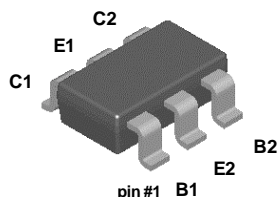


FMB200



SuperSOT™-6
Mark: .N2
Dot denotes pin #1

PNP Multi-Chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 300 mA. Sourced from Process 68.

Absolute Maximum Ratings* T_A = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------------------------|--|-------------|-------|
| V _{CEO} | Collector-Emitter Voltage | 45 | V |
| V _{CB0} | Collector-Base Voltage | 60 | V |
| V _{EBO} | Emitter-Base Voltage | 6.0 | V |
| I _c | Collector Current - Continuous | 500 | mA |
| T _J , T _{stg} | Operating and Storage Junction Temperature Range | -55 to +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 | Characteristic | Max | Units |
|------------------|---|--------|-------|
| | | FMB200 | |
| P _D | Total Device Dissipation | 700 | mW |
| | Derate above 25°C | 5.6 | mW/°C |
| R _{θJA} | Thermal Resistance, Junction to Ambient | 180 | °C/W |

PNP Multi-Chip General Purpose Amplifier

(continued)

FMB200

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Typ | Max | Units |
|--------|-----------|-----------------|-----|-----|-----|-------|
|--------|-----------|-----------------|-----|-----|-----|-------|

OFF CHARACTERISTICS

| | | | | | | |
|------------|--------------------------------------|-----------------------------------|-----|--|----|----|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C = 10\ \mu\text{A}, I_B = 0$ | 60 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage* | $I_C = 1.0\ \text{mA}, I_E = 0$ | 45 | | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 10\ \mu\text{A}, I_C = 0$ | 6.0 | | | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = 50\ \text{V}, I_E = 0$ | | | 50 | nA |
| I_{CES} | Collector Cutoff Current | $V_{CE} = 40\ \text{V}, I_E = 10$ | | | 50 | nA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = 4.0\ \text{V}, I_C = 0$ | | | 50 | nA |

ON CHARACTERISTICS

| | | | | | | |
|---------------|--------------------------------------|---|------------------|--|-------------|---|
| h_{FE} | DC Current Gain | $I_C = 100\ \mu\text{A}, V_{CE} = 1.0\ \text{V}$ $I_C = 10\ \text{mA}, V_{CE} = 1.0\ \text{V}$ $I_C = 150\ \text{mA}, V_{CE} = 5.0\ \text{V}^*$ | 80 100 100 | | 450 350 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 10\ \text{mA}, I_B = 1.0\ \text{mA}$ $I_C = 200\ \text{mA}, I_B = 20\ \text{mA}^*$ | | | 0.2 0.4 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 10\ \text{mA}, I_B = 1.0\ \text{mA}$ $I_C = 200\ \text{mA}, I_B = 20\ \text{mA}^*$ | | | 0.85 1.0 | V |

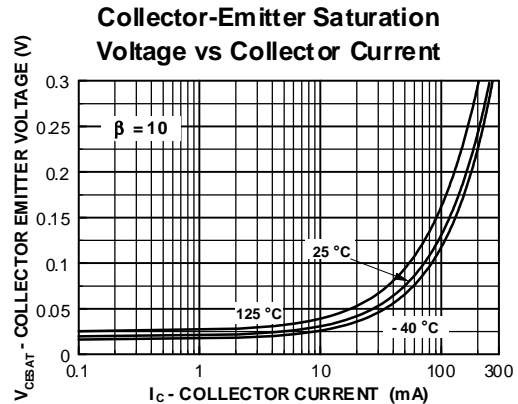
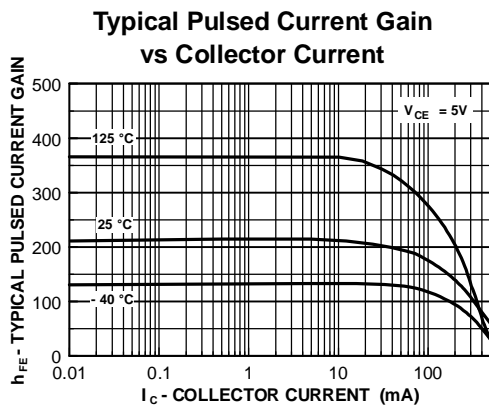
SMALL SIGNAL CHARACTERISTICS

| | | | | | | |
|-----------|----------------------------------|---|--|-----|--|-----|
| f_T | Current Gain - Bandwidth Product | $V_{CE} = 20\ \text{V}, I_C = 20\ \text{mA}$ | | 300 | | MHz |
| C_{obo} | Output Capacitance | $V_{CB} = 10\ \text{V}, f = 1.0\ \text{MHz}$ | | 4.5 | | pF |
| NF | Noise Figure | $I_C = 100\ \mu\text{A}, V_{CE} = 5.0\ \text{V},$ $R_G = 2.0\ \text{k}\Omega, f = 1.0\ \text{kHz}$ | | 2.5 | | dB |

*Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\%$

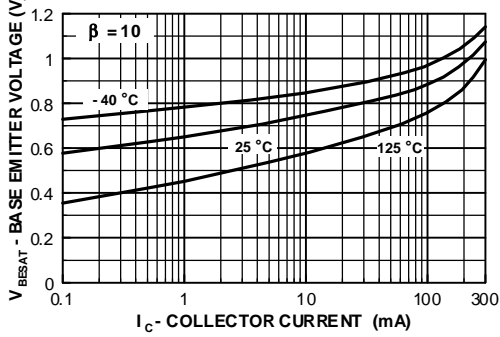
NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

