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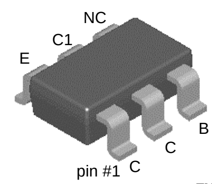
FMBSA06

NPN General Purpose Amplifier

- This device is designed for general purpose amplifier applications at collector currents to 300 mA.
- Sourced from Process 12.



SuperSOT™-6 single
Mark: .1G1

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

Symbol	Parameter	Value	Units
V_{CEO}	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 ~ 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.

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Sustaining Voltage *	I_C = 1.0mA, I_B = 0	80		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 100μA, I_C = 0	4.0		V
I_{CEO}	Collector Cut-off Current	V_{CE} = 60V, I_B = 0		0.1	μA
I_{CBO}	Collector Cut-off Current	V_{CB} = 80V, I_E = 0		0.1	μA
On Characteristics					
h_{FE}	DC Current Gain	I_C = 10mA, V_{CE} = 1.0V I_C = 100mA, V_{CE} = 1.0V	100 100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 100mA, I_B = 10mA		0.25	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = 10mA, V_{CE} = 1.0V		1.2	V
Small Signal Characteristics					
f_T	Current Gain Bandwidth Product	I_C = 10mA, V_{CE} = 2.0V, f = 100MHz	100		MHz

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

Thermal Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation *	700	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient, total	180	°C/W

* Device mounted on a 1 in 2 pad of 2 oz copper.

