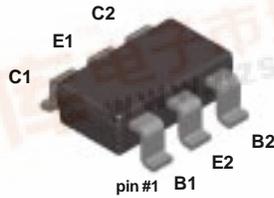




Discrete POWER & Signal Technologies

FMB200



SuperSOT™-6
Mark: .N2

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 _{CBO}	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.

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)

Electrical Characteristics

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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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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
$V_{BE(sat)}$	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 V

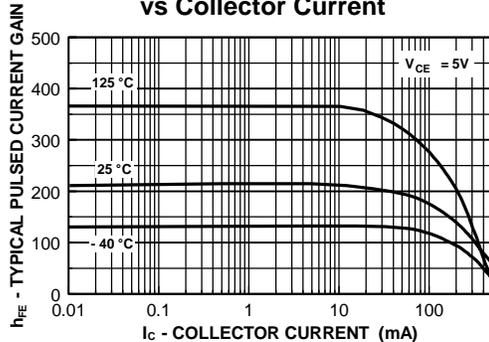
SMALL SIGNAL CHARACTERISTICS

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

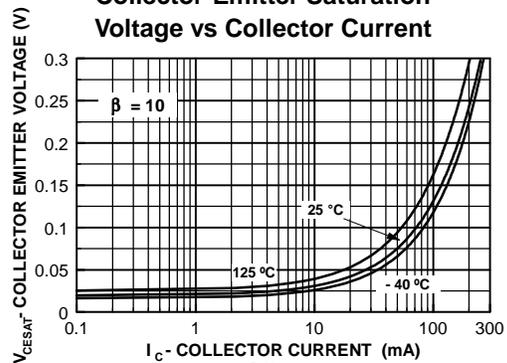
*Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\%$

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current



Collector-Emitter Saturation Voltage vs Collector Current



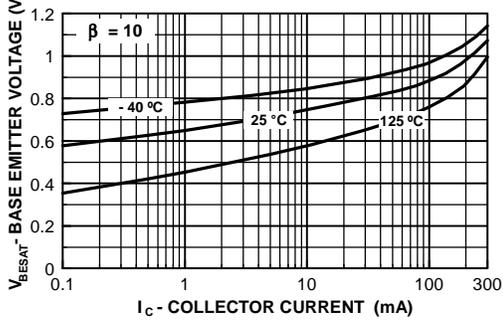
PNP Multi-Chip General Purpose Amplifier

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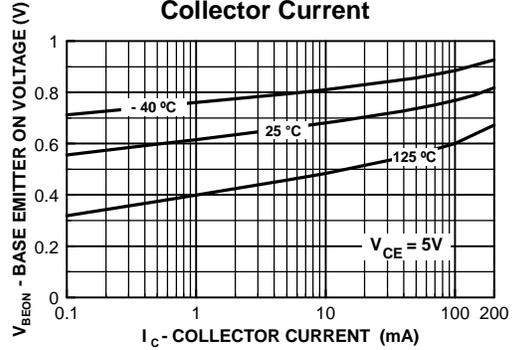
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Typical Characteristics (continued)

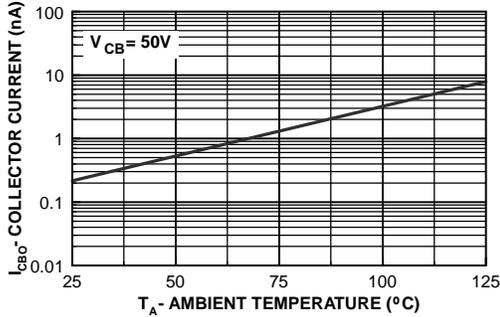
Base-Emitter Saturation Voltage vs Collector Current



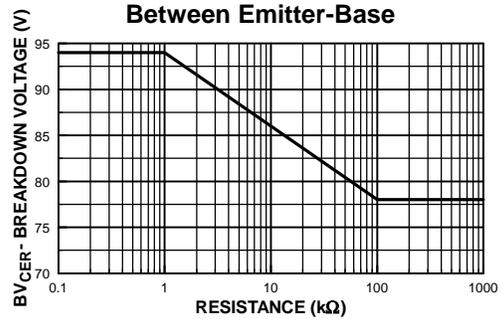
Base Emitter ON Voltage vs Collector Current



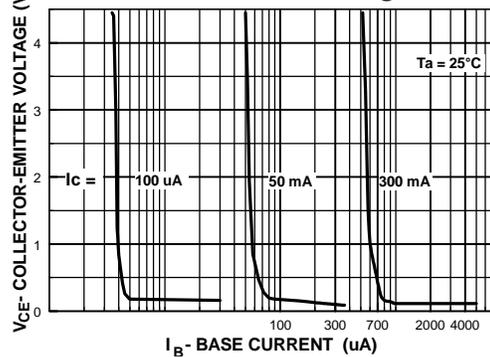
Collector-Cutoff Current vs. Ambient Temperature



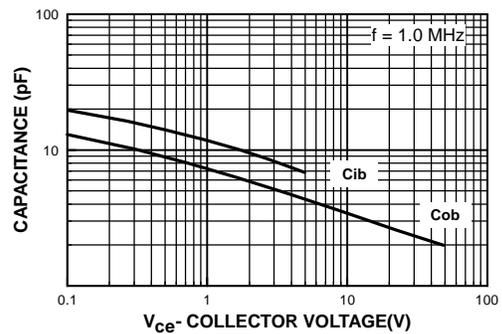
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Collector Saturation Region



Input and Output Capacitance vs Reverse Voltage



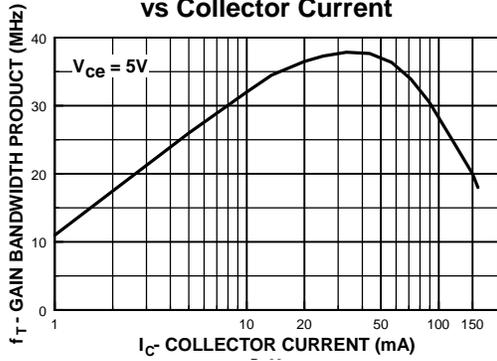
PNP Multi-Chip General Purpose Amplifier

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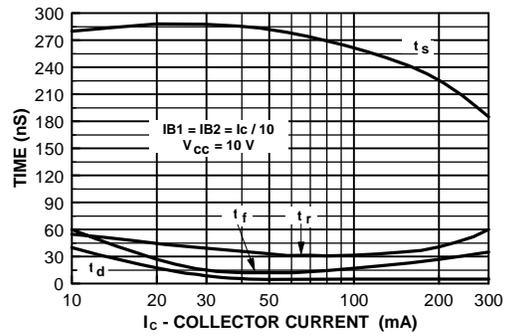
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Typical Characteristics (continued)

Gain Bandwidth Product vs Collector Current



Switching Times vs Collector Current



Power Dissipation vs Ambient Temperature

