

2N4402  
2N4403

SILICON  
PNP TRANSISTORS



TO-92 CASE



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4402 and 2N4403 are PNP silicon transistors designed for general purpose amplifier and switching applications. NPN complementary types are 2N4400 and 2N4401.

**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  
Operating and Storage Junction Temperature

SYMBOL		UNITS
$V_{CBO}$	40	V
$V_{CEO}$	40	V
$V_{EBO}$	5.0	V
$I_C$	600	mA
$P_D$	625	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$

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

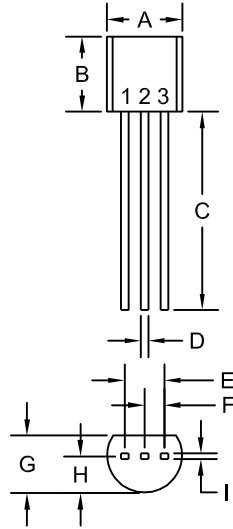
SYMBOL	TEST CONDITIONS	2N4402		2N4403		UNITS
		MIN	MAX	MIN	MAX	
$I_{CEV}$	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$	-	0.1	-	0.1	$\mu\text{A}$
$BV_{CBO}$	$I_C=0.1\text{mA}$	40	-	40	-	V
$BV_{CEO}$	$I_C=1.0\text{mA}$	40	-	40	-	V
$BV_{EBO}$	$I_E=0.1\text{mA}$	5.0	-	5.0	-	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	-	0.4	-	0.4	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	0.75	-	0.75	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.75	0.95	0.75	0.95	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	1.3	-	1.3	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	-	-	30	-	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	30	-	60	-	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	50	-	100	-	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=150\text{mA}$	50	150	100	300	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	20	-	20	-	
$h_{fe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	30	250	60	500	
$f_T$	$V_{CE}=10\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	150	-	200	-	MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=140\text{kHz}$	-	8.5	-	8.5	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=140\text{kHz}$	-	30	-	30	pF
$t_{on}$	$V_{CC}=30\text{V}, V_{EB(OFF)}=2.0\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$	-	35	-	35	ns
$t_{off}$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$	-	255	-	255	ns

R2 (2-December 2014)

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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

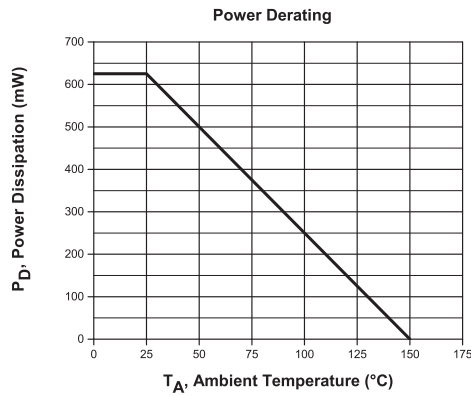
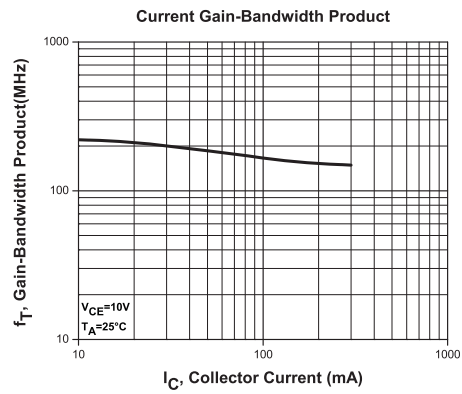
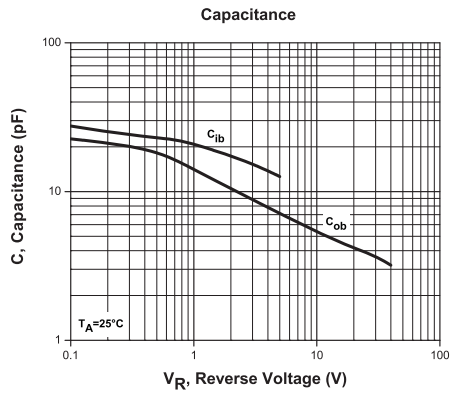
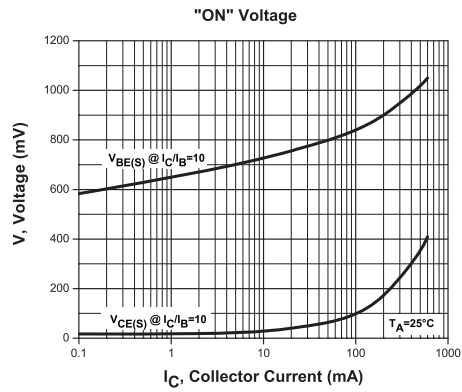
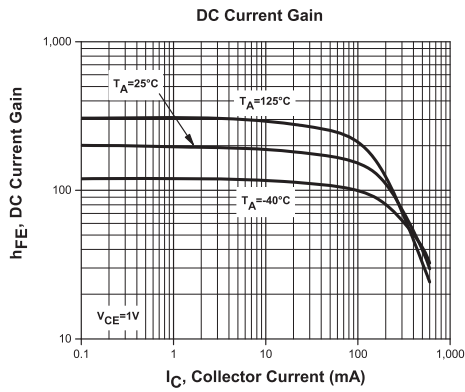
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TYPICAL ELECTRICAL CHARACTERISTICS



R2 (2-December 2014)

## 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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