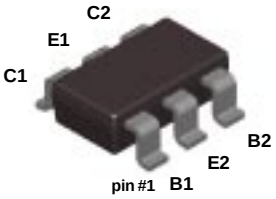
FAIRCHILD SEMICONDUCTOR™

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 Derate above 25°C	700 5.6	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	180	°C/W

PNP Multi-Chip General Purpose Amplifier
(continued)

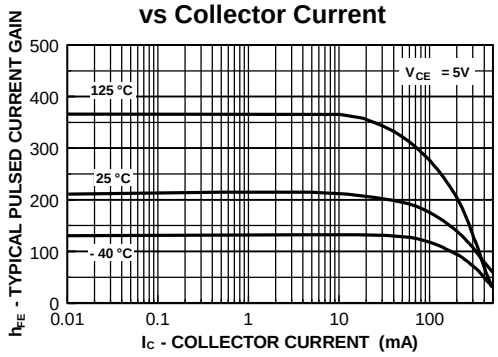
Electrical Characteristics
T_A = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 10 μA, I_B = 0	60			V
BV_{CEO}	Collector-Emitter Breakdown Voltage*	I_C = 1.0 mA, I_E = 0	45			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 10 μA, I_C = 0	6.0			V
I_{CBO}	Collector Cutoff Current	V_{CB} = 50 V, I_E = 0			50	nA
I_{CES}	Collector Cutoff Current	V_{CE} = 40 V, I_E = 10			50	nA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 4.0 V, I_C = 0			50	nA
ON CHARACTERISTICS						
h_{FE}	DC Current Gain	I_C = 100 μA, V_{CE} = 1.0 V I_C = 10 mA, V_{CE} = 1.0 V I_C = 150 mA, V_{CE} = 5.0 V*	80 100 100		 450 350	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10 mA, I_B = 1.0 mA I_C = 200 mA, I_B = 20 mA*			0.2 0.4	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 10 mA, I_B = 1.0 mA I_C = 200 mA, I_B = 20 mA*			0.85 1.0	V V
SMALL SIGNAL CHARACTERISTICS						
f_T	Current Gain - Bandwidth Product	V_{CE} = 20 V, I_C = 20 mA		300		MHz
C_{obo}	Output Capacitance	V_{CB} = 10 V, f = 1.0 MHz		4.5		pF
NF	Noise Figure	I_C = 100 μA, V_{CE} = 5.0 V, R_G = 2.0 kΩ, f = 1.0 kHz		2.5		dB

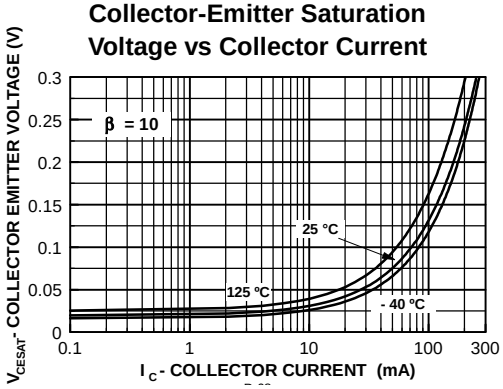
*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

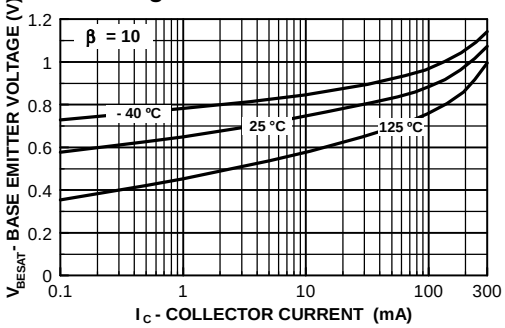


Collector-Emitter Saturation Voltage vs Collector Current

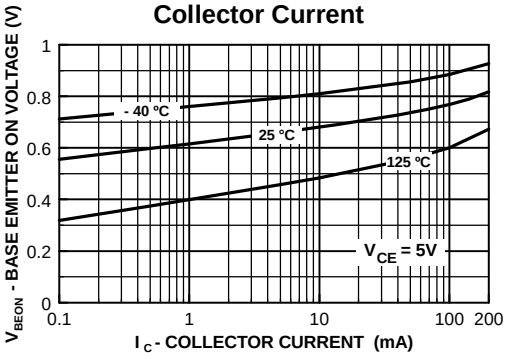


Typical Characteristics (continued)

