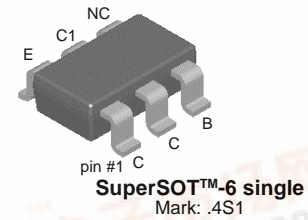




FMB5401

PNP General Purpose Amplifier

- This device is designed as a general purpose amplifier and switch for applications requiring high voltage.



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	-150	V
V_{CBO}	Collector-Base Voltage	-160	V
V_{EBO}	Emitter-Base Voltage	-5.0	V
I_C	Collector Current - Continuous	-600	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:

- These ratings are based on a maximum junction temperature of 150 degrees C.
- 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
Off Characteristics					
BV_{CEO}	Collector-Emitter Breakdown Voltage *	$I_C = -1.0\text{mA}, I_B = 0$	-150		V
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = -100\mu\text{A}, I_E = 0$	-160		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5.0		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = -120\text{V}, I_E = 0$ $V_{CB} = -120\text{V}, I_E = 0, T_a = 100^\circ\text{C}$		-50 -50	nA μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -3.0\text{V}, I_C = 0$		-50	nA
On Characteristics *					
h_{FE}	DC Current Gain	$I_C = -1.0\text{mA}, V_{CE} = -5.0\text{V}$ $I_C = -10\text{mA}, V_{CE} = -5.0\text{V}$ $I_C = -50\text{mA}, V_{CE} = -5.0\text{V}$	50 60 50	240	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$		-0.2 -0.5	V V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$		-1.0 -1.0	V V
Small Signal Characteristics					
f_T	Current Gain Bandwidth Product	$I_C = -10\text{mA}, V_{CE} = -10\text{V},$ $f = 100\text{MHz}$	100	300	MHz
C_{ob}	Output Capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		6.0	pF
N_F	Noise Figure	$I_C = -250\mu\text{A}, V_{CE} = -5.0\text{V}, R_S = 1.0\text{K}\Omega$ $f = 10\text{Hz to } 15.7\text{KHz}$		8.0	dB

* 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	$^{\circ}\text{C}/\text{W}$

