PN2221 PN2221A
PN2222 PN2222A

NPN SILICON TRANSISTOR

TO-92 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR PN2221, PN2222 series types are silicon NPN epitaxial planar transistors designed for small signal, general purpose switching applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: (T_A=25°C)

SYMBOL	PN2221 PN2222	PN2221A PN2222A	UNITS
Collector-Base Voltage, V_{CBO}	60	75	V
Collector-Emitter Voltage, V_{CEO}	30	40	V
Emitter-Base Voltage, V_{EBO}	5.0	6.0	V
Continuous Collector Current, I_C	800		mA
Power Dissipation, P_D	625		mW
Operating and Storage Junction Temperature, T_J, T_{stg}	-65 to +150		°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	PN2221 PN2222 MIN	PN2221 PN2222 MAX	PN2221A PN2222A MIN	PN2221A PN2222A MAX	UNITS
I_{CBO}	V_{CB}=50V	-	10	-	-	nA
I_{CBO}	V_{CB}=60V	-	-	-	10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V	-	-	-	10	nA
I_{EBO}	V_{EB}=3.0V	-	10	-	10	nA
BV_{CBO}	I_C=10μA	60	-	75	-	V
BV_{CEO}	I_C=10mA	30	-	40	-	V
BV_{EBO}	I_E=10μA	5.0	-	6.0	-	V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA	-	0.4	-	0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA	-	1.6	-	1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	-	1.3	-	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA	-	2.6	-	2.0	V
		PN2221 PN2221A MIN	PN2221 PN2221A MAX	PN2222 PN2222A MIN	PN2222 PN2222A MAX	
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

R1 (30-January 2012)

PN2221 PN2221A
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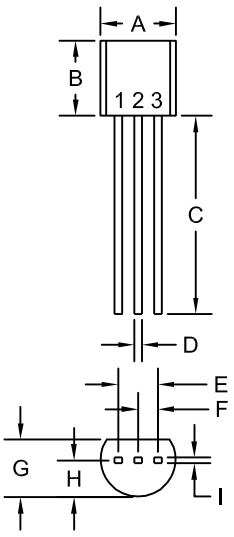
TO-92 CASE - MECHANICAL OUTLINE



R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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

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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