

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N6430 2N6431 NPN
2N6432 2N6433 PNP

COMPLEMENTARY SILICON TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N6430 series types are hermetically sealed complementary small signal transistors manufactured by the epitaxial planar process designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A = 25°C)

| | SYMBOL | 2N6430 | 2N6431 | UNITS |
|---|-----------------------------------|-------------|--------|-------|
| | | 2N6432 | 2N6433 | |
| Collector-Base Voltage | V _{CB0} | 200 | 300 | V |
| Collector-Emitter Voltage | V _{CEO} | 200 | 300 | V |
| Emitter-Base Voltage (NPN Types) | V _{EBO} | 6.0 | 6.0 | V |
| Emitter-Base Voltage (PNP Types) | V _{EBO} | 5.0 | 5.0 | V |
| Collector Current | I _C | | 100 | mA |
| Power Dissipation | P _D | | 500 | mW |
| Power Dissipation (T _C = 25°C) | P _D | | 1.8 | W |
| Operating and Storage | | | | |
| Junction Temperature | T _J , T _{stg} | -65 to +200 | | °C |
| Thermal Resistance | θ _{JA} | 0.35 | | °C/mW |
| Thermal Resistance | θ _{JC} | 97.2 | | °C/W |

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

| SYMBOL | TEST CONDITIONS | 2N6430 2N6431 | | 2N6432 2N6433 | | UNITS |
|----------------------|---|------------------|-----|------------------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I _{CBO} | V _{CB} = 160V (2N6430, 2N6432) | | 0.1 | | 0.25 | μA |
| I _{CBO} | V _{CB} = 200V (2N6431, 2N6433) | | 0.1 | | 0.25 | μA |
| I _{EBO} | V _{EB} = 4.0V | | 0.1 | | - | μA |
| I _{EBO} | V _{BE} = 3.0V | | - | | 0.1 | μA |
| BV _{CB0} | I _C = 0.1mA (2N6430, 2N6432) | 200 | | 200 | | V |
| BV _{CB0} | I _C = 0.1mA (2N6431, 2N6433) | 300 | | 300 | | V |
| BV _{CEO} | I _C = 1.0mA (2N6430, 2N6432) | 200 | | 200 | | V |
| BV _{CEO} | I _C = 1.0mA (2N6431, 2N6433) | 300 | | 300 | | V |
| BV _{EBO} | I _E = 0.1mA | 6.0 | | 5.0 | | V |
| V _{CE(SAT)} | I _C = 20mA, I _B = 2.0mA | | 0.5 | | 0.5 | V |
| V _{BE(SAT)} | I _C = 20mA, I _B = 2.0mA | | 0.9 | | 0.9 | V |
| h _{FE} | V _{CE} = 10V, I _C = 1.0mA | 25 | | 25 | | |
| h _{FE} | V _{CE} = 10V, I _C = 10mA | 40 | | 40 | | |
| h _{FE} | V _{CE} = 10V, I _C = 30mA | 50 | 200 | 30 | 150 | |

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

| <u>SYMBOL</u> | <u>TEST CONDITIONS</u> | <u>2N6430</u> <u>2N6431</u> | | <u>2N6432</u> <u>2N6433</u> | | <u>UNITS</u> |
|---------------|---|--------------------------------|------------|--------------------------------|------------|--------------|
| | | <u>MIN</u> | <u>MAX</u> | <u>MIN</u> | <u>MAX</u> | |
| f_T | $V_{CE} = 20\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$ | 50 | 200 | - | - | MHz |
| f_T | $V_{CE} = 20\text{V}, I_C = 10\text{mA}, f = 20\text{MHz}$ | - | - | 50 | - | MHz |
| C_{ob} | $V_{CB} = 20\text{V}, I_E = 0, f = 1.0\text{MHz}$ | - | 4.0 | - | 6.0 | pF |

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