

2N5820 2N5822 NPN  
2N5821 2N5823 PNP

**COMPLEMENTARY  
SILICON TRANSISTORS**



**TO-92-18R CASE**



[www.centrasemi.com](http://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	$\theta_{JA}$	200	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$	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	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		10	$\mu\text{A}$
$BV_{CES}$	$I_C=10\mu\text{A}$	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

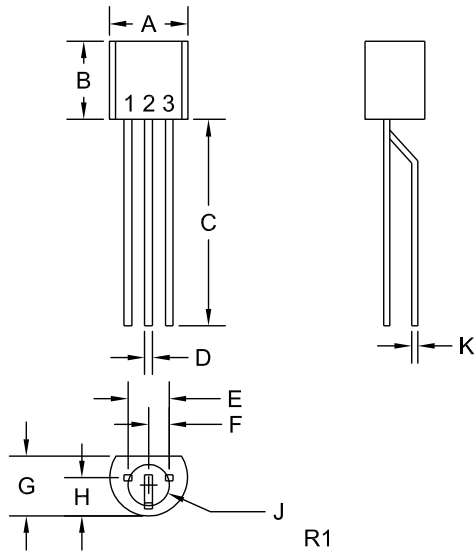
R2 (17-November 2014)

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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)