



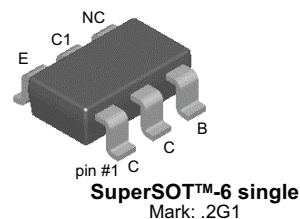
# THE DATASHEET OF FMBSA56



# FMBSA56

## PNP 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
$V_{CEO}$	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	$^\circ\text{C}$

\* 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.

## Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)CEO}$	Collector-Emitter Sustaining Voltage *	$I_C = -1.0\text{mA}, I_B = 0$	-80		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\mu\text{A}, I_E = 0$	-80		
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\mu\text{A}, I_C = 0$	-4.0		V
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = -60\text{V}, I_B = 0$		-0.1	$\mu\text{A}$
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -80\text{V}, I_E = 0$		-0.1	$\mu\text{A}$
<b>On Characteristics</b>					
$h_{FE}$	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
<b>Small Signal Characteristics</b>					
$f_T$	Current Gain Bandwidth Product	$I_C = -10\text{mA}, V_{CE} = -2.0\text{V},$ $f = 100\text{MHz}$	50		MHz

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## Thermal Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

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

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

# Typical Characteristics

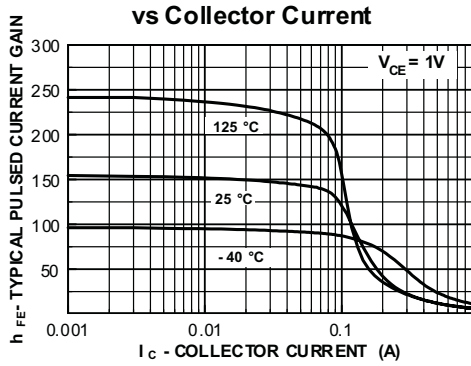


Figure 1. Typical Pulsed Current Gain vs Collector Current

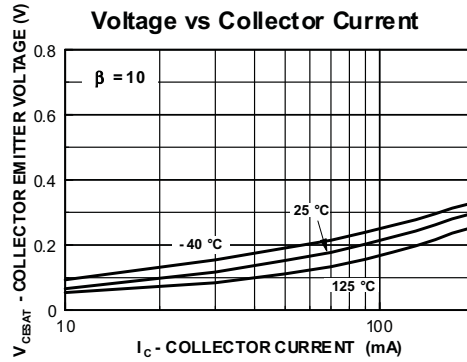


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

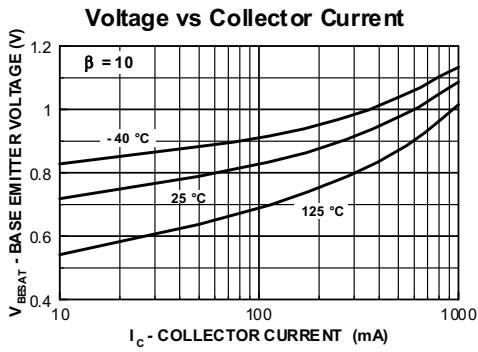


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

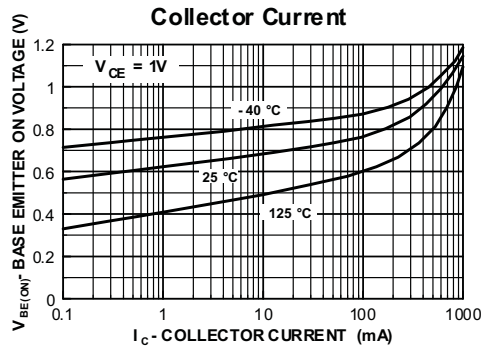


Figure 4. Base-Emitter On Voltage vs Collector Current

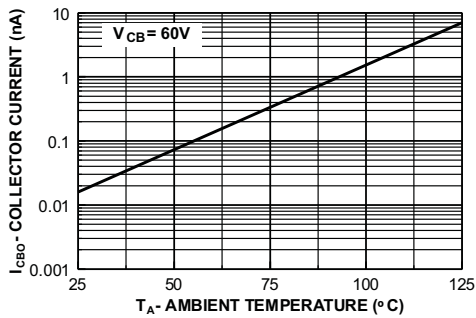


Figure 5. Collector Cutoff Current vs Ambient Temperature

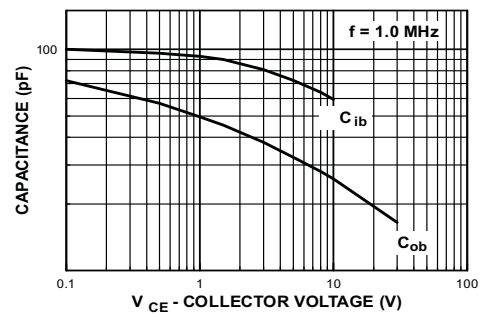


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

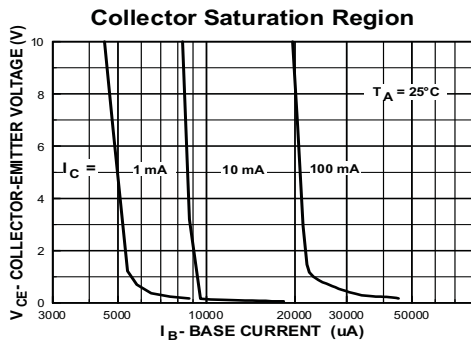


Figure 7. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

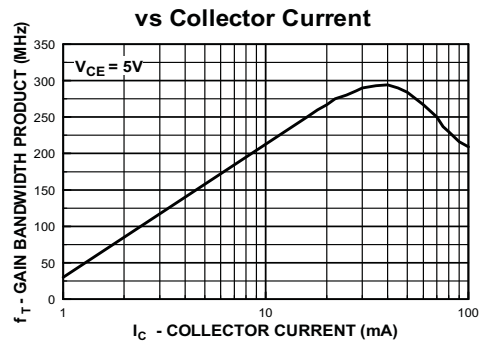
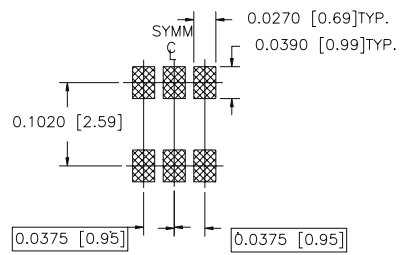
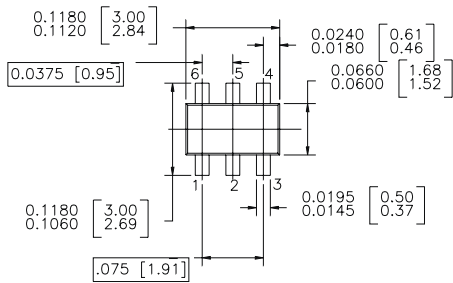


Figure 8. Input and Output Capacitance vs Reverse Voltage

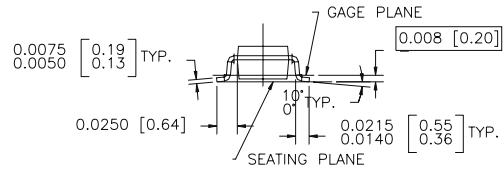
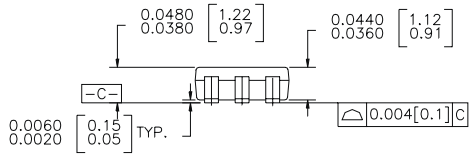
# Package Dimensions

## SuperSOT™-6



LAND PATTERN RECOMMENDATION

CONTROLLING DIMENSION IS INCH  
VALUES IN [ ] ARE MILLIMETERS



SUPER SOT 6 LEADS

- 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

Dimensions in Millimeters

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