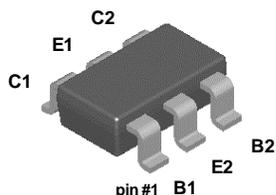


## FMBA14



**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<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CES</sub>	Collector-Emitter Voltage	30	V
V <sub>CBO</sub>	Collector-Base Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	10	V
I <sub>C</sub>	Collector Current - Continuous	1.2	A
T <sub>J</sub> , T <sub>stg</sub>	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<sub>A</sub> = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		FMBA14	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	700	mW
		5.6	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	180	°C/W

# NPN Multi-Chip Darlington Transistor

(continued)

FMBA14

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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### OFF CHARACTERISTICS

$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C = 100 \mu A, I_B = 0$	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\*

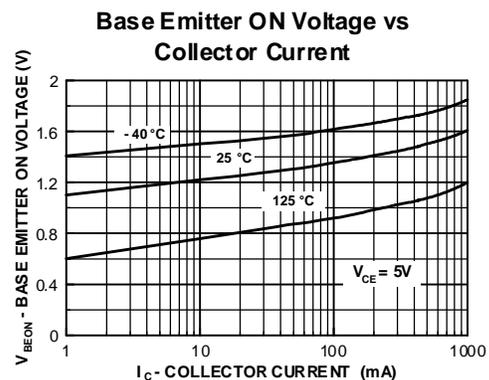
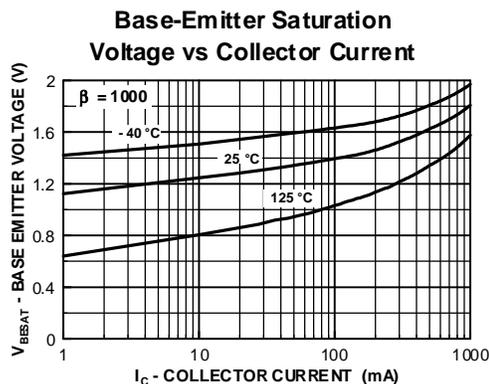
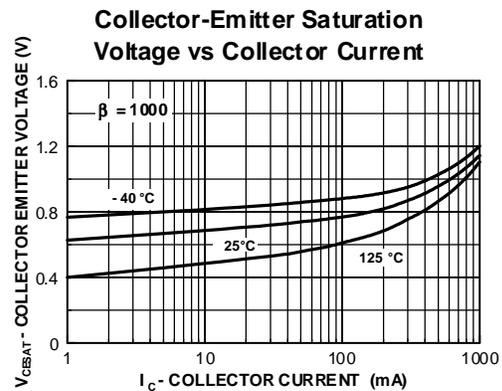
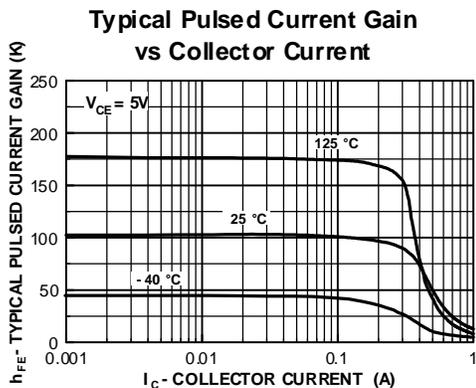
$h_{FE}$	DC Current Gain	$I_C = 10 mA, V_{CE} = 5.0 V$ $I_C = 100 mA, V_{CE} = 5.0 V$	10K 20K			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 mA, I_B = 0.1 mA$			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 100 mA, V_{CE} = 5.0 V$			2.0	V

### SMALL SIGNAL CHARACTERISTICS

$h_{fe}$	Small Signal Current Gain	$I_C = 10 mA, V_{CE} = 5.0 V,$ $f = 100 MHz$	1.25			MHz
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\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$

## Typical Characteristics



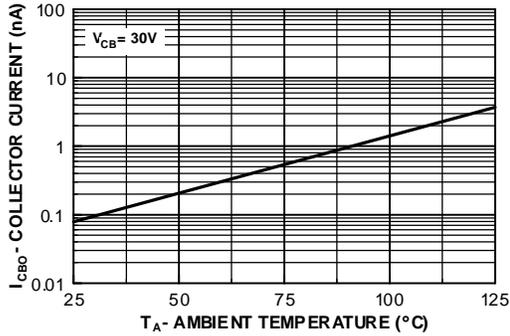
# NPN Multi-Chip Darlington Transistor

(continued)

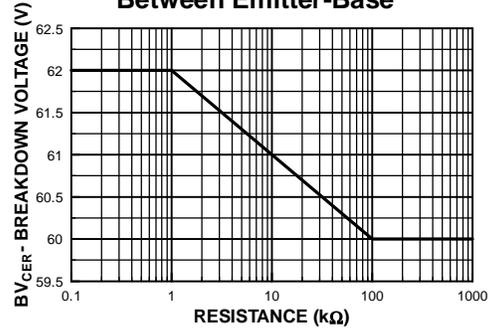
FMBA14

## Typical Characteristics (continued)

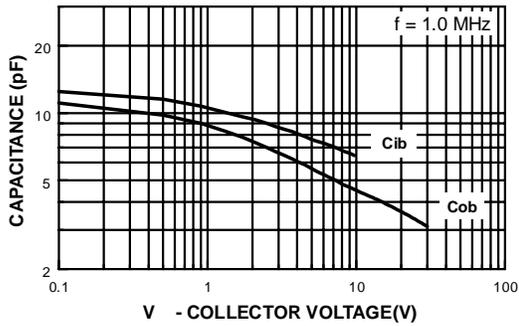
**Collector-Cutoff Current vs Ambient Temperature**



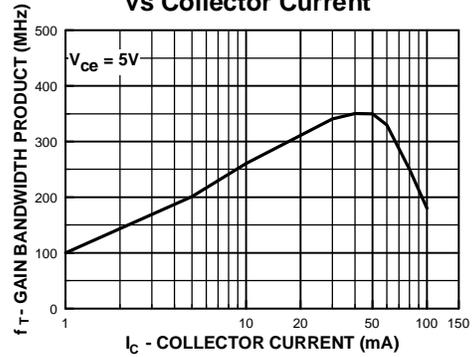
**Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base**



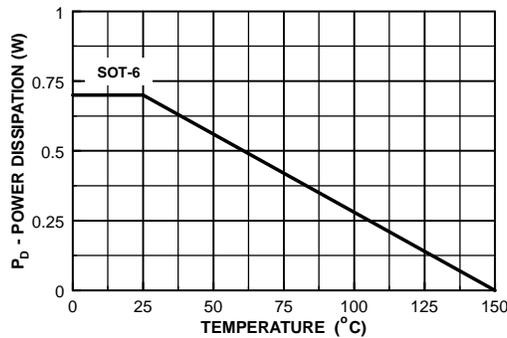
**Input and Output Capacitance vs Reverse Voltage**



**Gain Bandwidth Product vs Collector Current**



**Power Dissipation vs Ambient Temperature**



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