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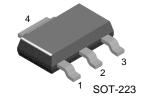
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BSP50

NPN Darlington Transistor

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



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.	Тур.	Max.	Units
Off Charac	Off Characteristics					
V _{(BR)CBO}	Collector-Base Breakdown Voltage	$I_C = 100 \mu A, I_E = 0$	60			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\mu A, I_C = 0$	5			V
I _{CES}	Collector Cutoff Current	$V_{CE} = 45V, V_{BE} = 0$			50	nA
I _{EBO}	Emitter Cutoff Current	$V_{EB} = 4.0 V, I_{C} = 0$			50	nA
On Characteristics						
h _{FE}	DC Current Gain	I _C = 150mA, V _{CE} = 10V	1000			
		$I_C = 500 \text{mA}, V_{CE} = 10 \text{V}$	2000			
V _{CE} (sat)	Collector-Emitter Saturation Voltage	$I_C = 500 \text{mA}, I_B = 0.5 \text{mA}$			1.3	V
V _{BE} (sat)	Base-Emitter Saturation Voltage	$I_C = 500 \text{mA}, I_B = 0.5 \text{mA}$			1.9	V

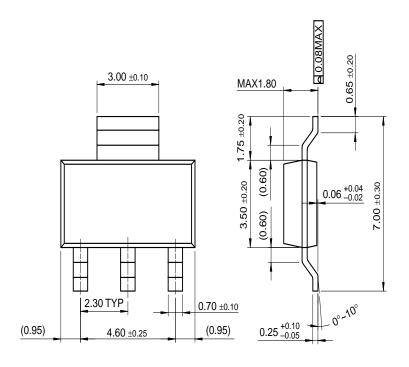
Thermal Characteristics $T_A=25$ °C unless otherwise noted

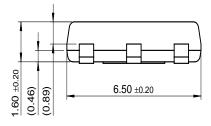
Symbol	Parameter	Max.	Units	
P _D	Total Device Dissipation	1000	mW	
	Derate above 25°C	8.0	mW/°C	
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	°C/W	

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Package Dimensions

SOT-223





Dimensions in Millimeters

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Stealth™

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition		
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Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.		
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