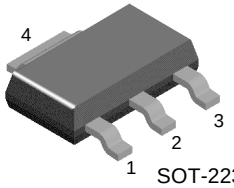
FAIRCHILD
SEMICONDUCTOR®

BSP50

NPN Darlington Transistor

- This device is designed for applications requiring extremly high current gain at collector currents to 500mA.
- Sourced from process 03.



SOT-223

1. Base 2. Collector 3. Emitter

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CER}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	800	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 55 ~ +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.

Electrical Characteristics T_a=25°C unless otherwise noted

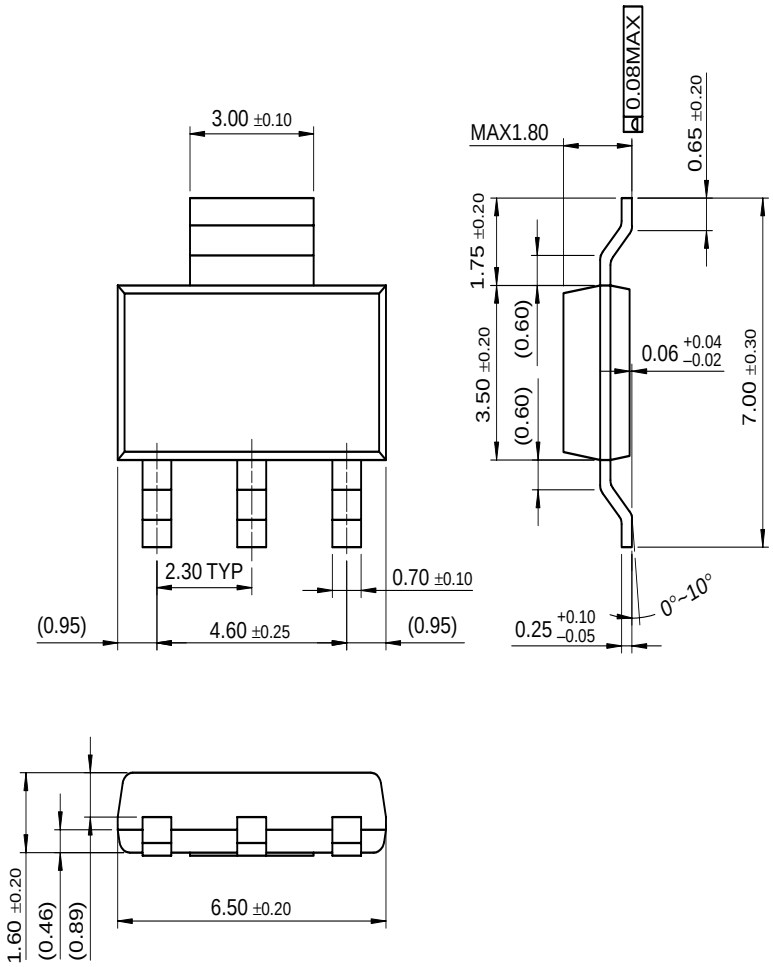
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100μA, I_E = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	5			V
I_{CES}	Collector Cutoff Current	V_{CE} = 45V, V_{BE} = 0			50	nA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 4.0V, I_C = 0			50	nA
On Characteristics						
h_{FE}	DC Current Gain	I_C = 150mA, V_{CE} = 10V I_C = 500mA, V_{CE} = 10V	1000 2000			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 500mA, I_B = 0.5mA			1.3	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 500mA, I_B = 0.5mA			1.9	V

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	1000 8.0	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	°C/W

Package Dimensions

SOT-223



Dimensions in Millimeters

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