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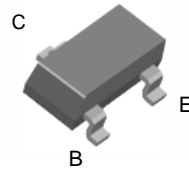
September 2018

# FSB660A

## PNP Low Saturation Transistor

### Description

These devices are designed with high-current gain and low saturation voltage with collector currents up to 2 A continuous.



SuperSOT™-3 (SOT-23)

### Ordering Information

Part Number	Marking	Package	Packing Method
FSB660A	660A	SSOT 3L	Tape and Reel

### Absolute Maximum Ratings<sup>(1),(2)</sup>

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	-60	V
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current - Continuous	-2	A
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ\text{C}$

#### Notes:

1. These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
2. These are steady-state limits. ON Semiconductor should be consulted on applications involving pulsed or low-duty cycle operations.

**Thermal Characteristics<sup>(3)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Max.	Unit
$P_D$	Total Device Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	$^\circ\text{C}/\text{W}$

**Note:**

3. PCB size: FR-4 76 x 114 x 1.57 mm<sup>3</sup> (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

**Electrical Characteristics<sup>(4)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{ mA}$	-60		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\text{ }\mu\text{A}$	-60		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\text{ }\mu\text{A}$	-5		V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -30\text{ V}$		-100	nA
		$V_{CB} = -30\text{ V}, T_A = 100^\circ\text{C}$		-10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = -4\text{ V}$		-100	nA
$h_{FE}$	DC Current Gain	$I_C = -100\text{ mA}, V_{CE} = -2\text{ V}$	70		
		$I_C = -500\text{ mA}, V_{CE} = -2\text{ V}$	250	550	
		$I_C = -1\text{ A}, V_{CE} = -2\text{ V}$	80		
		$I_C = -2\text{ A}, V_{CE} = -2\text{ V}$	40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1\text{ A}, I_B = -100\text{ mA}$		-300	mV
		$I_C = -2\text{ A}, I_B = -200\text{ mA}$		-300	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -1\text{ A}, I_B = -100\text{ mA}$		-1.25	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -1\text{ A}, V_{CE} = -2\text{ V}$		-1	V
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$		30	pF
$f_T$	Transition Frequency	$I_C = -100\text{ mA}, V_{CE} = -5\text{ V}, f = 100\text{ MHz}$	75		MHz

