



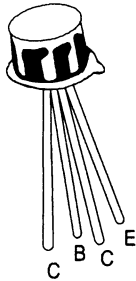
SOLID STATE INC.

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NPN SILICON PLANAR RF TRANSISTOR

2N918



TO-72
Metal Can Package

NPN TRANSISTORS, BEST SUITED FOR LOW NOISE VHF AND VHF AMPLIFIER MIXER AND OSCILLATOR APPLICATIONS.

ABSOLUTE MAXIMUM RATINGS(Ta=25°C unless specified otherwise)

| DESCRIPTION | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|-------|
| Collector Base Voltage | V_{CBO} | 30 | V |
| Collector Emitter Voltage | V_{CEO} | 15 | V |
| Emitter Base Voltage | V_{EBO} | 3 | V |
| Collector Current (Continuous) | I_C | 50 | mA |
| Total Power Dissipation @ Ta=25°C | P_D | 200 | mW |
| Derate above 25°C | | 1.14 | mW/°C |
| Total Device Dissipation@ Tc=25°C | P_D | 300 | W |
| Derate Above 25°C | | 1.71 | mW/°C |
| Operating & Storage Junction Temperature Range | T_J, T_{stg} | -65 to +200 | °C |

ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

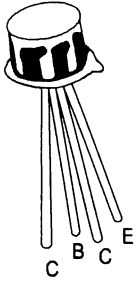
| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|----------------------------------|-----------------|--------------------------------------|-----|-----|-----|---------|
| Collector Emitter (sus) Voltage | $BV_{CEO(sus)}$ | $I_C=3mA, I_B=0$ | 15 | | | V |
| Collector Base Breakdown Voltage | BV_{CBO} | $I_C=1\mu A, I_E=0$ | 30 | | | V |
| Emitter Base Breakdown Voltage | BV_{EBO} | $I_E=10\mu A, I_C=0$ | 3.0 | | | V |
| Collector Cut off Current | I_{CBO} | $V_{CB}=15V, I_E=0$ | | | 10 | nA |
| | | $V_{CB}=15V, I_E=0, T_a=150^\circ C$ | | | 10 | μA |
| Collector Emitter (Sat) Voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=1mA$ | | | 0.4 | V |
| Base Emitter (Sat) Voltage | $V_{BE(sat)}$ | $I_C=10mA, I_B=1mA$ | | | 1.0 | V |
| DC Current Gain | h_{FE} | $I_C=3mA, V_{CE}=1V$ | 20 | | | |

DYNAMIC CHARACTERISTICS

| | | | | | |
|------------------------|----------|--------------------------------|-----|-----|-----|
| Out Put Capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=140kHz$ | | 1.7 | pF |
| | | $V_{CB}=0, I_E=0, f=140kHz$ | | 3.0 | pF |
| Input Capacitance | C_{ib} | $V_{EB}=0.5V, I_C=0, f=140kHz$ | | 2.0 | pF |
| High Bandwidth Product | f_T | $I_C=4mA, V_{CE}=10V, f=10MHz$ | 600 | | MHz |
| Noise Figure | NF | $I_C=1mA, V_{CE}=6V$ | | | |
| | | $R_G=400\Omega, f=60MHz$ | | 6.0 | dB |

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FUNCTIONAL TEST

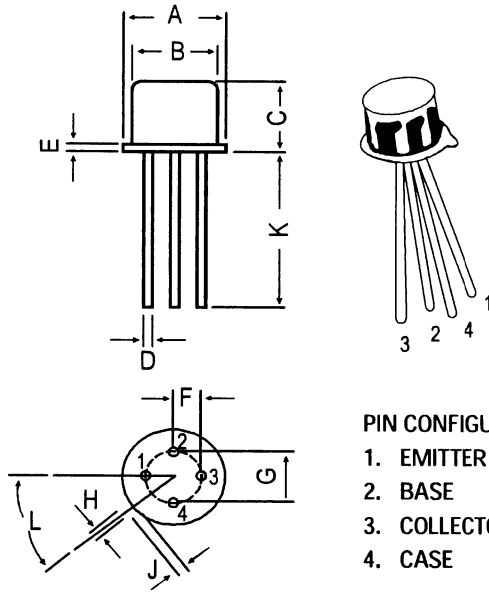
| | | | | |
|-----------------------------|----------|---------------------------------|----|----|
| Power Gain | G_{pe} | $V_{CB}=12V, I_C=6mA, f=200MHz$ | 15 | dB |
| Power Output | P_O | $V_{CB}=12V, I_C=8mA, f=500MHz$ | 30 | mW |
| Collector Efficiency | n | $V_{CB}=15V, I_C=8mA, f=500MHz$ | 25 | % |

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PIN CONFIGURATION

- 1. EMITTER
- 2. BASE
- 3. COLLECTOR
- 4. CASE

All dimensions in mm.

| DIM | MIN. | MAX. |
|-----|--------|--------|
| A | 5.24 | 5.84 |
| B | 4.52 | 4.95 |
| C | 4.31 | 5.33 |
| D | 0.40 | 0.53 |
| E | — | 0.76 |
| F | 1.14 | 1.39 |
| G | 2.28 | 2.97 |
| H | 0.91 | 1.17 |
| J | 0.71 | 1.22 |
| K | 12.70 | — |
| L | 12 DEG | 48 DEG |