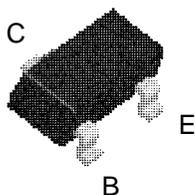


FSB560 / FSB560A



SuperSOT™-3 (SOT-23)

NPN Low Saturation Transistor

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

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	FSB560/FSB560A	Units
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	80	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	$^\circ\text{C}$

*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°C .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Characteristic	Max	Units
		FSB560/FSB560A	
P_D	Total Device Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	$^\circ\text{C}/\text{W}$

NPN Low Saturation Transistor

(continued)

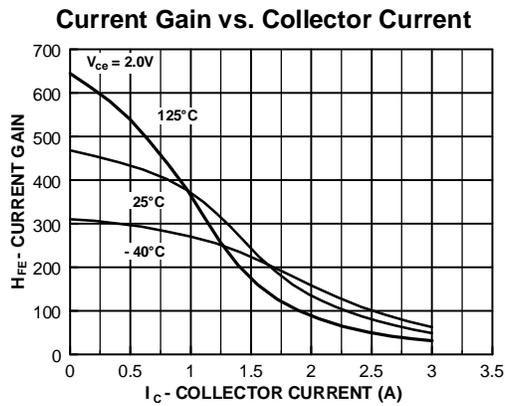
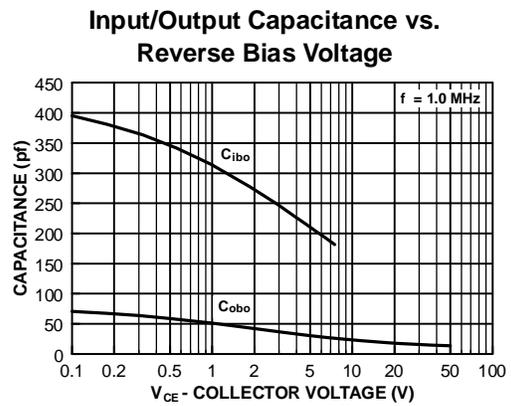
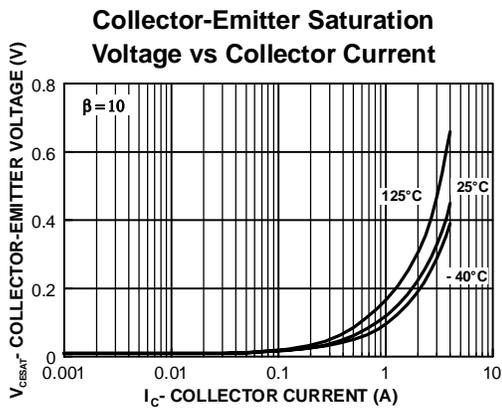
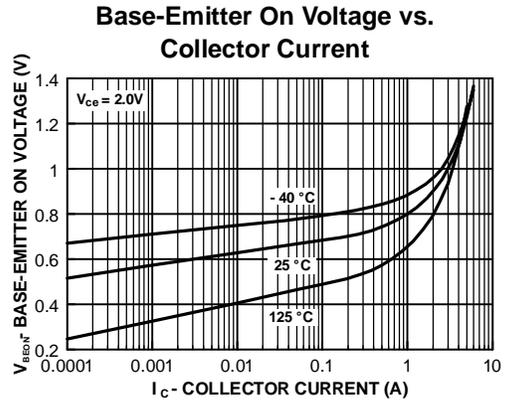
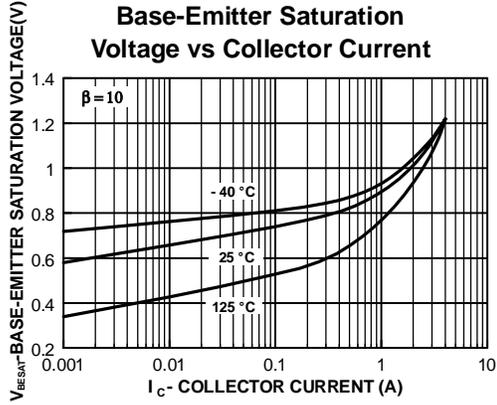
Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}$	60		V
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100 \mu\text{A}$	80		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100 \mu\text{A}$	5		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 30 \text{ V}$ $V_{CB} = 30 \text{ V}, T_A = 100^\circ\text{C}$		100 10	nA uA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 4\text{V}$		100	nA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	$I_C = 100 \text{ mA}, V_{CE} = 2 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 2 \text{ V}$ FSB560 FSB560A $I_C = 1 \text{ A}, V_{CE} = 2 \text{ V}$ $I_C = 2 \text{ A}, V_{CE} = 2 \text{ V}$	70 100 250 80 40	300 550	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1 \text{ A}, I_B = 100 \text{ mA}$ $I_C = 2 \text{ A}, I_B = 200 \text{ mA}$ FSB560 FSB560A		300 350 300	mV
$V_{BE(sat)}$	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
SMALL SIGNAL CHARACTERISTICS					
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		-

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

Typical Characteristics



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Definition of Terms

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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.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.