

PN2221 PN2221A
PN2222 PN2222A

**SILICON
NPN TRANSISTORS**



TO-92 CASE

Central
Semiconductor Corp.

www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR PN2221, PN2222 series devices are silicon NPN epitaxial planar transistors designed for small signal, general purpose switching 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
Operating and Storage Junction Temperature

SYMBOL	PN2221	PN2221A	UNITS
	PN2222	PN2222A	
V_{CB0}	60	75	V
V_{CEO}	30	40	V
V_{EBO}	5.0	6.0	V
I_C		800	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
I_{CBO}	$V_{CB}=50\text{V}$
I_{CBO}	$V_{CB}=60\text{V}$
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$
I_{EBO}	$V_{EB}=3.0\text{V}$
BV_{CBO}	$I_C=10\mu\text{A}$
BV_{CEO}	$I_C=10\text{mA}$
BV_{EBO}	$I_E=10\mu\text{A}$
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$

PN2221		PN2221A		UNITS
PN2222		PN2222A		
MIN	MAX	MIN	MAX	
-	10	-	-	nA
-	-	-	10	nA
-	-	-	10	nA
-	10	-	10	nA
60	-	75	-	V
30	-	40	-	V
5.0	-	6.0	-	V
-	0.4	-	0.3	V
-	1.6	-	1.0	V
0.6	1.3	0.6	1.2	V
-	2.6	-	2.0	V

h _{FE}	V _{CE} =10V, I _C =0.1mA	20	-	35	-	
h _{FE}	V _{CE} =10V, I _C =1.0mA	25	-	50	-	
h _{FE}	V _{CE} =10V, I _C =10mA	35	-	75	-	
h _{FE}	V _{CE} =10V, I _C =150mA	40	120	100	300	
h _{FE}	V _{CE} =1.0V, I _C =150mA	20	-	50	-	
h _{FE}	V _{CE} =10V, I _C =500mA (PN2221, PN2222)	20	-	30	-	
h _{FE}	V _{CE} =10V, I _C =500mA (PN2221A, PN2222A)	25	-	40	-	
f _T	V _{CE} =20V, I _C =20mA, f=100MHz (except PN2222A)	250	-	250	-	MHz
f _T	V _{CE} =20V, I _C =20mA, f=100MHz (PN2222A)	-	-	300	-	MHz
C _{ob}	V _{CB} =10V, f=100kHz	-	8.0	-	8.0	pF
t _{on}	V _{CC} =30V, I _C =150mA, I _B =15mA	-	35	-	35	ns
t _{off}	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	285	-	285	ns

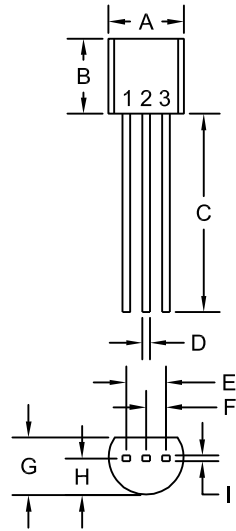
R2 (31-May 2018)

PN2221 PN2221A
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TO-92 CASE - MECHANICAL OUTLINE



DIMENSIONS				
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 (31-May 2018)

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

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

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