T-29-23

FAIRCHILD
A Schlumberger Company

# MPS2924/FTSO2924

## NPN Small Signal General Purpose Amplifier

- $V_{CEO}$. **25 V (Min)**
- $h_{FE}$ ... **150-300 @ 2.0 mA**

**PACKAGE**

| | |
|---|---|
| MPS2924 | TO-92 |
| FTSO2924 | TO-236AA/AB |

**ABSOLUTE MAXIMUM RATINGS** (Note 1)

**Temperatures**

| | |
|---|---|
| Storage Temperature | -55° C to 150° C |
| Operating Junction Temperature | 150° C |

**Power Dissipation** (Notes 2 & 3)

| Total Dissipation at | MPS | FTSO |
|---|---|---|
| 25° C Ambient Temperature | 0.625 W | 0.350 W* |
| 70° C Ambient Temperature | 0.400 W | |
| 25° C Case Temperature | 1.0 W | |

**Voltages & Currents**

| | | |
|---|---|---|
| $V_{CEO}$ | Collector to Emitter Voltage (Note 4) | 25 V |
| $V_{CBO}$ | Collector to Base Voltage | 25 V |
| $V_{EBO}$ | Emitter to Base Voltage | 5.0 V |
| $I_C$ | Collector Current | 100 mA |

**ELECTRICAL CHARACTERISTICS** (25° C Ambient Temperature unless otherwise noted) (Note 5)

| SYMBOL | CHARACTERISTIC | MIN | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cutoff Current | | 500<br>15 | nA<br>μA | $V_{CB}$ = 25 V, $I_E$ = 0<br>$V_{CB}$ = 25 V, $I_E$ = 0, $T_A$ = 100° |
| $I_{EBO}$ | Emitter Cutoff Current | | 500 | nA | $V_{EB}$ = 5.0 V, $I_C$ = 0 |
| $h_{fe}$ | Small Signal Current Gain | 150 | 300 | | $V_{CE}$ = 10 V, $I_C$ = 2.0 mA, f = 1.0 kHz |
| $C_{ob}$ | Output Capacitance | | 12 | pF | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1.0 MHz |

**NOTES:**

1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings give a maximum junction temperature of 150° C and (TO-92) junction-to-case thermal resistance of 125° C/W (derating factor of 8.0 mW/° C); junction-to-ambient thermal resistance of 200° C/W (derating factor of 5.0 mW/° C); (TO-236) junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/° C).
4. Rating refers to a high current point where collector to emitter voltage is lowest.
5. For product family characteristic curves, refer to Curve Set T144.

* Package mounted on 99.5% alumina 8 mm x 8 mm x 0.6 mm.