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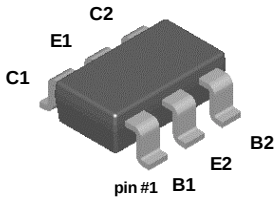
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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

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FAIRCHILD
SEMICONDUCTOR TM

FMBA06



SuperSOT™-6
Mark: .1G
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 33.

Absolute Maximum Ratings*

T_A = 25°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	°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
		FMBA06	
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

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NPN 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						
$V_{(BR)CEO}$	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

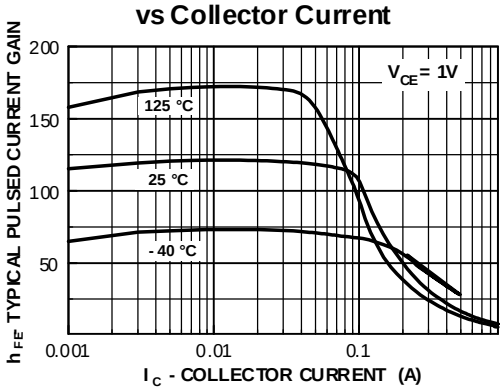
*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%

Spice Model

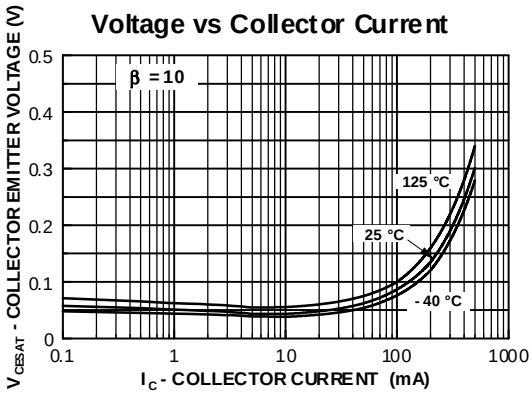
NPN (Is=8.324f Xti=3 Eg=1.11 Vaf=100 Bf=12.16K Ne=1.368 Ise=73.27f Ikf=.1096 Xtb=1.5 Br=11.1 Nc=2 Isc=0 Ikr=0 Rc=.25 Cjc=18.36p Mjc=.3843 Vjc=.75 Fc=.5 Cje=55.61p Mje=.3834 Vje=.75 Tr=72.15n Tf=516.1p Itf=.5 Vtf=4 Xtf=6 Rb=10)

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

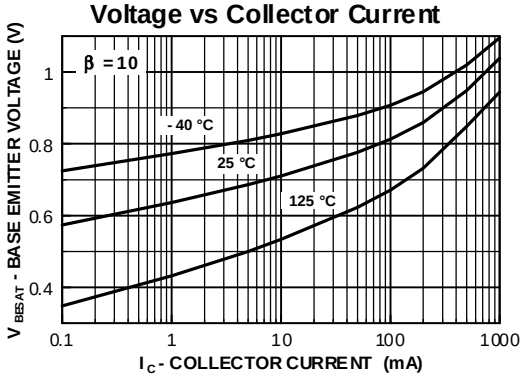


Collector-Emitter Saturation Voltage vs Collector Current

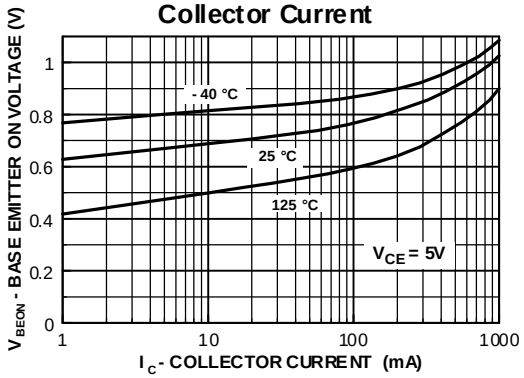


Typical Characteristics (continued)