* Device mounted on a 1 in 2 pad of 2 oz coppe

Typical Characteristics

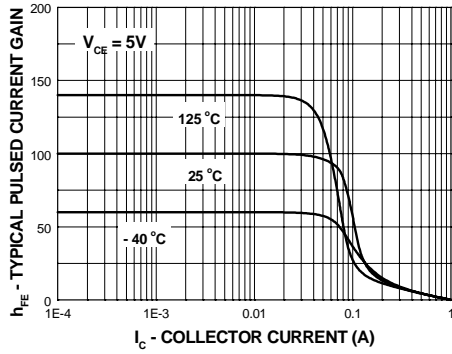


Figure 1. Typical Pulsed Current Gain vs Collector Current

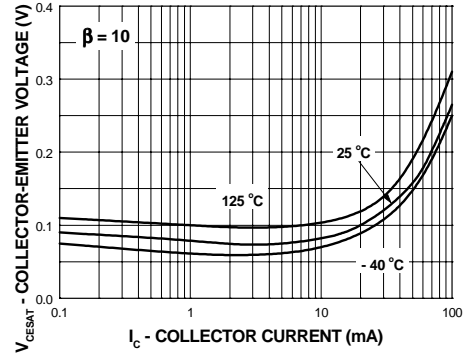


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

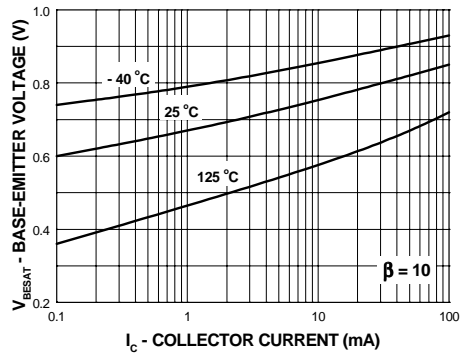


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

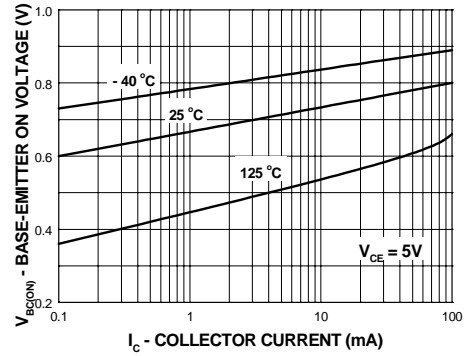


Figure 4. Base-Emitter On Voltage vs Collector Current

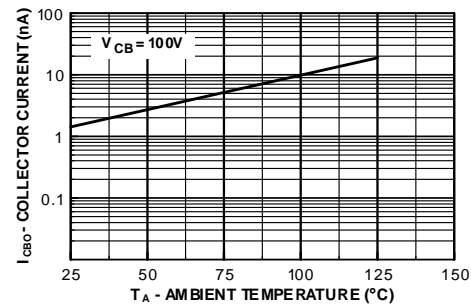


Figure 5. Collector-Cutoff Current vs Ambient Temperature

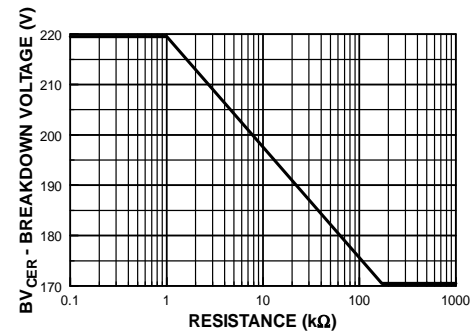


Figure 6. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

Typical Characteristics (Continued)

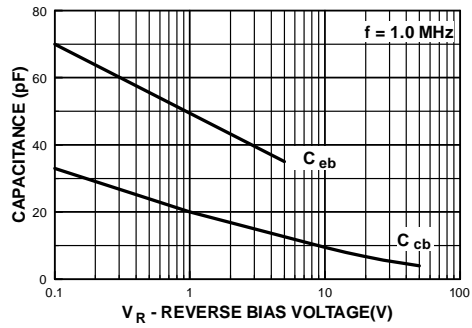
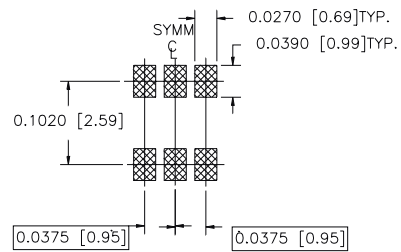
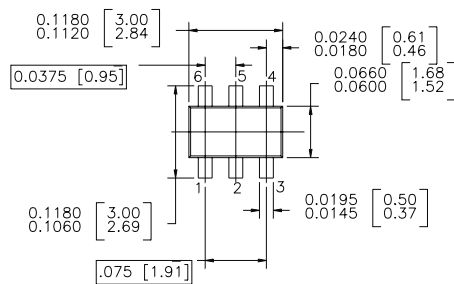


Figure 7. Input and Output Capacitance vs Reverse Voltage

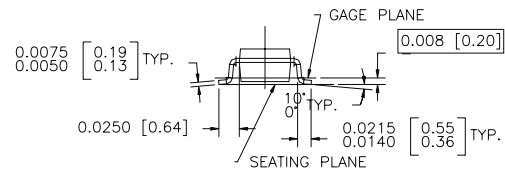
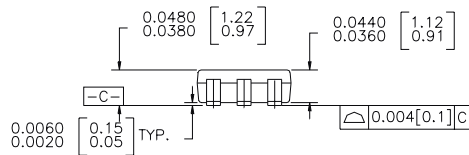
Package Dimensions

SuperSOT™-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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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.

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