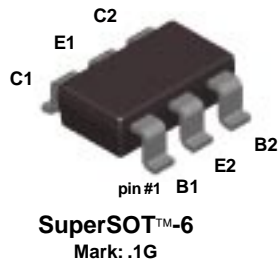


FMBA06



NPN Multi-Chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 300 mA. Sourced from Process 33.

Absolute Maximum Ratings*

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

| Symbol | Parameter | Value | Units |
|----------------|--|-------------|------------------|
| V_{CE0} | Collector-Emitter Voltage | 80 | V |
| V_{CB0} | Collector-Base Voltage | 80 | V |
| V_{EB0} | Emitter-Base Voltage | 4.0 | V |
| I_C | Collector Current - Continuous | 500 | mA |
| T_J, T_{stg} | Operating and Storage Junction Temperature Range | -55 to +150 | $^\circ\text{C}$ |

*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.

Thermal Characteristics

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

| Symbol | Characteristic | Max | Units |
|-----------------|---|--------|---------------------------|
| | | FMBA06 | |
| P_D | Total Device Dissipation | 700 | mW |
| | Derate above 25°C | 5.6 | mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 180 | $^\circ\text{C}/\text{W}$ |

NPN Multi-Chip General Purpose Amplifier

(continued)

FMBA06

Electrical Characteristics

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

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

OFF CHARACTERISTICS

| | | | | | | |
|---------------|---------------------------------------|-----------------------------------|-----|--|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Sustaining Voltage* | $I_C = 1.0\text{ mA}, I_B = 0$ | 80 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E = 100\ \mu\text{A}, I_C = 0$ | 4.0 | | | V |
| I_{CEO} | Collector-Cutoff Current | $V_{CE} = 60\text{ V}, I_B = 0$ | | | 0.1 | μA |
| I_{CBO} | Collector-Cutoff Current | $V_{CB} = 80\text{ V}, I_E = 0$ | | | 0.1 | μA |

ON CHARACTERISTICS

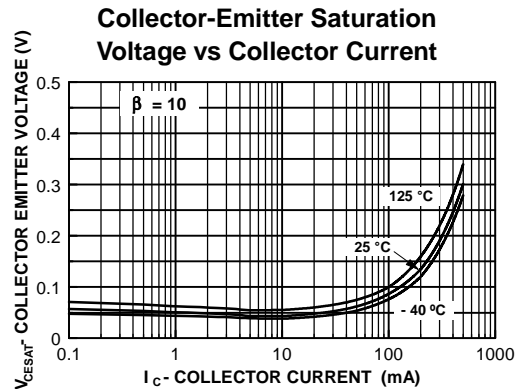
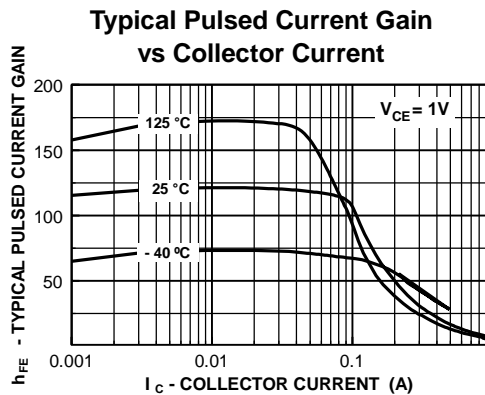
| | | | | | | |
|---------------|--------------------------------------|---|------------|--|------|---|
| h_{FE} | DC Current Gain | $I_C = 10\text{ mA}, V_{CE} = 1.0\text{ V}$ $I_C = 100\text{ mA}, V_{CE} = 1.0\text{ V}$ | 100 100 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 100\text{ mA}, I_B = 10\text{ mA}$ | | | 0.25 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 100\text{ mA}, V_{CE} = 1.0\text{ V}$ | | | 1.2 | V |

