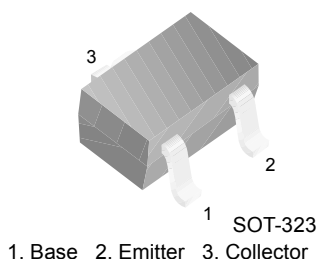


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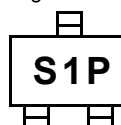
NPN Epitaxial Silicon Transistor

Features

- General Purpose Transistor
- Collector-Emitter Voltage: $V_{CEO} = 40V$
- Collector Dissipation: $P_C (\text{max}) = 325mW$



Marking



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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	325	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	150	$^\circ\text{C}$

Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=10\mu A, I_E=0$	75		V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$	40		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	6		V
I_{CBO}	Collector Cut-off Current	$V_{CB}=60V, I_E=0$		0.01	μA
h_{FE}	* DC Current Gain	$V_{CE}=10V, I_C=0.1mA$ $V_{CE}=10V, I_C=1mA$ $V_{CE}=10V, I_C=10mA$ $V_{CE}=10V, I_C=150mA$ $V_{CE}=10V, I_C=500mA$	35 50 75 100 40	300	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$		0.3 1.0	V V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$	0.6	1.2 2.0	V V
f_T	Current Gain Bandwidth Product	$I_C=20mA, V_{CE}=20V, f=100MHz$	300		MHz

Electrical Characteristics (Continued) $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
C_{ob}	Output Capacitance	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$	4	8	pF
NF	Noise Figure	$I_C=100\mu\text{A}$, $V_{CE}=10\text{V}$, $R_S=1\text{K}\Omega$, $f=1\text{kHz}$		4	dB
t_{ON}	Turn On Time	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $V_{BE}=0.5\text{V}$, $I_{B1}=15\text{mA}$		35	ns
t_{OFF}	Turn Off Time	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$		285	ns

* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

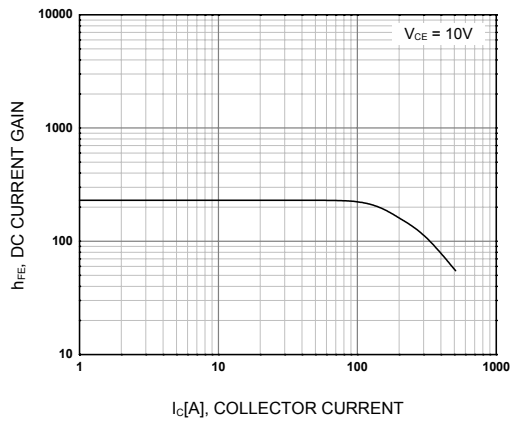


Figure 1. DC current Gain

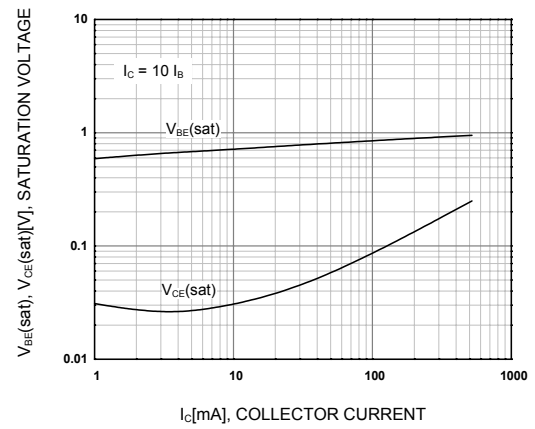


Figure 2. Collector-Base Saturation Voltage
Base-Emitter Saturation Voltage

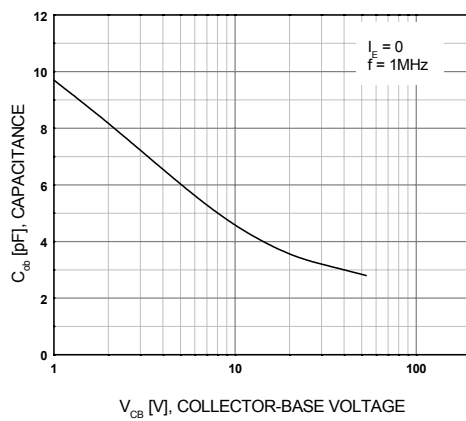


Figure 3. Output Capacitance

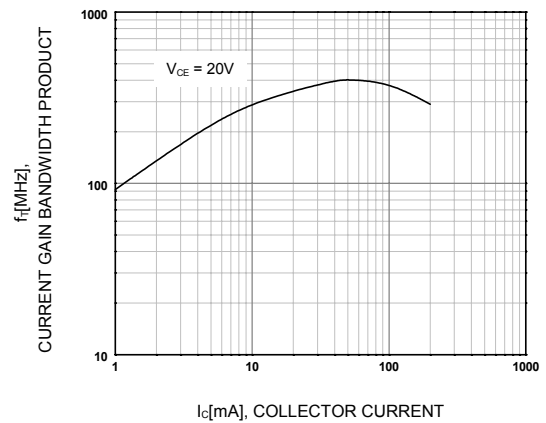
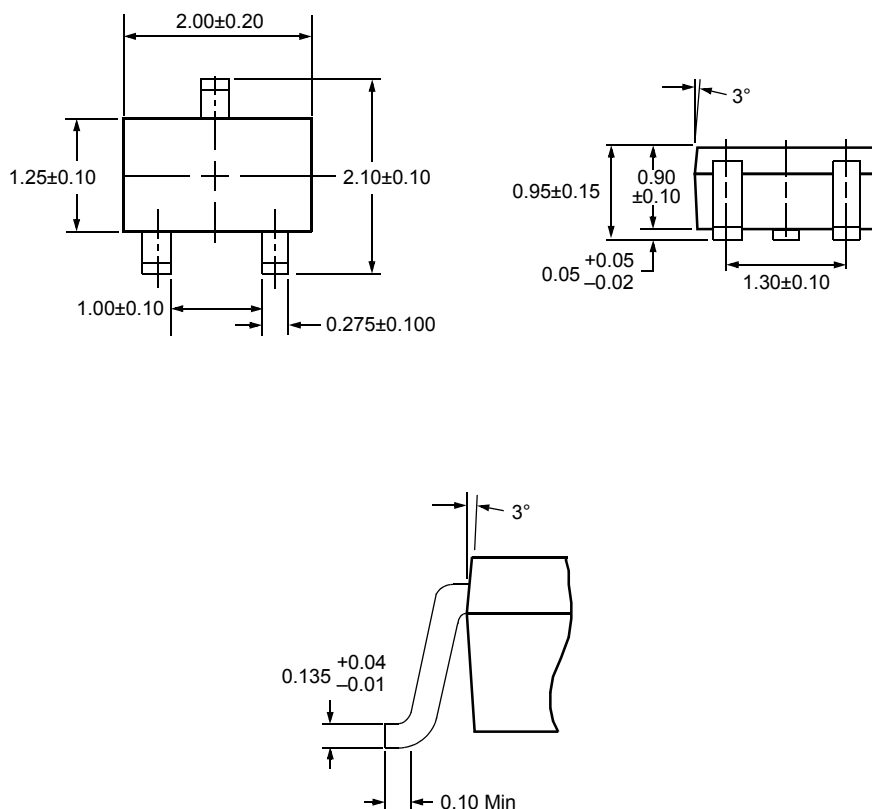


Figure 4. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-323



Dimensions in Millimeters



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