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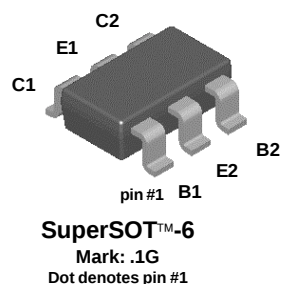


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FMBA06



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_{CEO}	Collector-Emitter Voltage	80	V
V_{CBO}	Collector-Base Voltage	80	V
V_{EBO}	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 Derate above 25°C	700	mW
		5.6	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	180	$^\circ\text{C/W}$

NPN Multi-Chip General Purpose Amplifier
(continued)

Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

V _{(BR)CEO}	Collector-Emitter Sustaining Voltage*	I _C = 1.0 mA, I _B = 0	80			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 100 µA, I _C = 0	4.0			V
I _{CEO}	Collector-Cutoff Current	V _{CE} = 60 V, I _B = 0			0.1	µA
I _{CBO}	Collector-Cutoff Current	V _{CB} = 80 V, I _E = 0			0.1	µA

ON CHARACTERISTICS

h _{FE}	DC Current Gain	I _C = 10 mA, V _{CE} = 1.0 V I _C = 100 mA, V _{CE} = 1.0 V	100 100			
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 100 mA, I _B = 10 mA			0.25	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 100 mA, V _{CE} = 1.0 V			1.2	V

SMALL SIGNAL CHARACTERISTICS

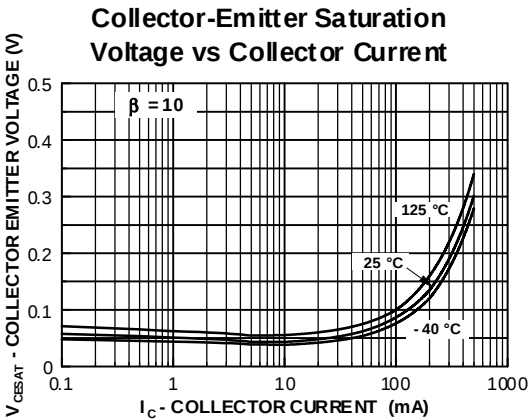
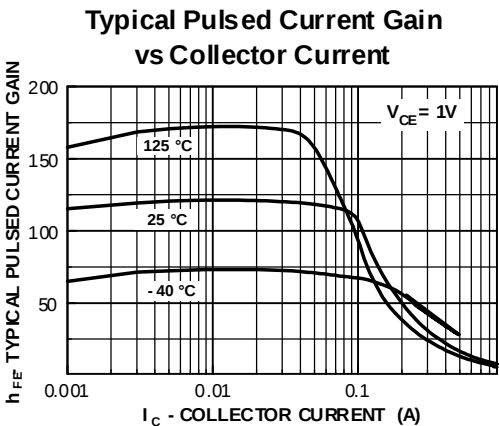
f _T	Current Gain - Bandwidth Product	I _C = 10 mA, V _{CE} = 2.0 V, f = 100 MHz		100		MHz
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*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%

Spice Model

NPN (Is=8.324f Xti=3 Eg=1.11 Vaf=100 Bf=12.16K Ne=1.368 Ise=73.27f Ikf=.1096 Xtb=1.5 Br=11.1 Nc=2 Isc=0 Ikr=0 Rc=.25 Cjc=18.36p Mjc=.3843 Vjc=.75 Fc=.5 Cje=55.61p Mje=.3834 Vje=.75 Tr=72.15n Tf=516.1p Itf=.5 Vtf=4 Xtf=6 Rb=10)

Typical Characteristics



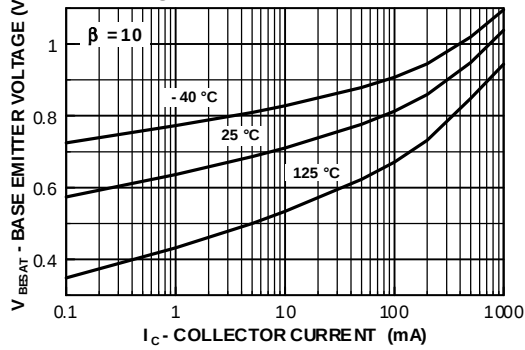
NPN Multi-Chip General Purpose Amplifier

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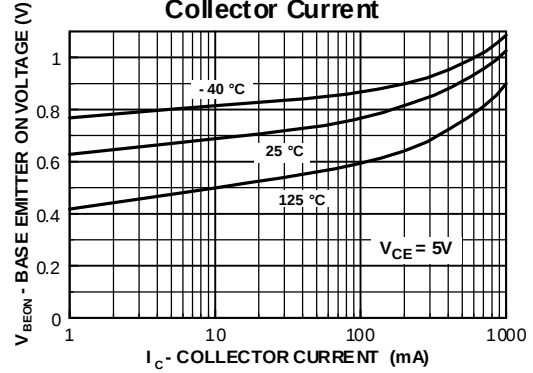
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Typical Characteristics (continued)

