

NPN Low-Saturation Transistor

FSB560A

This device is designed with high-current gain and low-saturation voltage with collector currents up to 2 A continuous.

ABSOLUTE MAXIMUM RATINGS

(T_A = 25 °C unless otherwise noted.) (Notes 1, 2)

Symbol	Parameter	Value	Unit
V _{CEO}	Collector-Emitter Voltage	60	V
V _{CBO}	Collector-Base Voltage	80	V
V _{EB0}	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	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

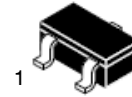
- These ratings are based on a maximum junction temperature of 150 °C.
- These are steady-state limits. onsemi should be consulted on applications involving pulsed or low-duty-cycle operations.

THERMAL CHARACTERISTICS

(T_A = 25 °C unless otherwise noted.) (Note 3)

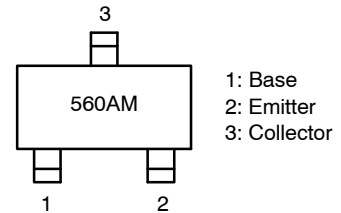
Symbol	Parameter	Max	Unit
P _D	Total Device Dissipation	500	mW
	Derate Above 25 °C	4	mW/°C
R _{θJA}	Thermal Resistance, Junction to Ambient	250	°C/W

- PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.



SOT-23/SUPERSOT™ -23, 3 LEAD
CASE 527AG

MARKING DIAGRAM



560A = Specific Device Code
M = Assembly Operation Month

ORDERING INFORMATION

Device	Package	Shipping†
FSB560A	SOT-23 (Pb-Free, Halide Free)	3000 / Tape & Reel

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, [BRD8011/D](#).

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Test Conditions	Min	Max	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{ mA}, I_B = 0$	60	–	V
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\text{ }\mu\text{A}, I_E = 0$	80	–	V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100\text{ }\mu\text{A}, I_C = 0$	5	–	V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 30\text{ V}, I_E = 0$	–	100	nA
		$V_{CB} = 30\text{ V}, I_E = 0, T_A = 100^\circ\text{C}$	–	10	μA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 4\text{ V}, I_C = 0$	–	100	nA
h_{FE}	DC Current Gain (Note 4)	$I_C = 100\text{ mA}, V_{CE} = 2\text{ V}$	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 (Note 4)	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	–	300	mV
		$I_C = 2\text{ A}, I_B = 200\text{ mA}$	–	300	
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage (Note 4)	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	–	1.25	V
$V_{BE(ON)}$	Base-Emitter On Voltage (Note 4)	$I_C = 1\text{ A}, V_{CE} = 2\text{ V}$	–	1	V
C_{obo}	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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

