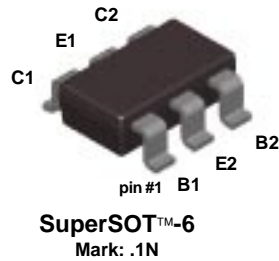


FMBA14



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*

$T_A = 25^\circ\text{C}$ 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	$^\circ\text{C}$

*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
		FMBA14	
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 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*

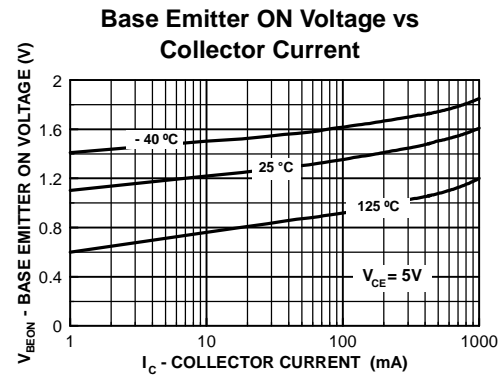
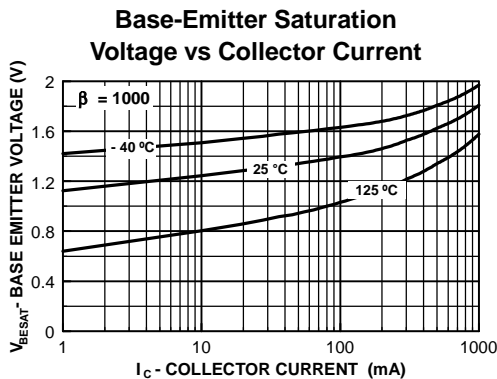
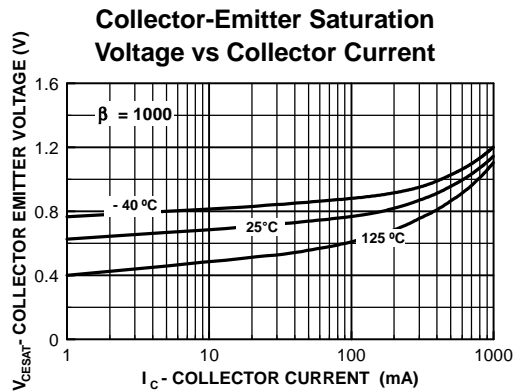
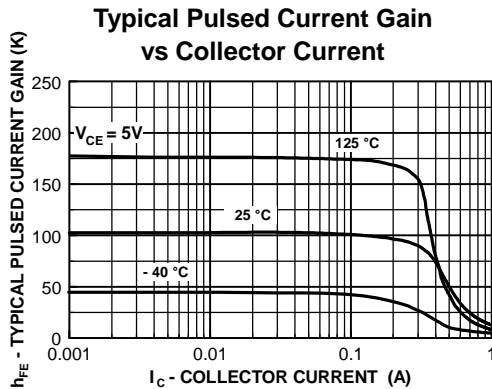
h_{FE}	DC Current Gain	$I_C = 10 mA, V_{CE} = 5.0 V$ $I_C = 100 mA, V_{CE} = 5.0 V$	10K 20K			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 mA, I_B = 0.1 mA$			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 100 mA, V_{CE} = 5.0 V$			2.0	V

SMALL SIGNAL CHARACTERISTICS

f_T	Current Gain - Bandwidth Product	$I_C = 10 mA, V_{CE} = 10 V,$ $f = 100 MHz$		200		MHz
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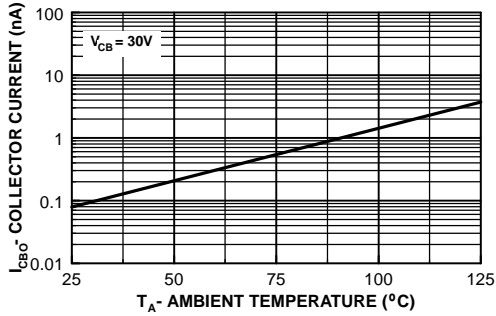
*Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2.0\%$

Typical Characteristics

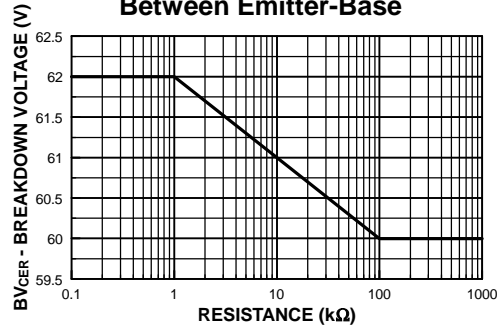


Typical Characteristics (continued)

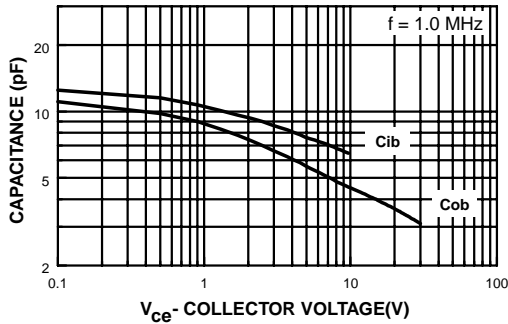
Collector-Cutoff Current vs Ambient Temperature



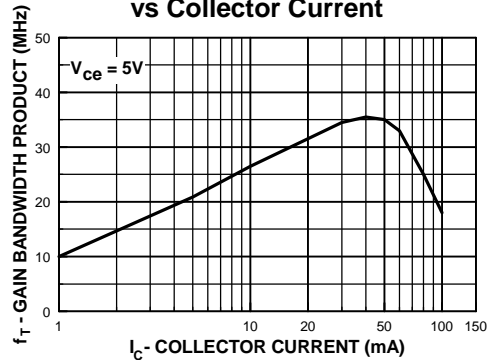
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Input and Output Capacitance vs Reverse Voltage



Gain Bandwidth Product vs Collector Current



Power Dissipation vs Ambient Temperature

