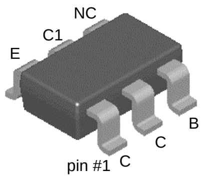
FAIRCHILD
SEMICONDUCTOR®

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

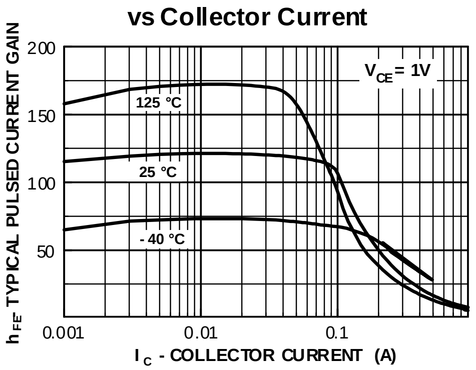


Figure 1. Typical Pulsed Current Gain vs Collector Current

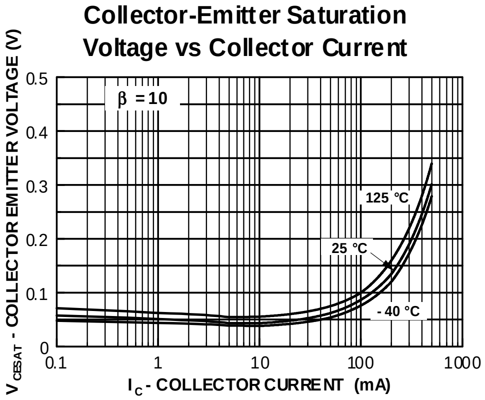


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

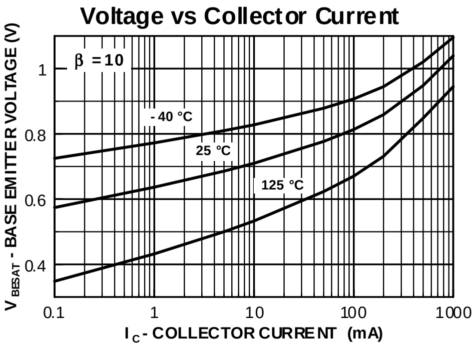


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

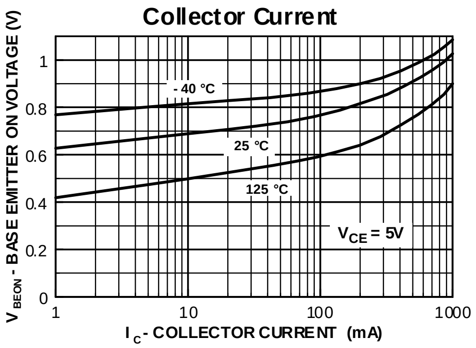


Figure 4. Base-Emitter On Voltage vs Collector Current

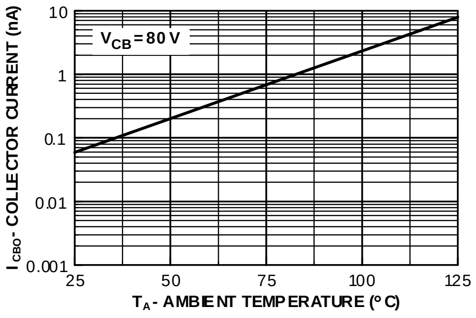


Figure 5. Collector Cutoff Current vs Ambient Temperature

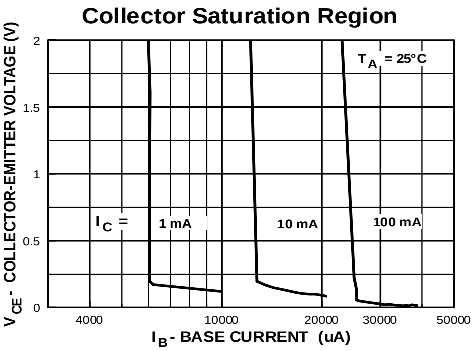


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

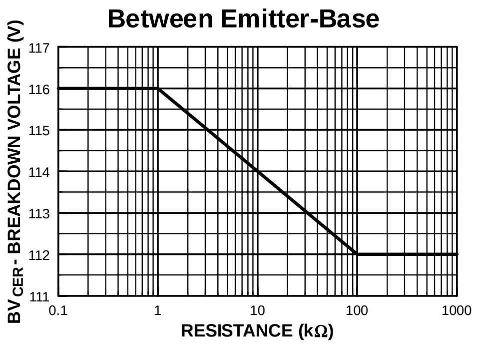


Figure 7. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

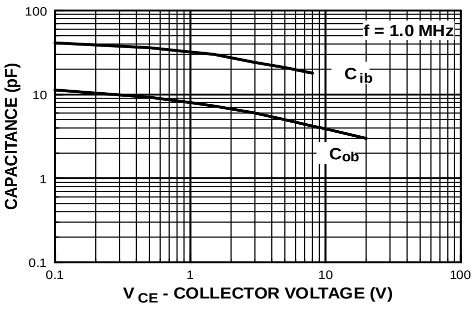


Figure 8. Input and Output Capacitance vs Reverse Voltage