**Note:**

4. Pulse test: pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

## Typical Performance Characteristics

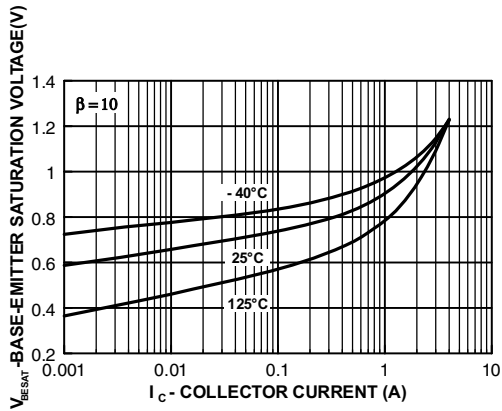


Figure 1. Base-Emitter Saturation Voltage vs. Collector Current

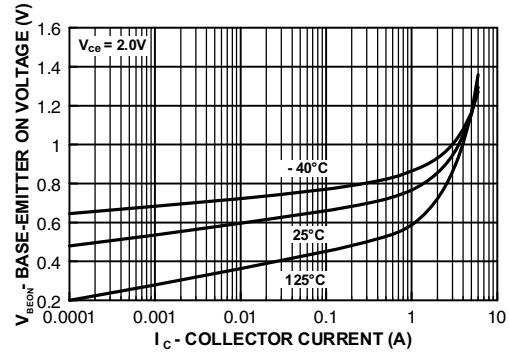


Figure 2. Base-Emitter On Voltage vs. Collector Current

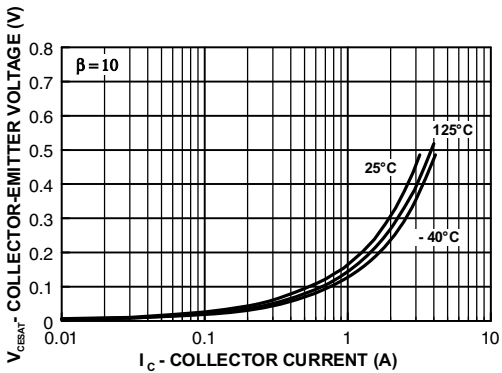


Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current

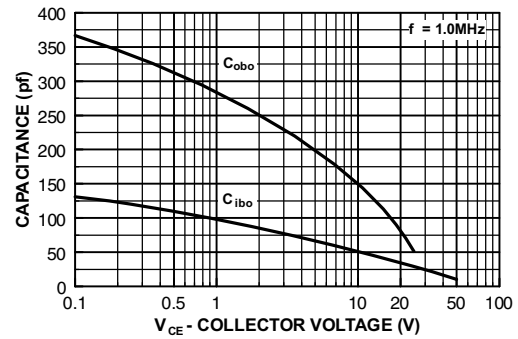


Figure 4. Input/Output Capacitance vs. Reverse Bias Voltage

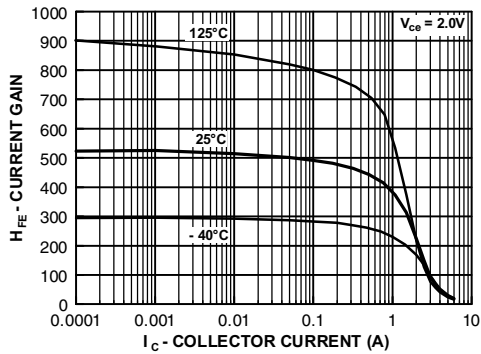
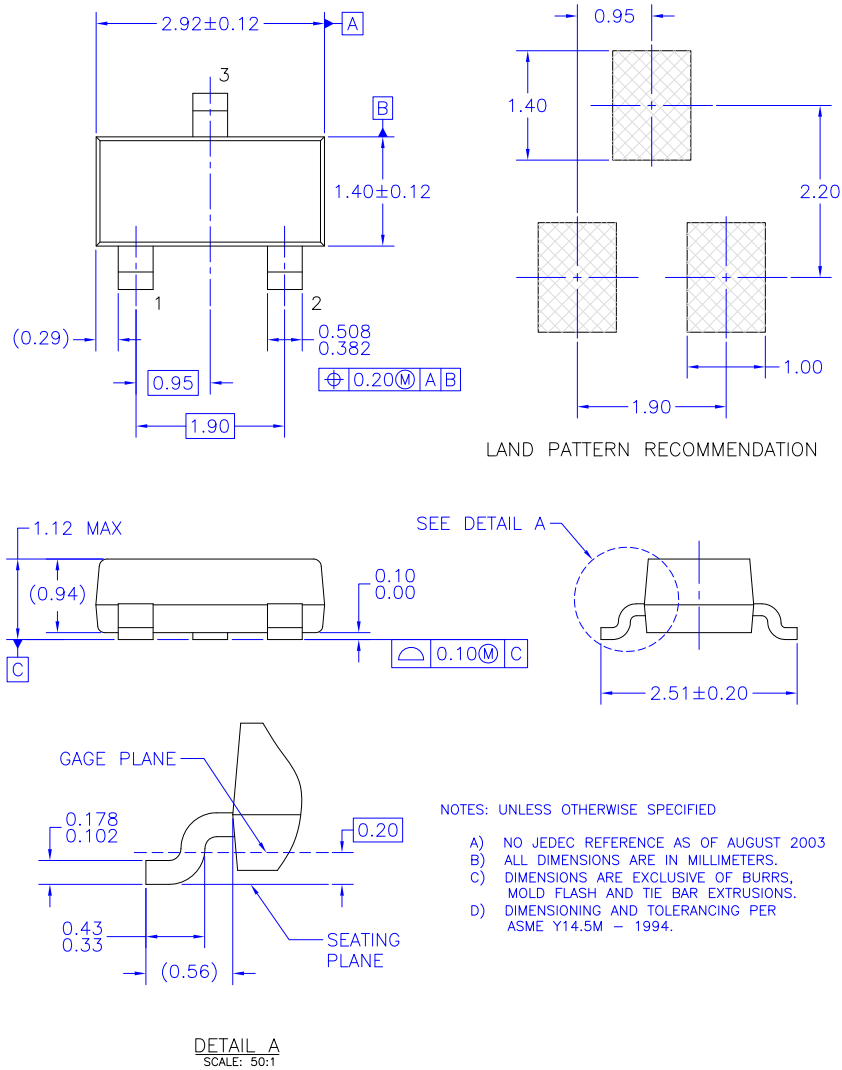


Figure 5. Current Gain vs. Collector Current

## Physical Dimensions

### SSOT 3L



MA03BREV B

**Figure 6. MOLDED PACKAGE, SUPERSOT, 3-LEAD (ACTIVE)**






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