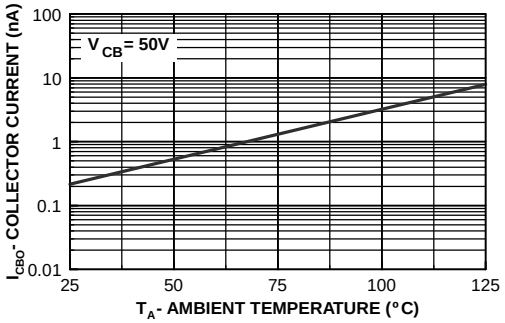
Base-Emitter Saturation Voltage vs Collector Current



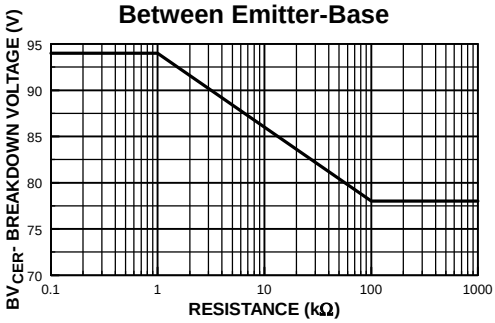
Base Emitter ON Voltage vs Collector Current



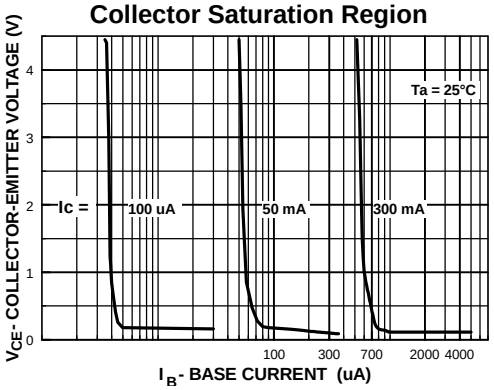
Collector-Cutoff Current vs. Ambient Temperature



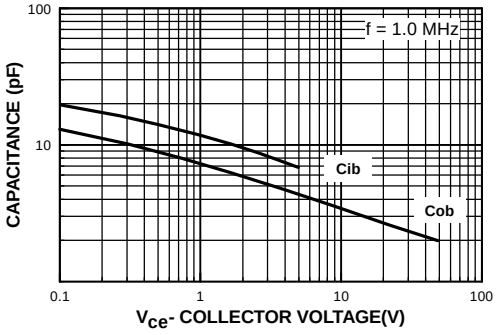
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Collector Saturation Region

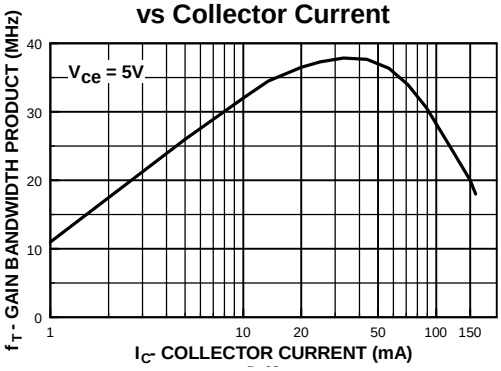


Input and Output Capacitance vs Reverse Voltage

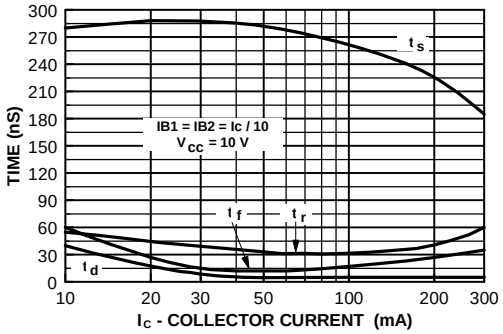


Typical Characteristics (continued)

Gain Bandwidth Product vs Collector Current



Switching Times vs Collector Current



Power Dissipation vs Ambient Temperature