Typical Characteristics

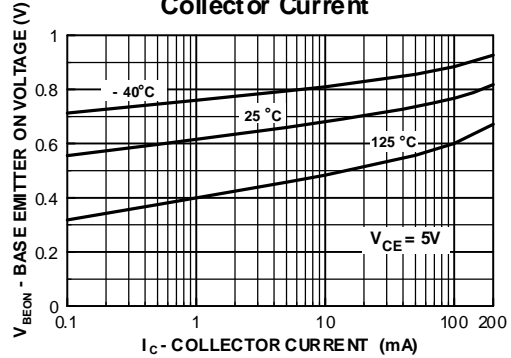


Typical Characteristics (continued)

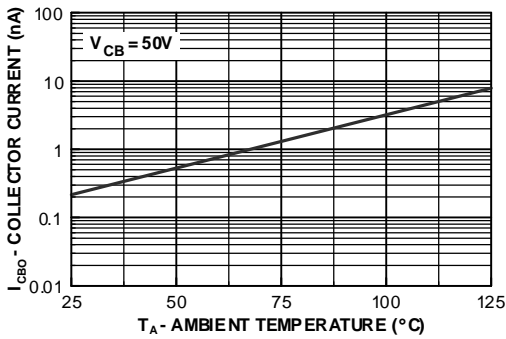
Base-Emitter Saturation Voltage vs Collector Current



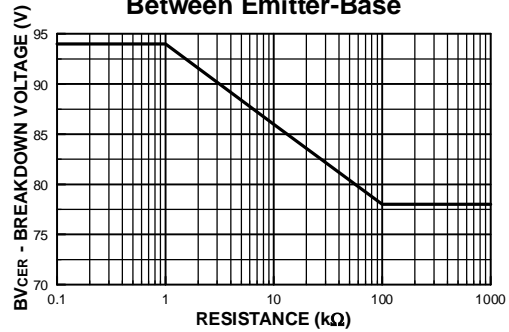
Base Emitter ON Voltage vs Collector Current



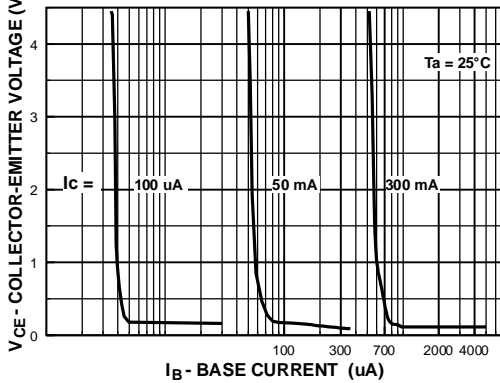
Collector-Cutoff Current vs Ambient Temperature



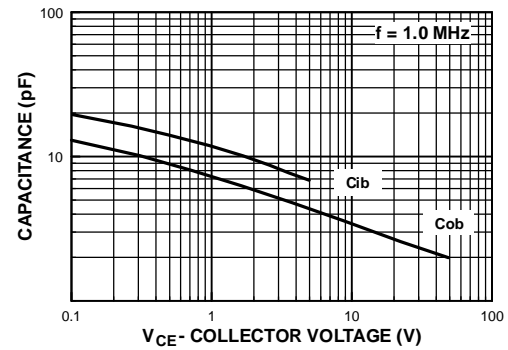
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Collector Saturation Region



Input and Output Capacitance vs Reverse Voltage



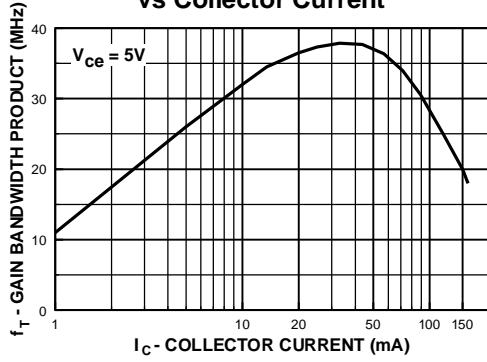
PNP Multi-Chip General Purpose Amplifier

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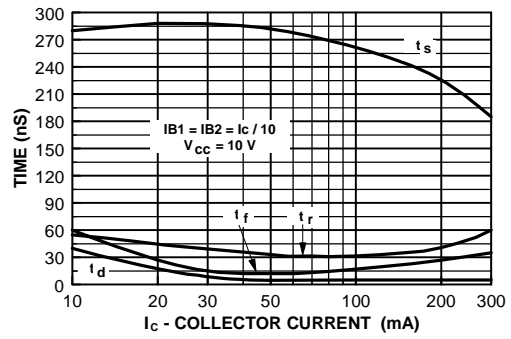
FMB200

Typical Characteristics (continued)

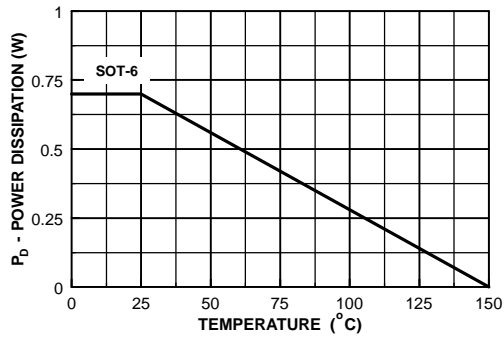
Gain Bandwidth Product vs Collector Current



Switching Times vs Collector Current



Power Dissipation vs Ambient Temperature



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