FAIRCHILD SEMICONDUCTOR®

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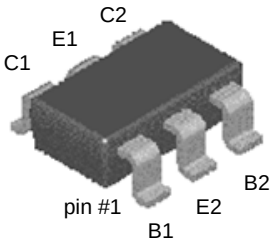
# FMB857B
# PNP Epitaxial Silicon Transistor

- This device is designed for general purpose amplifier application at collector currents to 300mA.
- Sourced from process 68.




**SSOT-6**
Mark: .N2
Dot denotes pin #1

## Absolute Maximum Ratings $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 50 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 45 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current (DC) | 500 | mA |
| $T_J$, $T_{STG}$ | Operating and Storage Junction Temperature Range | -55 ~ 150 | °C |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**
1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. All voltages (V) and currents (A) are negative polarity for PNP transistors.

## Thermal Characteristics $T_a$=25°C unless otherwise noted

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 700<br>5.6 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 180 | °C/W |

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06".

## Electrical Characteristics $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| $BV_{CBO}$ | Collector-Base Breakdown Voltage | $I_C$ = 10μA | 50 | | | V |
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = 1mA | 45 | | | V |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = 10μA | 5 | | | V |
| $BV_{CEX}$ | Collector-Emitter Cutoff Voltage | $I_C$ = 10μA, $V_{BE}$ = 1V | 50 | | | nA |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = 30V, T = 25°C<br>T =150°C | | | 15<br>4000 | nA |
| $h_{FE}$ | DC Current Gain | $V_{CE}$ = 5V, $I_C$ = 2mA | 220 | | 475 | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage | $I_C$ = 10 mA, $I_B$ = 0.5 mA<br>$I_C$ = 100 mA, $I_B$ = 5 mA | | | 0.3<br>0.65 | V |
| $V_{BE}$(on) | Base-Emitter On Voltage | $V_{CE}$ = 5V, $I_C$ = 2mA<br>$V_{CE}$ = 5V, $I_C$ = 10mA | 0.6 | | 0.75<br>0.82 | V |

**NOTES:** All voltages (V) and currents (A) are negative polarity for PNP transistors.

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|---|---|---|
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