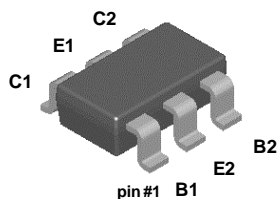


FMBA56



SuperSOT™-6
Mark: .2G
Dot denotes pin #1

PNP Multi-Chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 300 mA. Sourced from Process 73.

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CES}	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	$^\circ\text{C}$

*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.
- 3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

Thermal Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Characteristic	Max	Units
		FMBA56	
P_D	Total Device Dissipation	700	mW
	Derate above 25°C	5.6	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	180	$^\circ\text{C}/\text{W}$

PNP Multi-Chip General Purpose Amplifier

(continued)

FMBA56

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1.0 \text{ mA}, I_B = 0$	80			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	80			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \text{ } \mu\text{A}, I_C = 0$	4.0			V
I_{CEO}	Collector-Cutoff Current	$V_{CE} = 60 \text{ V}, I_B = 0$			0.1	μA
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 80 \text{ V}, I_E = 0$			0.1	μA

ON CHARACTERISTICS

h_{FE}	DC Current Gain	$I_C = 10 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V}$	100 100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$			0.25	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V}$			1.2	V

SMALL SIGNAL CHARACTERISTICS

f_T	Current Gain - Bandwidth Product	$I_C = 100 \text{ mA}, V_{CE} = 1.0 \text{ V},$ $f = 100 \text{ MHz}$	50			MHz
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*Pulse Test: Pulse Width $\leq 300 \text{ } \mu\text{s}$, Duty Cycle $\leq 2.0\%$

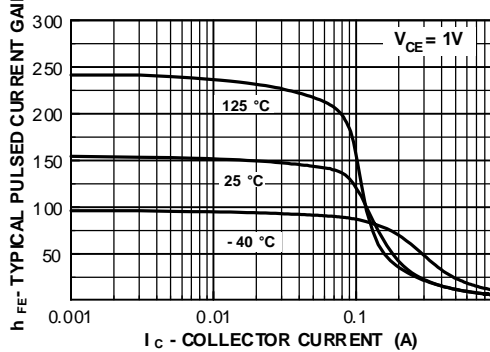
NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

Spice Model

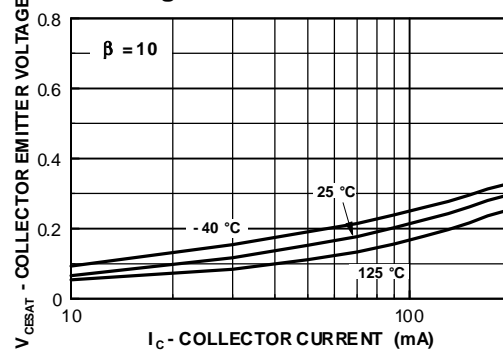
PNP (Is=12.27p Xti=3 Eg=1.11 Vaf=100 Bf=91.63 Ne=1.531 Ise=12.27p Ikf=1.009 Xtb=1.5 Br=1.287 Nc=2 Isc=0 Ikr=0 Rc=.6 Cjc=48.28p Mjc=.5615 Vjc=.75 Fc=.5 Cje=106.7p Mje=.5168 Vje=.75 Tr=496.3n Tf=865.8p Itf=.2 Vtf=2 Xtf=.8 Rb=10)

