

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 |

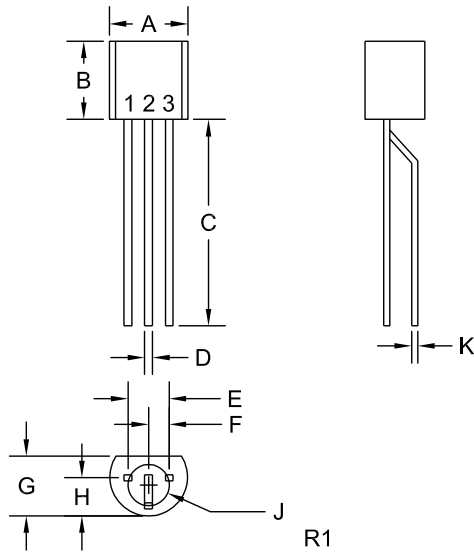
R2 (17-November 2014)

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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)