

SPTECH Product Specification

SPTECH Silicon NPN Power Transistor

NJW3281G

DESCRIPTION

- With TO-3PN packaging
- Reliable performance at higher powers
- Accurate reproduction of Input signal
- Greater dynamic range
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

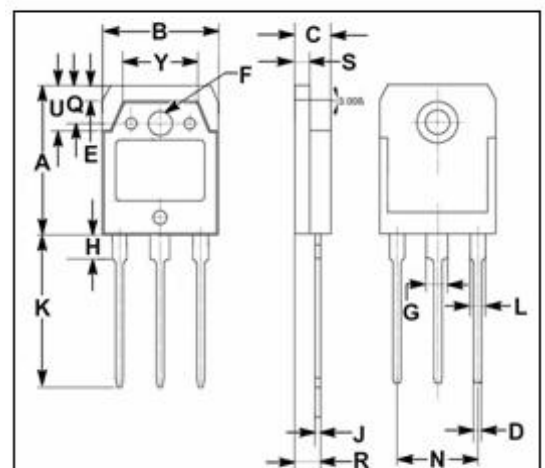
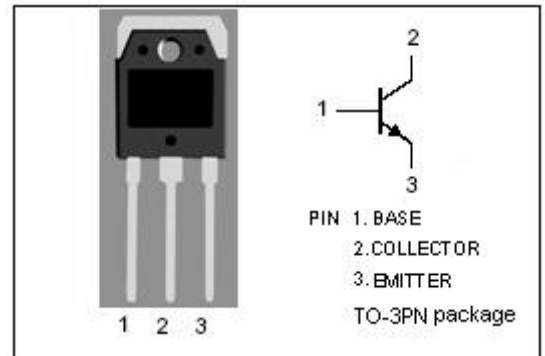
- Switching regulators
- High frequency inverters
- General purpose power amplifiers

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|--------------------|
| V_{CBO} | Collector-Base Voltage | 250 | V |
| V_{CEO} | Collector-Emitter Voltage | 250 | V |
| V_{CEX} | Collector-Emitter Voltage $V_{EB}=5\text{V}$ | 250 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 15 | A |
| I_{CM} | Collector Current-Peak | 30 | A |
| I_B | Base Current-Continuous | 1.6 | A |
| P_T | Total Power Dissipation @ $T_C=25^{\circ}\text{C}$ | 200 | W |
| T_J | Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature Range | -65~150 | $^{\circ}\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|----------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 0.63 | $^{\circ}\text{C/W}$ |



| DIM | mm | |
|-----|-------|-------|
| | MIN | MAX |
| A | 19.60 | 20.10 |
| B | 15.50 | 15.70 |
| C | 4.70 | 4.90 |
| D | 0.90 | 1.10 |
| E | 1.90 | 2.10 |
| F | 3.40 | 3.60 |
| G | 2.90 | 3.20 |
| H | 3.20 | 3.40 |
| J | 0.595 | 0.605 |
| K | 20.00 | 20.70 |
| L | 1.90 | 2.20 |
| N | 10.89 | 10.91 |
| Q | 4.90 | 5.10 |
| R | 3.35 | 3.45 |
| S | 1.995 | 2.100 |
| U | 5.90 | 6.10 |
| Y | 9.90 | 10.10 |

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ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------|--------------------------------------|---------------------------------------|-----|------|-----|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C= 100\text{mA}; I_B= 0$ | 250 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C= 8\text{A}; I_B= 0.8\text{A}$ | | | 0.6 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C= 8\text{A}; V_{CE}= 5\text{V}$ | | | 1.5 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}= 250\text{V}$ | | | 50 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}= 250\text{V}$ | | | 50 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}= 5\text{V}$ | | | 5 | mA |
| h_{FE-1} | DC Current Gain | $I_C= 0.1\text{A}; V_{CE}= 5\text{V}$ | 75 | | 150 | |
| h_{FE-2} | DC Current Gain | $I_C= 1\text{A}; V_{CE}= 5\text{V}$ | 75 | | 150 | |
| h_{FE-3} | DC Current Gain | $I_C= 3\text{A}; V_{CE}= 5\text{V}$ | 75 | | 150 | |
| h_{FE-4} | DC Current Gain | $I_C= 5\text{A}; V_{CE}= 5\text{V}$ | 60 | | | |
| h_{FE-5} | DC Current Gain | $I_C= 8\text{A}; V_{CE}= 5\text{V}$ | 45 | | | |

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