FAIRCHILD SEMICONDUCTOR TM

Discrete Power & Signal Technologies

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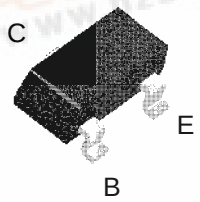
FSB619



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°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	°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°C unless otherwise noted

Symbol	Characteristic	Max	Units
		FSB619	
P_D	Total Device Dissipation* Derate above 25°C	500 4	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	°C/W

*Device mounted on FR-4 PCB 4.5" X 5"; mounting pad 0.02 in^2 of 2oz copper.

NPN Low Saturation Transistor

(continued)

Electrical Characteristics

$T_{A = 25°C \text{ unless otherwise noted}}$

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

*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%