Typical Characteristics

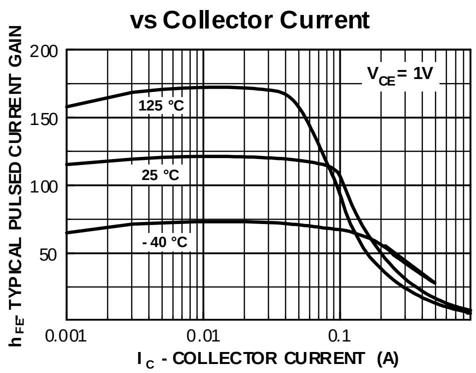


Figure 1. Typical Pulsed Current Gain vs Collector Current

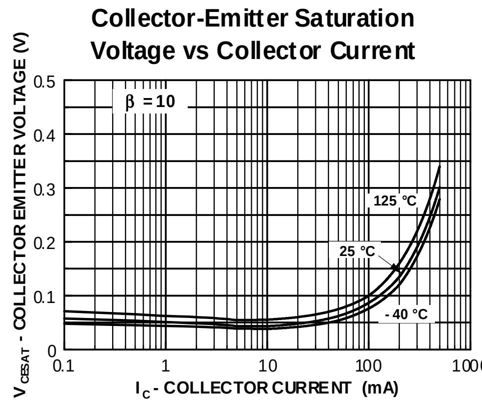


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

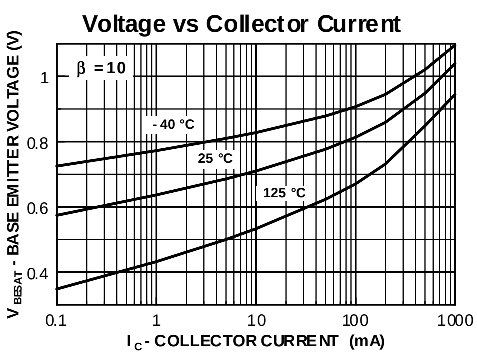


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

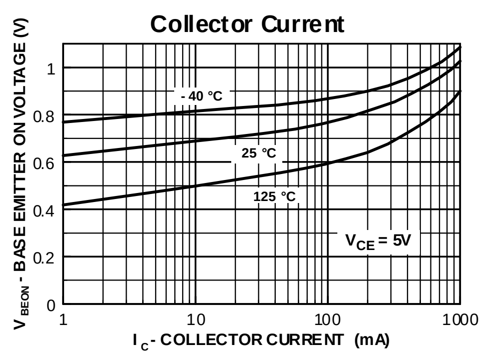


Figure 4. Base-Emitter On Voltage vs Collector Current

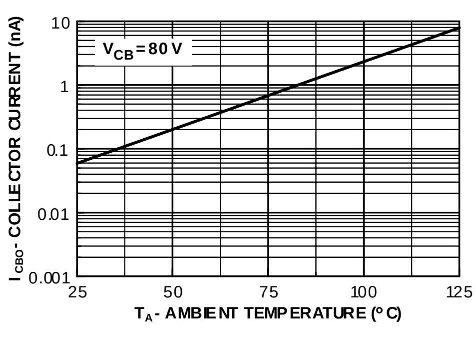


Figure 5. Collector Cutoff Current vs Ambient Temperature

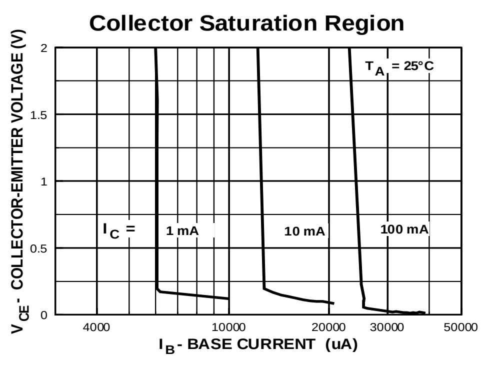


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

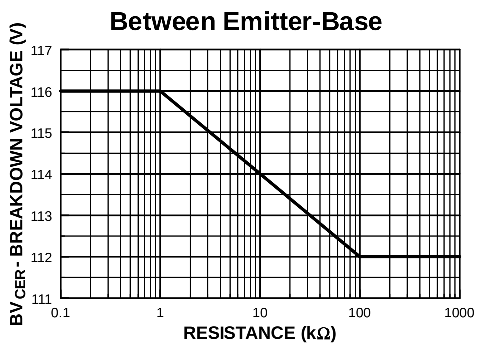


Figure 7. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

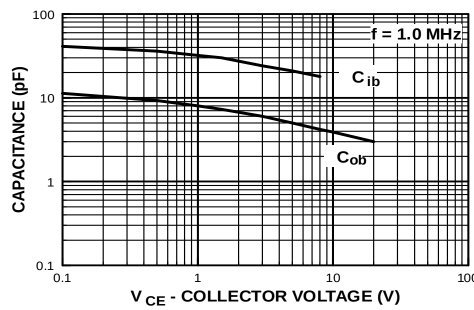


Figure 8. Input and Output Capacitance vs Reverse Voltage

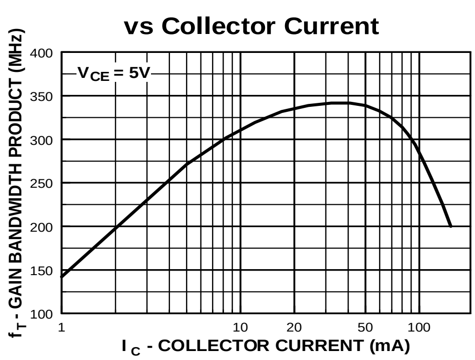
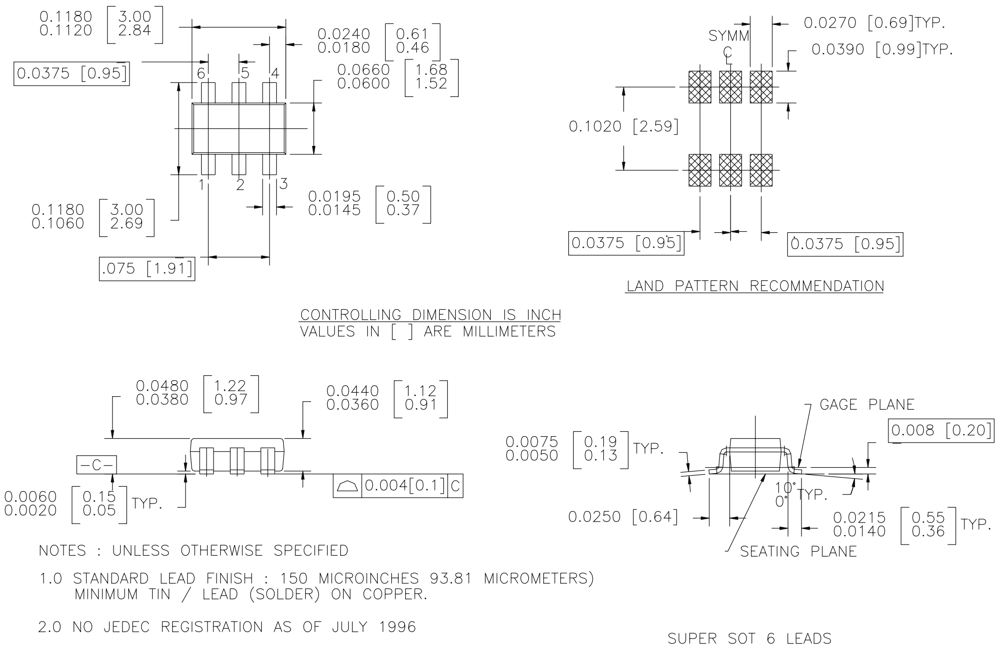


Figure 9. Gain Bandwidth Product vs Collector Current

Package Dimensions

SuperSOT™-6



Dimensions in Millimeters

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CROSSVOLT™	GlobalOptoisolator™	MicroPak™	QFET®	SuperSOT™-8
DOME™	GTO™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	HiSeC™	MSX™	QT Optoelectronics™	TinyLogic®
E^2CMOS™	I^2C™	MSXPro™	Quiet Series™	TINYOPTO™
EnSigna™	*i-Lo*™	OCX™	RapidConfigure™	TruTranslation™
FACT™	ImpliedDisconnect™	OCXPro™	RapidConnect™	UHC™
FACT Quiet Series™		OPTOLOGIC®	µSerDes™	UltraFET®
Across the board. Around the world.™		OPTOPLANAR™	SILENT SWITCHER®	VCX™
The Power Franchise®		PACMAN™	SMART START™	
Programmable Active Droop™		POP™	SPM™	

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Definition of Terms

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