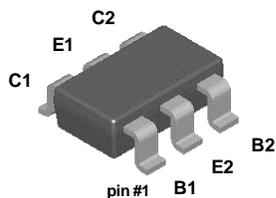


## FMB100



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

### NPN Multi-Chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 300 mA. Sourced from Process 10.

#### Absolute Maximum Ratings\* T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	45	V
V <sub>CBO</sub>	Collector-Base Voltage	75	V
V <sub>EBO</sub>	Emitter-Base Voltage	6.0	V
I <sub>C</sub>	Collector Current - Continuous	500	mA
T <sub>J</sub> , T <sub>stg</sub>	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<sub>A</sub> = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		FMB100	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	700	mW
		5.6	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	180	°C/W

# NPN Multi-Chip General Purpose Amplifier

(continued)

FMB100

## 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	$I_C = 10 \mu\text{A}, I_B = 0$	75			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1 \text{ mA}, I_E = 0$	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	$V_{CB} = 60 \text{ V}$			50	nA
$I_{CES}$	Collector Cutoff Current	$V_{CE} = 40 \text{ V}$			50	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 4 \text{ V}$			50	nA

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain	$I_C = 100 \mu\text{A}, V_{CE} = 1.0 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V}^*$ $I_C = 150 \text{ mA}, V_{CE} = 5.0 \text{ V}^*$	80 100 100 100		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

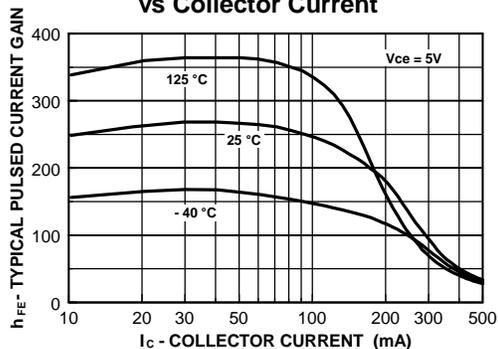
### SMALL SIGNAL CHARACTERISTICS

$f_T$	Current Gain - Bandwidth Product	$V_{CE} = 20 \text{ V}, I_C = 20 \text{ mA}$		300		MHz
$C_{obo}$	Output Capacitance	$V_{CB} = 5.0 \text{ V}, f = 1.0 \text{ MHz}$		3.5		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

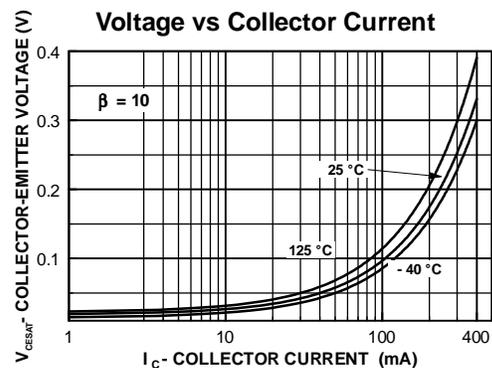
\*Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## Typical Characteristics

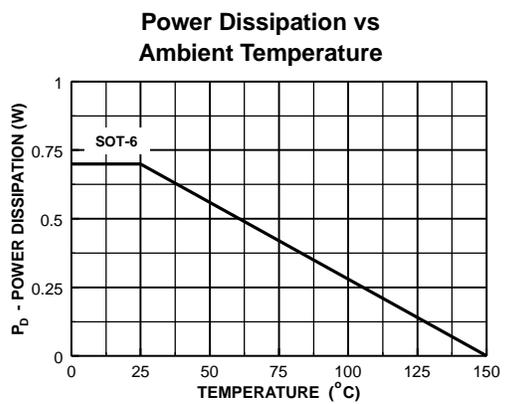
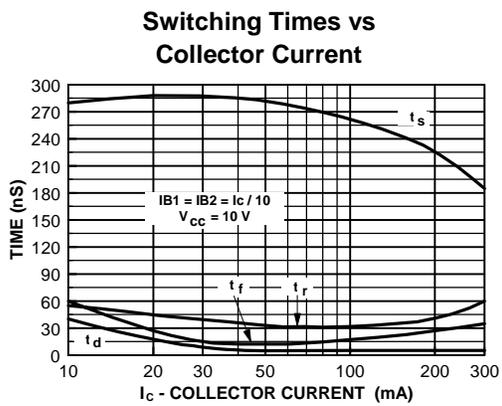
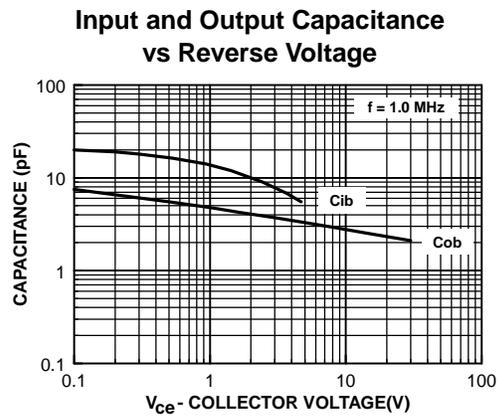
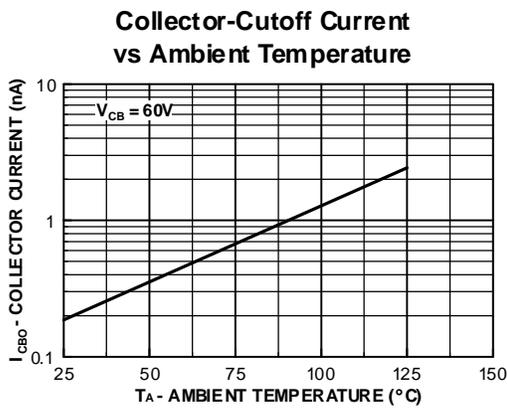
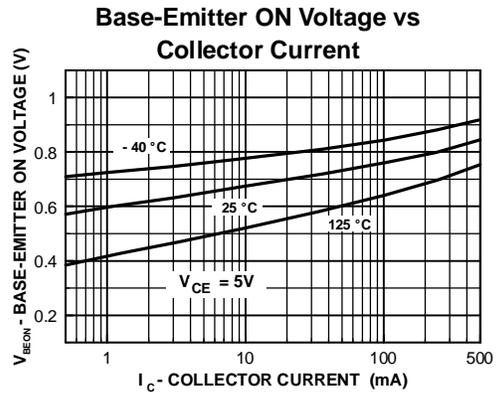
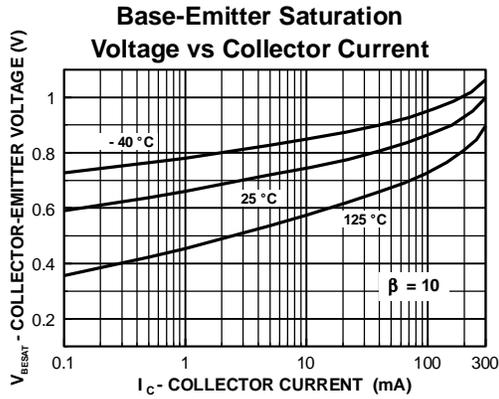
Typical Pulsed Current Gain vs Collector Current



Collector-Emitter Saturation Voltage vs Collector Current



Typical Characteristics (continued)



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