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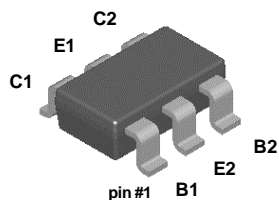


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## FMB100



**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\*

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

Symbol	Parameter	Value	Units
$V_{CE0}$	Collector-Emitter Voltage	45	V
$V_{CBO}$	Collector-Base Voltage	75	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	$^\circ\text{C}$

\*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
		FMB100	
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	700	mW
		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)

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

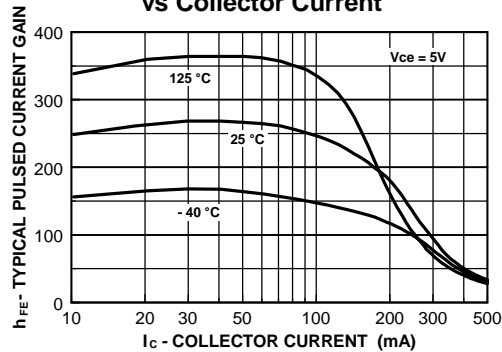
### SMALL SIGNAL CHARACTERISTICS

$f_T$	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

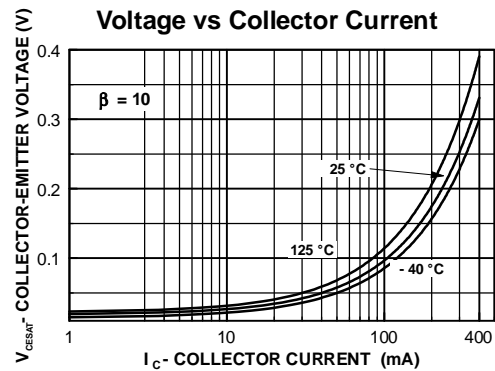
\*Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## Typical Characteristics

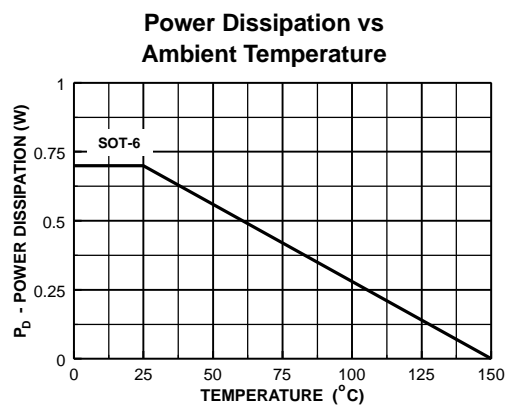
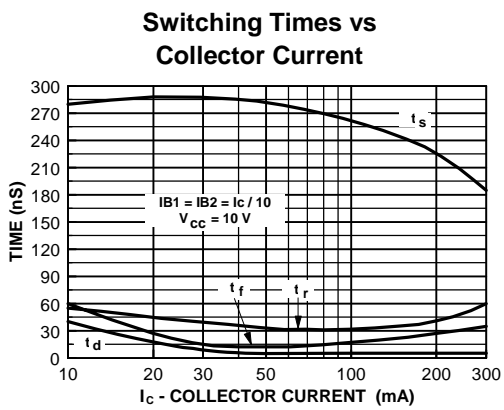
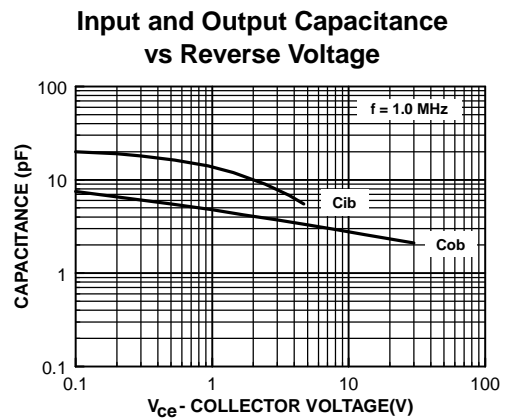
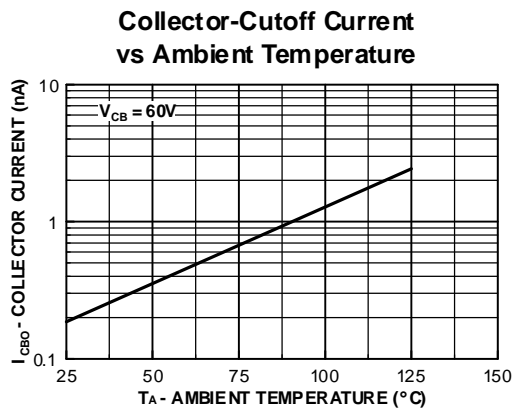
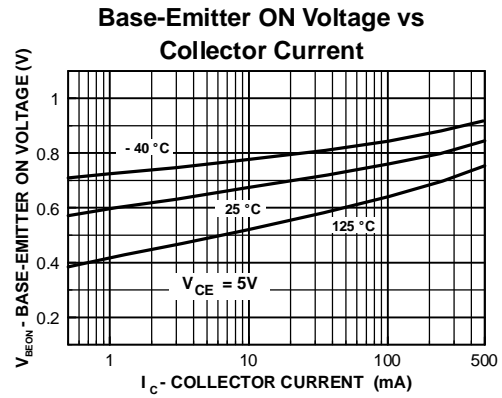
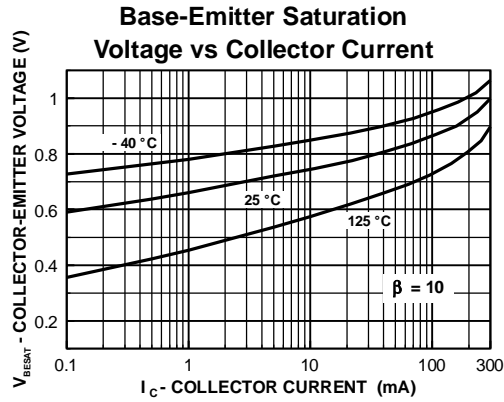
**Typical Pulsed Current Gain vs Collector Current**



**Collector-Emitter Saturation Voltage vs Collector Current**



Typical Characteristics (continued)



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