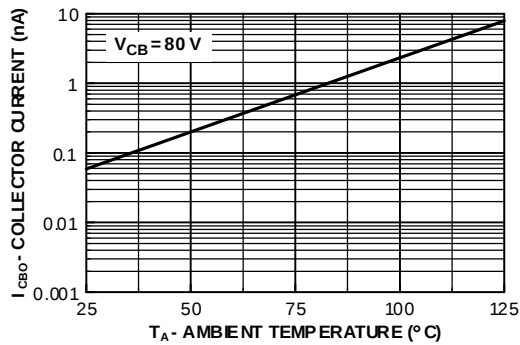
Base-Emitter Saturation
Voltage vs Collector Current



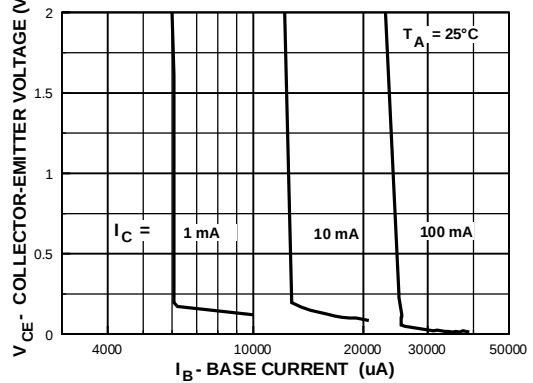
Base Emitter ON Voltage vs
Collector Current



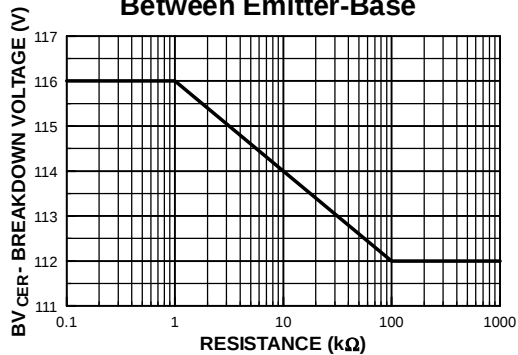
Collector-Cutoff Current
vs Ambient Temperature



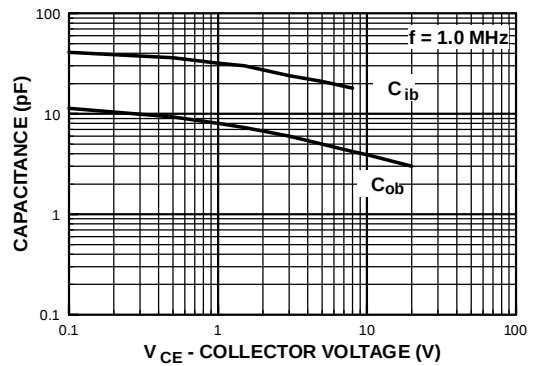
Collector Saturation Region



Collector-Emitter Breakdown
Voltage with Resistance
Between Emitter-Base



Input and Output Capacitance
vs Reverse Voltage



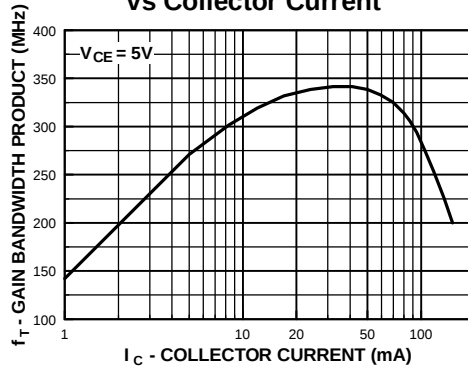
NPN Multi-Chip General Purpose Amplifier

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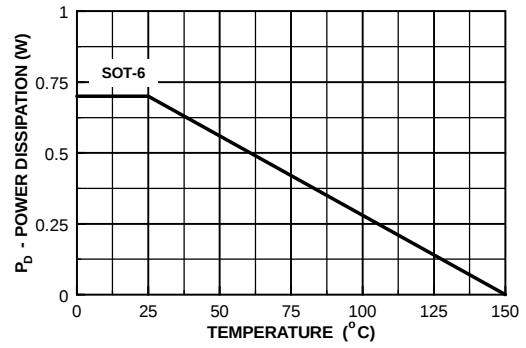
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Typical Characteristics (continued)

Gain Bandwidth Product
vs Collector Current



Power Dissipation vs
Ambient Temperature



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