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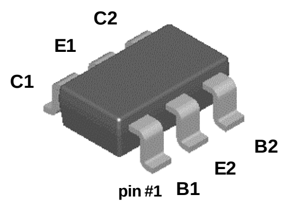
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes 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.

FAIRCHILD
SEMICONDUCTOR ™

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

NPN Multi-Chip Darlington Transistor
(continued)

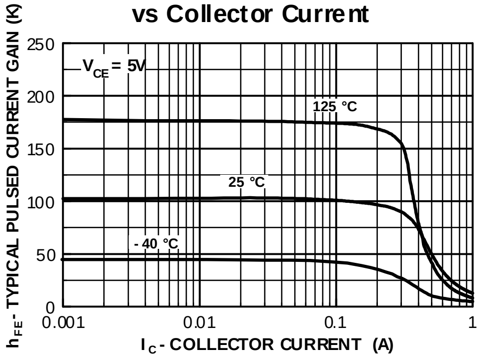
Electrical Characteristics
TA = 25°C unless otherwise noted

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_{CE} = 5.0 V, f = 100 MHz	1.25			MHz

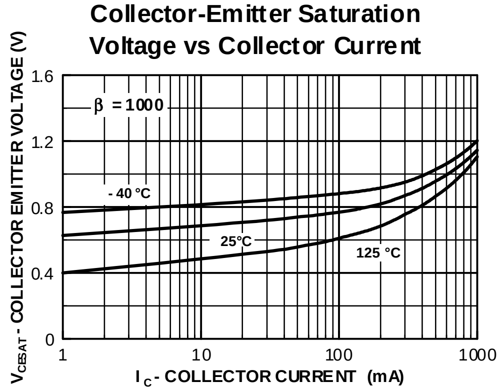
*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

Typical Characteristics

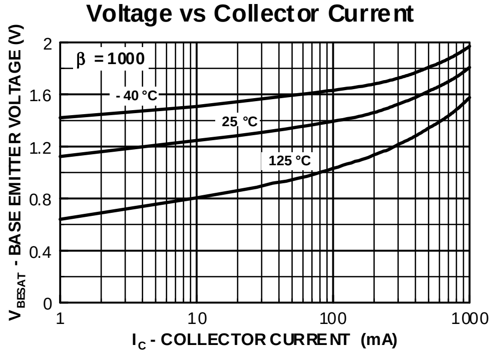
Typical Pulsed Current Gain vs Collector Current



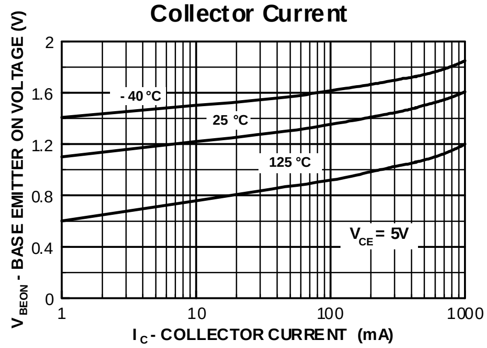
Collector-Emitter Saturation Voltage vs Collector Current



Base-Emitter Saturation Voltage vs Collector Current

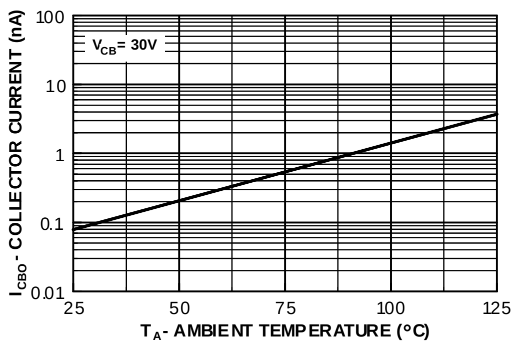


Base Emitter ON Voltage vs Collector Current

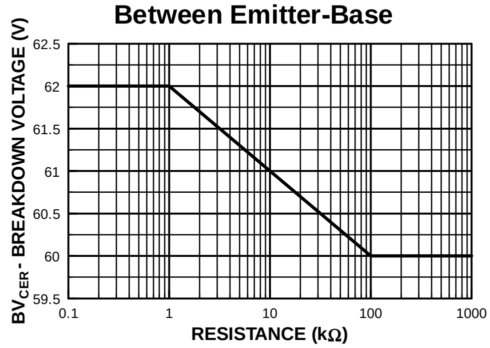


Typical Characteristics (continued)

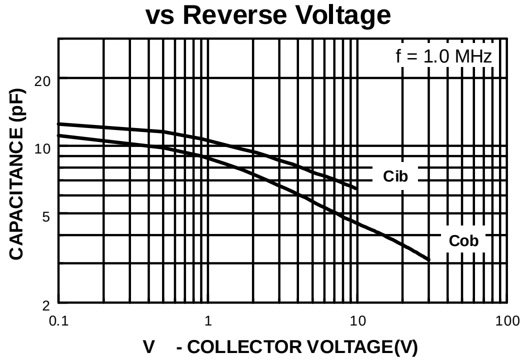
Collector-Cutoff Current vs Ambient Temperature



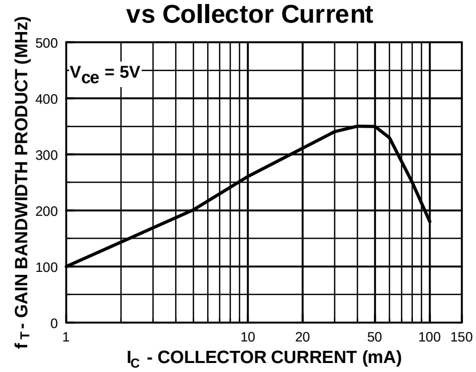
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



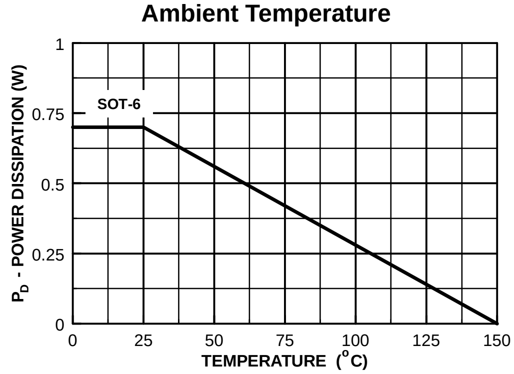
Input and Output Capacitance vs Reverse Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature



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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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