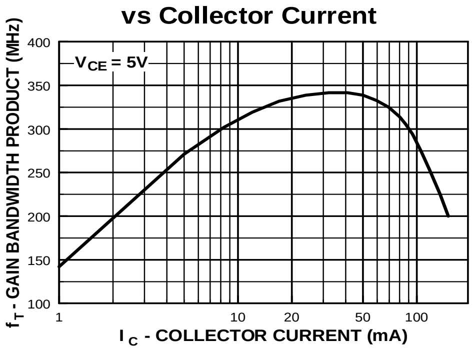
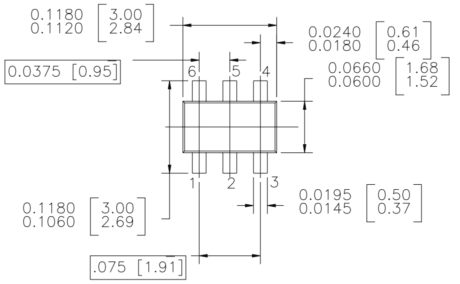
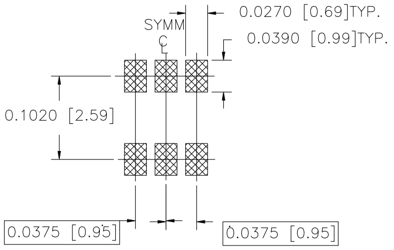


Figure 9. Gain Bandwidth Product vs Collector Current

Package Dimensions

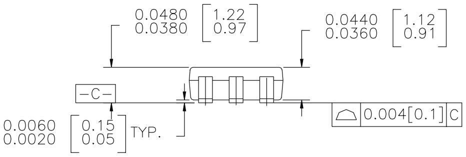
SuperSOTTM-6

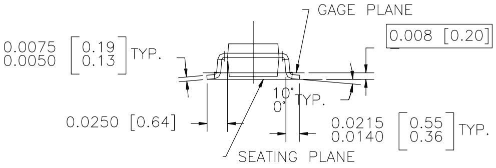




LAND PATTERN RECOMMENDATION

CONTROLLING DIMENSION IS INCH
VALUES IN [ ] ARE MILLIMETERS





NOTES : UNLESS OTHERWISE SPECIFIED

1.0 STANDARD LEAD FINISH : 150 MICROINCHES 93.81 MICROMETERS)
MINIMUM TIN / LEAD (SOLDER) ON COPPER.

2.0 NO JEDEC REGISTRATION AS OF JULY 1996

SUPER SOT 6 LEADS

Dimensions in Millimeters

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POP™
Power247™
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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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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