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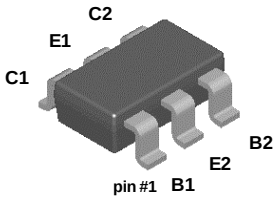
FMBA14



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

NPN Multi-Chip Darlington Transistor

This device is designed for applications requiring extremely high current gain at collector currents to 1.0 A. Sourced from Process 05.

Absolute Maximum Ratings* T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage	30	V
V_{CBO}	Collector-Base Voltage	30	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current - Continuous	1.2	A
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
		FMBA14	
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 Darlington Transistor
(continued)

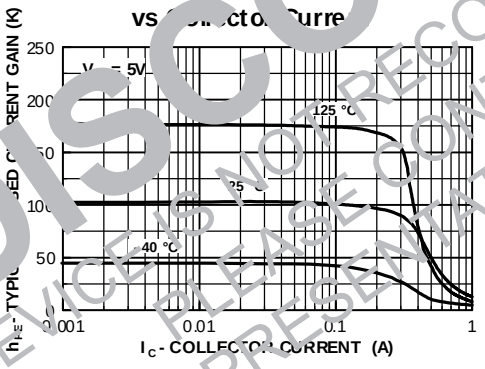
Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C = 100 µA, I_B = 0	30			V
I_{CBO}	Collector-Cutoff Current	V_{CB} = 30 V, I_E = 0			100	nA
I_{EBO}	Emitter-Cutoff Current	V_{EB} = 10 V, I_C = 0			100	nA
ON CHARACTERISTICS*						
h_{FE}	DC Current Gain	I_C = 10 mA, V_{CE} = 5.0 V I_C = 100 mA, V_{CE} = 5.0 V	10K 20K			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 100 mA, I_B = 0.1 mA			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = 100 mA, V_{CE} = 5.0 V			2.0	V
SMALL SIGNAL CHARACTERISTICS						
h_{fe}	Small Signal Current Gain	I_C = 10 mA, V f = 100 MHz	1.25			MHz

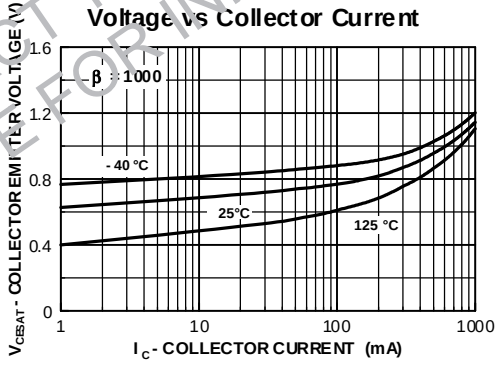
*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%

Typical Characteristics

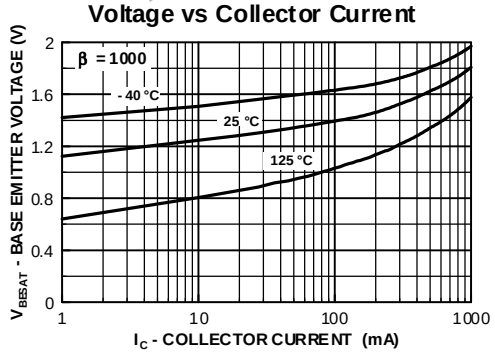
Typical Pulsed Current Gain vs Collector Current



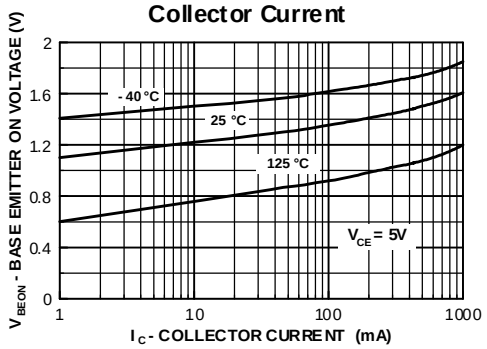
Collector-Emitter Saturation Voltage vs Collector Current



Base-Emitter Saturation Voltage vs Collector Current



Base Emitter ON Voltage vs Collector Current



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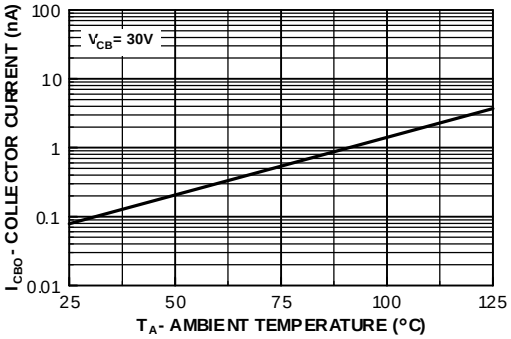
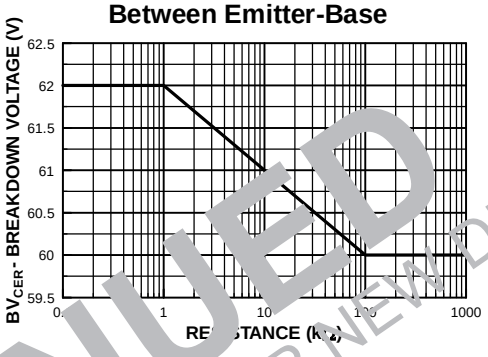
Typical Characteristics (continued)

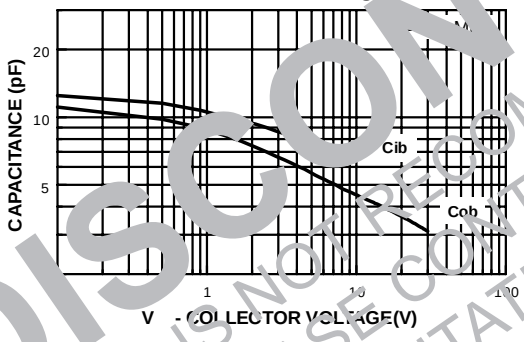
Collector-Cutoff Current vs Ambient Temperature



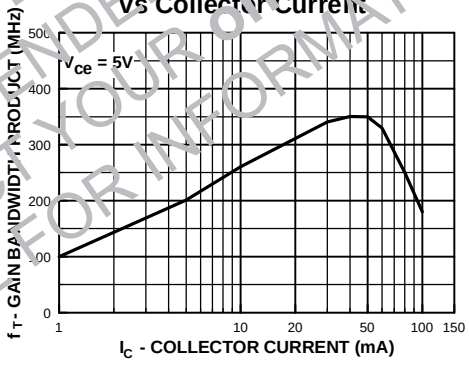
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



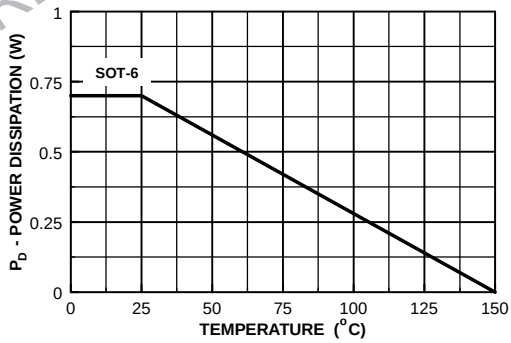
Input and Output Capacitance vs Reverse Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature



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Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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