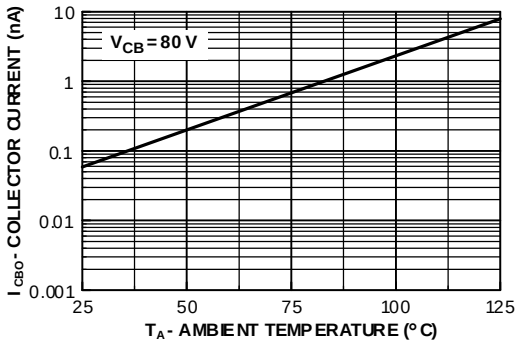
Base-Emitter Saturation Voltage vs Collector Current



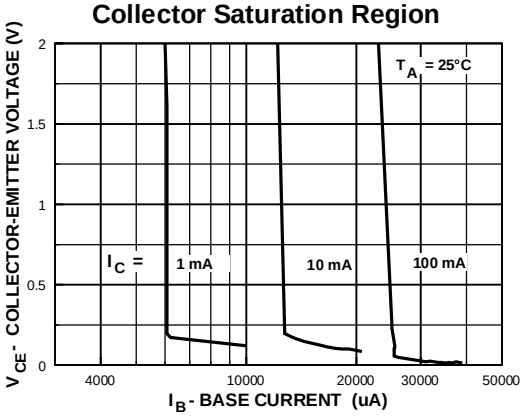
Base Emitter ON Voltage vs Collector Current



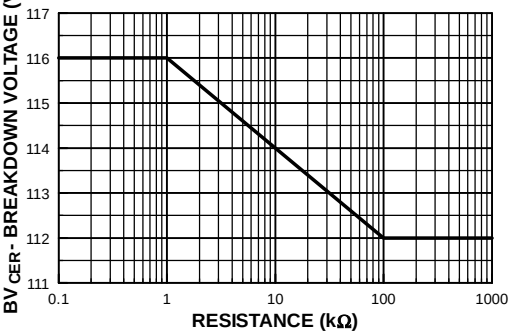
Collector-Cutoff Current vs Ambient Temperature



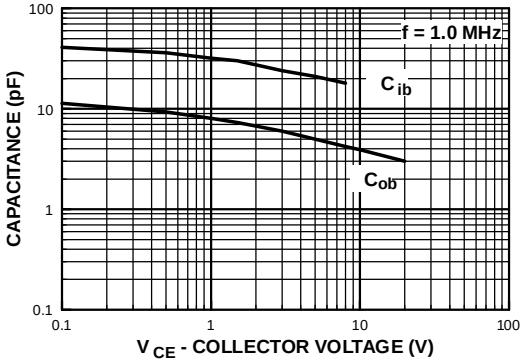
Collector Saturation Region



Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

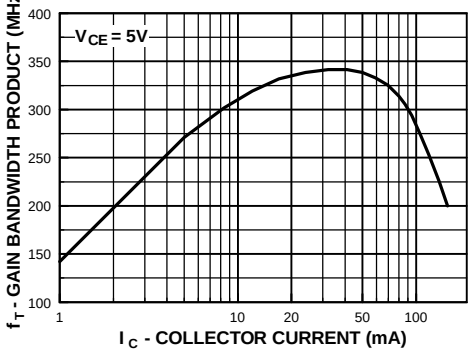


Input and Output Capacitance vs Reverse Voltage

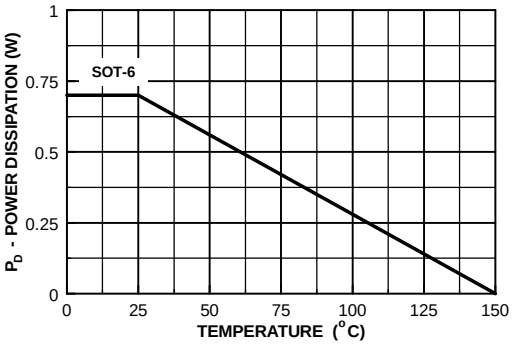


Typical Characteristics (continued)

Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature



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