SMALL SIGNAL CHARACTERISTICS

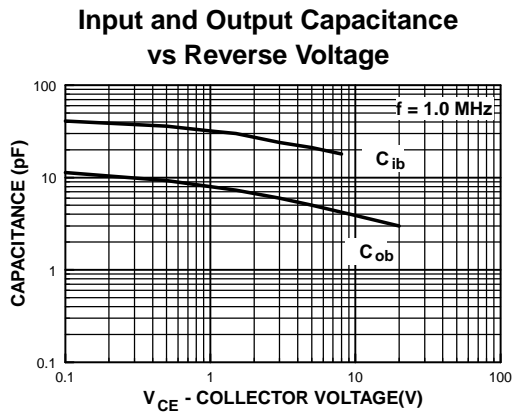
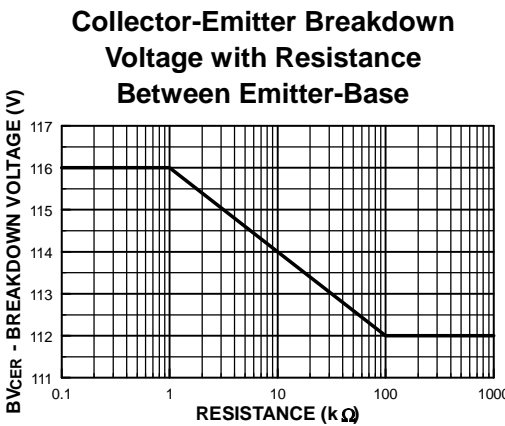
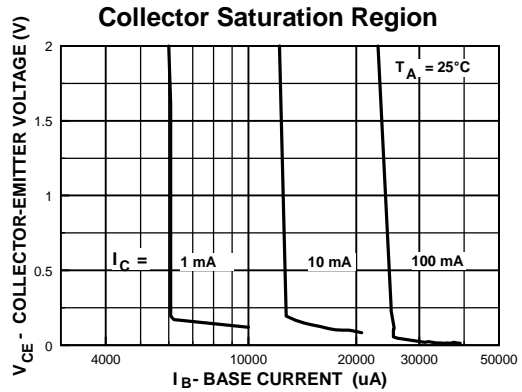
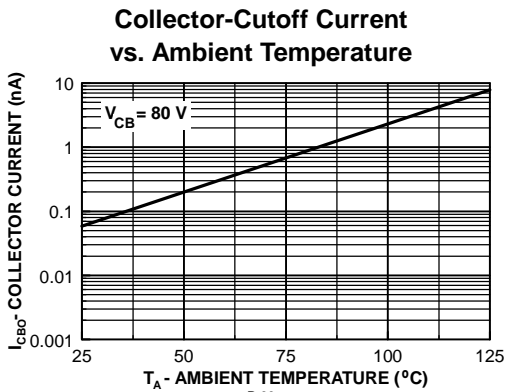
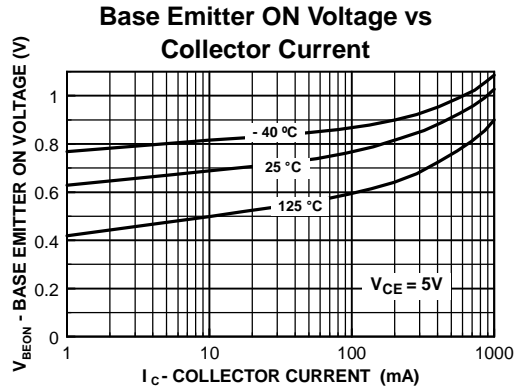
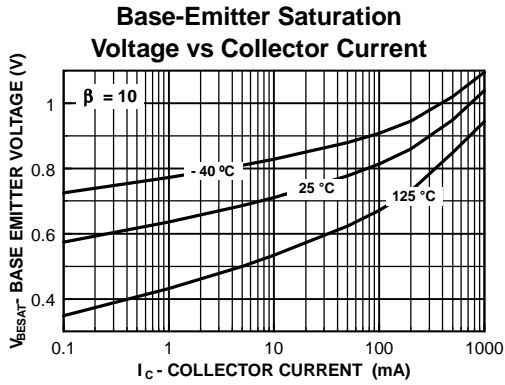
| | | | | | | |
|-------|----------------------------------|--|--|-----|--|-----|
| f_T | Current Gain - Bandwidth Product | $I_C = 10\text{ mA}, V_{CE} = 2.0\text{ V},$ $f = 100\text{ MHz}$ | | 150 | | MHz |
|-------|----------------------------------|--|--|-----|--|-----|

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

Typical Characteristics



Typical Characteristics (continued)



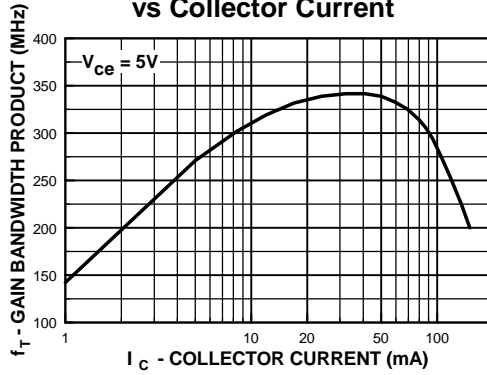
NPN Multi-Chip General Purpose Amplifier

(continued)

FMBA06

Typical Characteristics (continued)

Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature

