

2N5820 2N5822 NPN
2N5821 2N5823 PNP

**COMPLEMENTARY
SILICON TRANSISTORS**



TO-92-18R CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5820 series devices are epoxy molded complementary silicon small signal transistors manufactured by the epitaxial planar process designed for general purpose amplifier applications where a high collector current rating is required.

MARKING: FULL PART NUMBER

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	70	V
Collector-Emitter Voltage	V_{CES}	70	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	750	mA
Peak Collector Current	I_{CM}	1.0	A
Power Dissipation	P_D	625	mW
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	1.5	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^{\circ}\text{C}$
Thermal Resistance	Θ_{JA}	200	$^{\circ}\text{C/W}$
Thermal Resistance	Θ_{JC}	83.3	$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=25\text{V}$		100	nA
I_{CBO}	$V_{CB}=25\text{V}, T_A=100^{\circ}\text{C}$		15	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	μA
BV_{CES}	$I_C=10\mu\text{A}$	70		V
BV_{CEO}	$I_C=10\text{mA}$	60		V
BV_{EBO}	$I_E=10\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.75	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.2	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	0.6	1.1	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=2.0\text{mA}$ (2N5820, 21)	60	120	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=2.0\text{mA}$ (2N5822, 23)	100	250	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$ (2N5820, 21)	20		
h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$ (2N5822, 23)	25		
f_T	$V_{CE}=2.0\text{V}, I_C=50\text{mA}, f=20\text{MHz}$ (2N5820, 21)	100		MHz
f_T	$V_{CE}=2.0\text{V}, I_C=50\text{mA}, f=20\text{MHz}$ (2N5822, 23)	120		MHz
C_{ob}	$V_{CB}=10\text{V}, I_C=0, f=1.0\text{MHz}$		15	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_E=0, f=1.0\text{MHz}$		55	pF

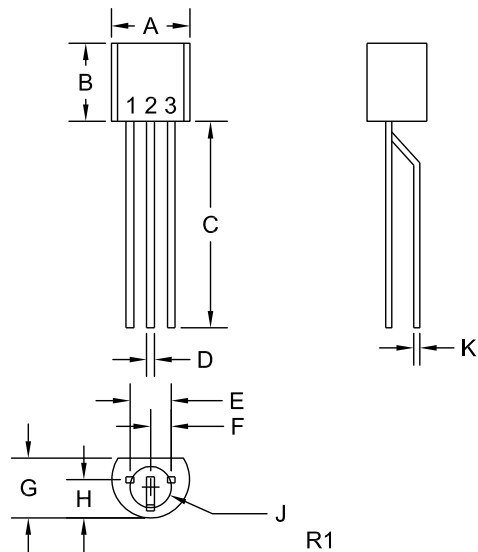
R2 (17-November 2014)

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TO-92-18R 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
J (DIA)	0.100		2.54	
K	0.015		0.38	

TO-92-18R (REV: R1)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R2 (17-November 2014)

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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