

2N2221A
2N2222A

**SILICON
NPN TRANSISTORS**

TO-18 CASE



DESCRIPTION:

MARKING: FULL PART NUMBER

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

<u>2N2221A</u>		<u>2N2222A</u>	
MIN	MAX	MIN	MAX
20	-	35	-
25	-	50	-
35	-	75	-
15	-	35	-
40	120	100	300
20	-	50	-
25	-	40	-

R5 (5-December 2013)

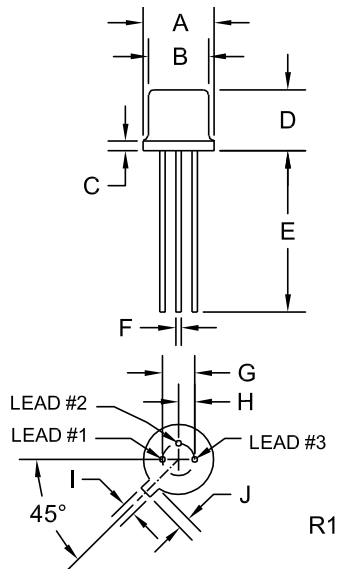
2N2221A
2N2222A

SILICON
NPN TRANSISTORS



ELECTRICAL CHARACTERISTICS - Continued: (T _A =25°C)			2N2221A		2N2222A		UNITS
SYMBOL	TEST CONDITIONS		MIN	MAX	MIN	MAX	
f _T	V _{CE} =20V, I _C =20mA, f=100MHz		250	-	300	-	MHz
C _{ob}	V _{CB} =10V, I _E =0, f=100kHz		-	8.0	-	8.0	pF
C _{ib}	V _{EB} =0.5V, I _C =0, f=100kHz		-	25	-	25	pF
h _{ie}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz		1.0	3.5	2.0	8.0	kΩ
h _{ie}	V _{CE} =10V, I _C =10mA, f=1.0kHz		0.2	1.0	0.25	1.25	kΩ
h _{re}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz		-	5.0	-	8.0	x10 ⁻⁴
h _{re}	V _{CE} =10V, I _C =10mA, f=1.0kHz		-	2.5	-	4.0	x10 ⁻⁴
h _{fe}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz		30	150	50	300	
h _{fe}	V _{CE} =10V, I _C =10mA, f=1.0kHz		50	300	75	375	
h _{oe}	V _{CE} =10V, I _C =1.0mA, f=1.0kHz		3.0	15	5.0	35	μS
h _{oe}	V _{CE} =10V, I _C =10mA, f=1.0kHz		10	100	25	200	μS
rb'C _C	V _{CB} =10V, I _E =20mA, f=31.8MHz		-	150	-	150	ps
NF	V _{CE} =10V, I _C =100μA, R _S =1.0kΩ, f=1.0kHz		-	-	-	4.0	dB
t _d	V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA		-	10	-	10	ns
t _r	V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA		-	25	-	25	ns
t _s	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA		-	225	-	225	ns
t _f	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA		-	60	-	60	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

R5 (5-December 2013)

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

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Central Semiconductor:

[2N2221A](#) [2N2222A](#)