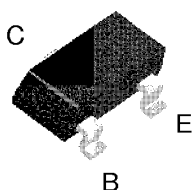


**FSB619**

**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 3A continuous.

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

Symbol	Parameter	FSB619	Units
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{CBO}$	Collector-Base Voltage	50	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  $150^\circ\text{C}$ .
- 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
		FSB619	
$P_D$	Total Device Dissipation* Derate above $25^\circ\text{C}$	500 4	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	$^\circ\text{C/W}$

\*Device mounted on FR-4 PCB 4.5" X 5"; mounting pad 0.02 in<sup>2</sup> of 2oz copper.

## NPN Low Saturation Transistor

(continued)

### Electrical Characteristics

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

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{ mA}$	50		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\text{ }\mu\text{A}$	50		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\text{ }\mu\text{A}$	5		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 40\text{ V}$		100	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 4\text{ V}$		100	nA
$I_{CES}$	Collector Emitter Cutoff Current	$V_{CES} = 40\text{ V}$		100	nA
<b>ON CHARACTERISTICS*</b>					
$h_{FE}$	DC Current Gain	$I_C = 10\text{ mA}, V_{CE} = 2\text{ V}$ $I_C = 200\text{ mA}, V_{CE} = 2\text{ V}$ $I_C = 1\text{ A}, V_{CE} = 2\text{ V}$ $I_C = 2\text{ A}, V_{CE} = 2\text{ V}$	200 300 200 100		-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\text{ mA}, I_B = 10\text{ mA}$ $I_C = 1\text{ A}, I_B = 10\text{ mA}$ $I_C = 2\text{ A}, I_B = 50\text{ mA}$		20 235 320	mV
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 2\text{ A}, I_B = 50\text{ mA}$		1	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2\text{ A}, V_{CE} = 2\text{ V}$		1	V
<b>SMALL SIGNAL CHARACTERISTICS</b>					
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		30	pF
$f_T$	Transition Frequency	$I_C = 50\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$	100		-

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