

2N3250 2N3250A  
2N3251 2N3251A

**SILICON  
PNP TRANSISTORS**



**TO-18 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N3250, 2N3251 series devices are silicon PNP transistors designed for small signal, general purpose switching applications.

**MARKING: FULL PART NUMBER**

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

SYMBOL	2N3250	2N3250A	UNITS
	2N3251	2N3251A	
Collector-Base Voltage	$V_{CBO}$ 50	60	V
Collector-Emitter Voltage	$V_{CEO}$ 40	60	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Continuous Collector Current	$I_C$	200	mA
Power Dissipation	$P_D$	360	mW
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$	1.2	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	146	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JA}$	486	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CEV}$	$V_{CE}=40\text{V}, V_{EB}=3.0\text{V}$		20	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$ (2N3250, 2N3251)	50		V
$BV_{CBO}$	$I_C=10\mu\text{A}$ (2N3250A, 2N3251A)	60		V
$BV_{CEO}$	$I_C=10\text{mA}$ (2N3250, 2N3251)	40		V
$BV_{CEO}$	$I_C=10\text{mA}$ (2N3250A, 2N3251A)	60		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.25	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.50	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.60	0.90	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.20	V

		2N3250		2N3251	
		2N3250A	2N3251A	2N3250A	2N3251A
		MIN	MAX	MIN	MAX
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	40	-	80	-
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	45	-	90	-
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	50	150	100	300
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	15	-	30	-

R1 (4-March 2014)

2N3250 2N3250A  
2N3251 2N3251A

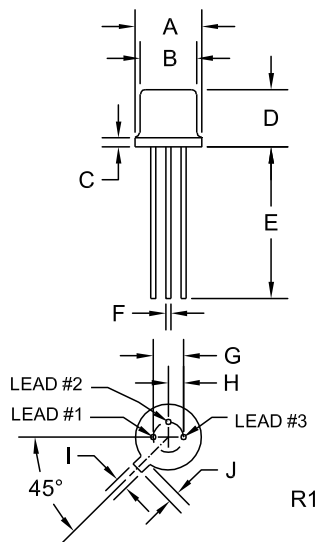
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ELECTRICAL CHARACTERISTICS - Continued: ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N3250		2N3251		UNITS
		MIN	MAX	MIN	MAX	
$f_T$	$V_{CE}=20\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$	250	-	300	-	MHz
$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=100\text{kHz}$	-	6.0	-	6.0	pF
$C_{ib}$	$V_{EB}=1.0\text{V}$ , $I_C=0$ , $f=100\text{kHz}$	-	8.0	-	8.0	pF
NF	$V_{CE}=5.0\text{V}$ , $I_C=100\mu\text{A}$ , $R_S=1.0\text{k}\Omega$ , $f=100\text{Hz}$	-	6.0	-	6.0	dB
$t_{on}$	$V_{CC}=3.0\text{V}$ , $V_{BE}=0.5\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=1.0\text{mA}$	-	70	-	70	ns
$t_{off}$	$V_{CC}=3.0\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=I_{B2}=1.0\text{mA}$	-	225	-	250	ns

TO-18 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

LEAD CODE:

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

MARKING:  
FULL PART NUMBER

R1 (4-March 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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