TYPICAL PERFORMANCE CHARACTERISTICS

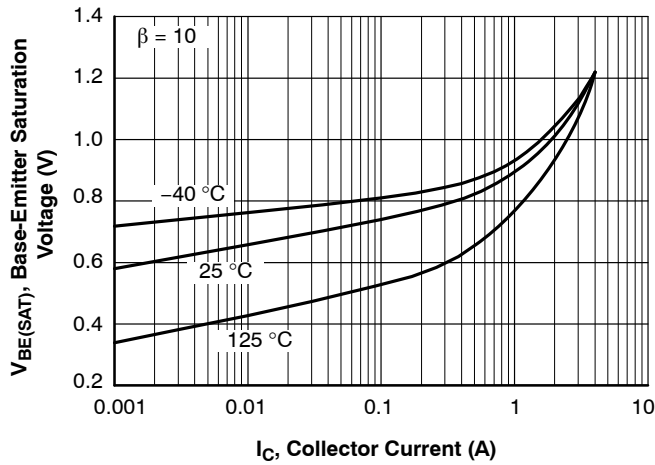


Figure 1. Base-Emitter Saturation Voltage vs. Collector Current

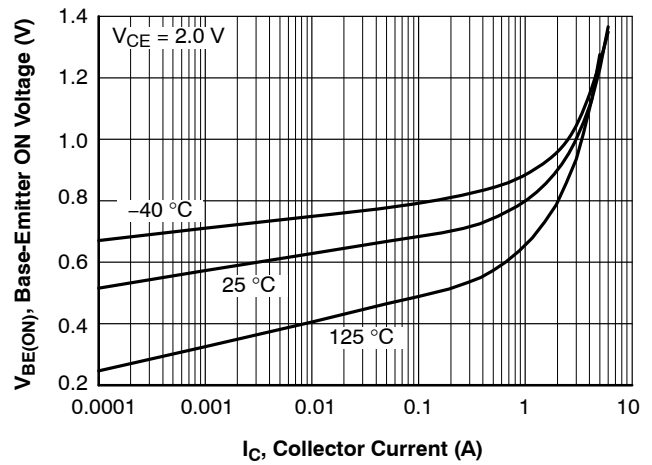


Figure 2. Base-Emitter On Voltage vs. Collector Current

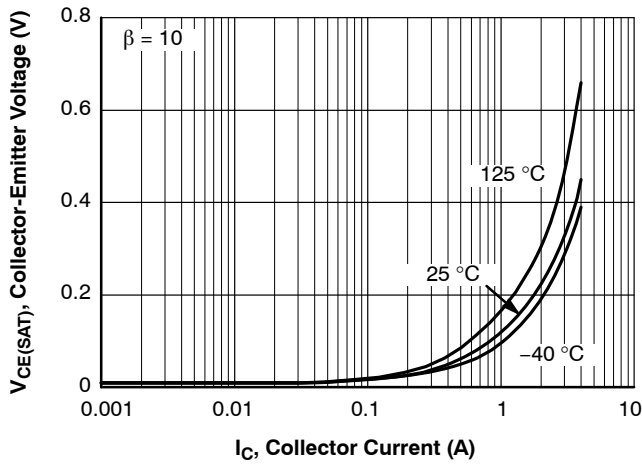


Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current

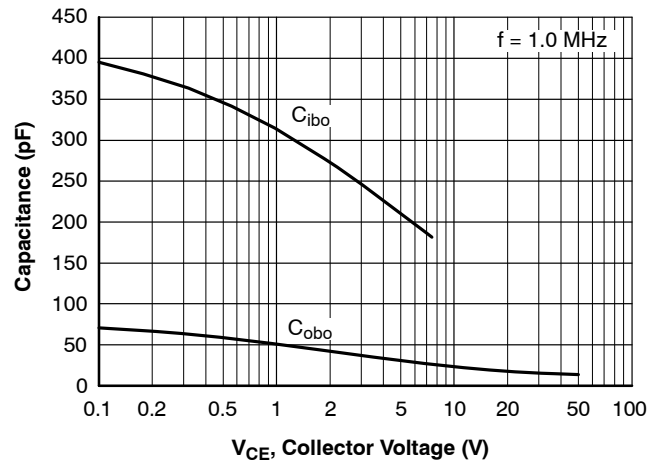


Figure 4. Input / Output Capacitance vs. Reverse Bias Voltage

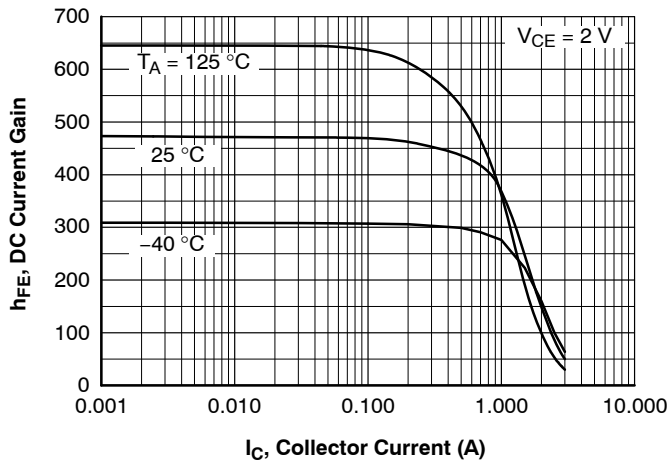


Figure 5. Current Gain vs. Collector Current

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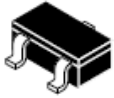
FSB560A

REVISION HISTORY

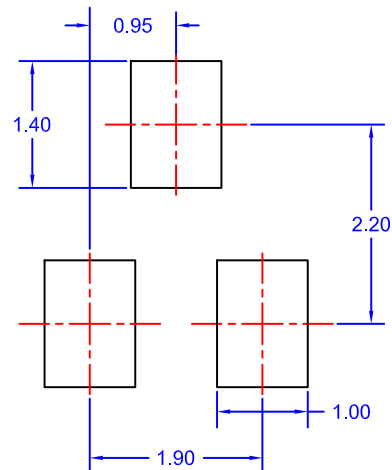
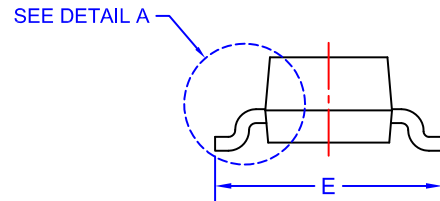
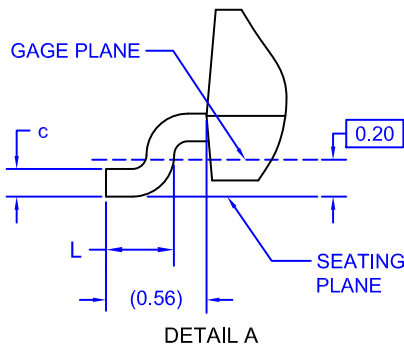
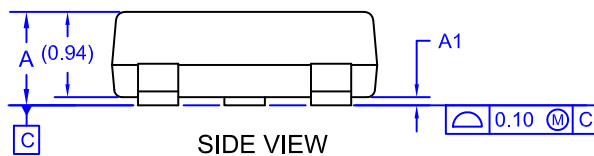
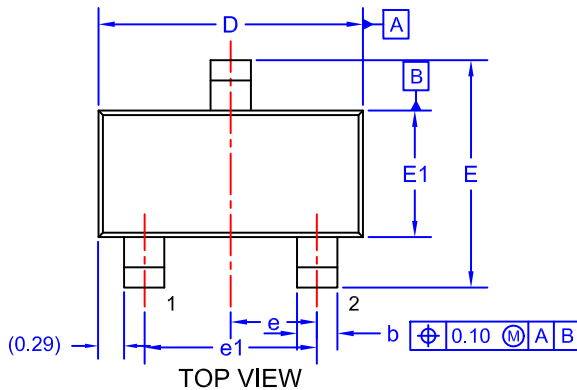
Revision	Description of Changes	Date
3	Document converted to onsemi format.	2/4/2026

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

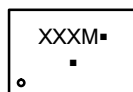



SOT-23/SUPERSOT™ –23, 3 LEAD, 1.4x2.9
CASE 527AG
ISSUE A

DATE 09 DEC 2019


LAND PATTERN RECOMMENDATION*

*FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

GENERIC MARKING DIAGRAM*


XXX = Specific Device Code
M = Month Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

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DESCRIPTION:	SOT-23/SUPERSOT-23, 3 LEAD, 1.4X2.9	PAGE 1 OF 1

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