

MPSA18
NPN SILICON TRANSISTOR



TO-92 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MPSA18 is a small signal, low noise NPN silicon transistor designed for general purpose amplifier applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

| | SYMBOL | | UNITS |
|--|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CB0} | 45 | V |
| Collector-Emitter Voltage | V_{CEO} | 45 | V |
| Emitter-Base Voltage | V_{EBO} | 6.5 | V |
| Continuous Collector Current | I_C | 200 | mA |
| Power Dissipation | P_D | 625 | mW |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | 200 | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---|-----|------|-------|
| I_{CBO} | $V_{CB}=30\text{V}$ | | 50 | nA |
| BV_{CB0} | $I_C=100\mu\text{A}$ | 45 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ | 45 | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 6.5 | | V |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$ | | 0.2 | V |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$ | | 0.3 | V |
| $V_{BE(ON)}$ | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ | | 0.7 | V |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$ | 400 | | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ | 500 | | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ | 500 | | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | 500 | 1500 | |
| f_T | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=100\text{MHz}$ | 100 | | MHz |
| C_{ob} | $V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$ | | 3.0 | pF |
| C_{ib} | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$ | | 6.5 | pF |
| NF | $V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=10\text{k}\Omega, f=1.0\text{kHz}$ | | 1.5 | dB |

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TO-92 CASE - MECHANICAL OUTLINE



R1

| 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 |
| I | 0.015 | | 0.38 | |

TO-92 (REV: R1)

LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING:
FULL PART NUMBER

R0 (3-February 2012)