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

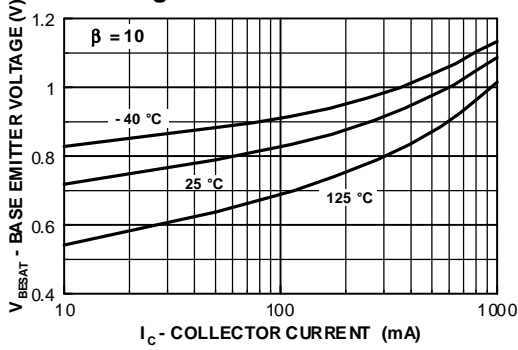


Collector-Emitter Saturation Voltage vs Collector Current

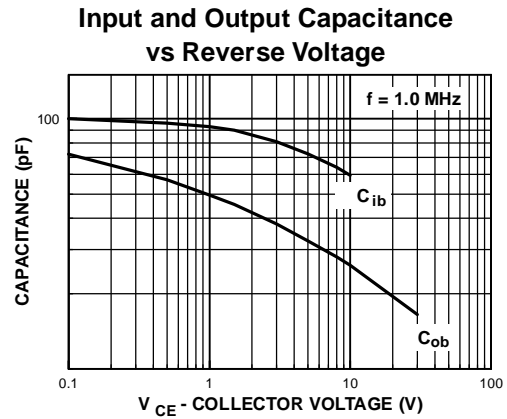


Typical Characteristics (continued)

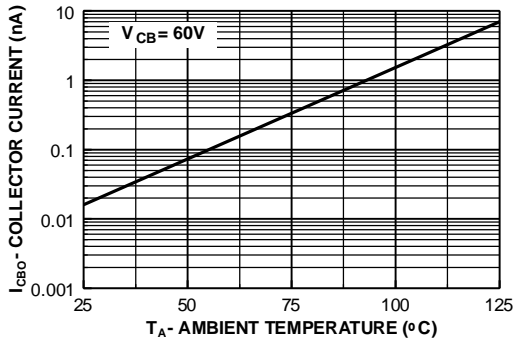
Base-Emitter Saturation Voltage vs Collector Current



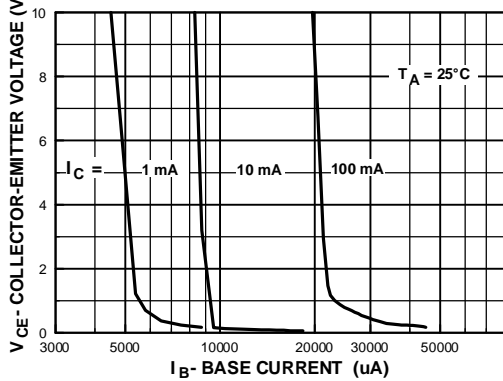
Base Emitter ON Voltage vs



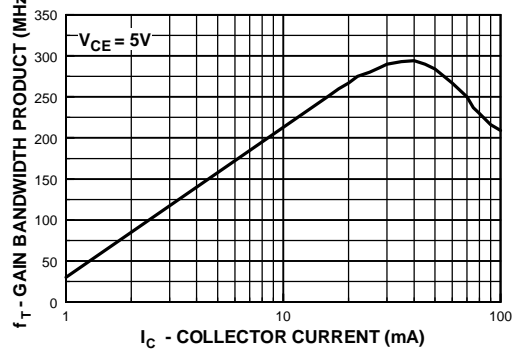
Collector-Cutoff Current vs Ambient Temperature



Collector Saturation Region



Gain Bandwidth Product vs Collector Current

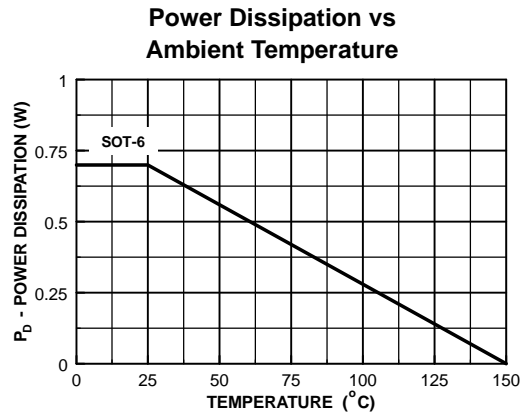


PNP Multi-Chip General Purpose Amplifier

(continued)

FMBA56

Typical Characteristics (continued)



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EnSigna™	OPTOLOGIC™	SMART START™	
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PRODUCT STATUS DEFINITIONS

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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.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.