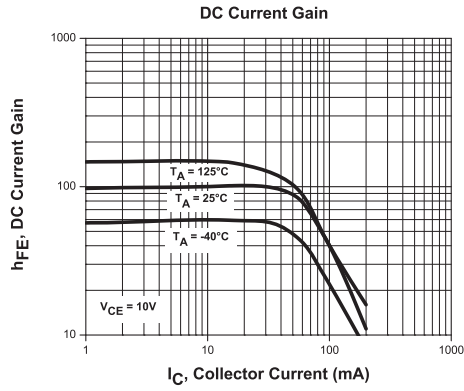
R2 (26-March 2015)

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TYPICAL ELECTRICAL CHARACTERISTICS



R2 (26-March 2015)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### 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

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### 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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### CONTACT US

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