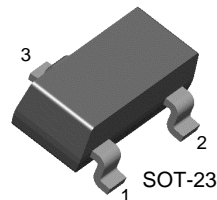


# KST3906

KST3906

## General Purpose Transistor



1. Base 2. Emitter 3. Collector

## PNP Epitaxial Silicon Transistor

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

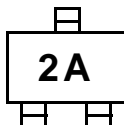
Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-40	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-200	mA
$P_C$	Collector Power Dissipation	350	mW
$T_{STG}$	Storage Temperature	150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-40		V
$BV_{CEO}$	* Collector-Emitter Breakdown Voltage	$I_C = -1.0\text{mA}, I_B = 0$	-40		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}, I_C = 0$	-5		V
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = -30\text{V}, V_{EB} = -3\text{V}$		-50	nA
$h_{FE}$	* DC Current Gain	$V_{CE} = -1\text{V}, I_C = -0.1\text{mA}$ $V_{CE} = -1\text{V}, I_C = -1\text{mA}$ $V_{CE} = -1\text{V}, I_C = -10\text{mA}$ $V_{CE} = -1\text{V}, I_C = -50\text{mA}$ $V_{CE} = -1\text{V}, I_C = -100\text{mA}$	60 80 100 60 30	300	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$		-0.25 -0.4	V V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$	-0.65	-0.85 -0.95	V V
$f_T$	Current Gain Bandwidth Product	$I_C = -10\text{mA}, V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	250		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -5\text{V}, I_E = 0, f = 1.0\text{MHz}$		4.5	pF
NF	Noise Figure	$I_C = -100\mu\text{A}, V_{CE} = -5\text{V}$ $R_S = 1\text{K}\Omega$ $f = 10\text{Hz to } 15.7\text{KHz}$		4	dB
$t_{ON}$	Turn On Time	$V_{CC} = -3\text{V}, V_{BE} = -0.5\text{V}$ $I_C = -10\text{mA}, I_{B1} = -1\text{mA}$		70	ns
$t_{OFF}$	Turn Off Time	$V_{CC} = -3\text{V}, I_C = -10\text{mA}$ $I_{B1} = I_{B2} = -1\text{mA}$		300	ns

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

Marking



# Typical Characteristics

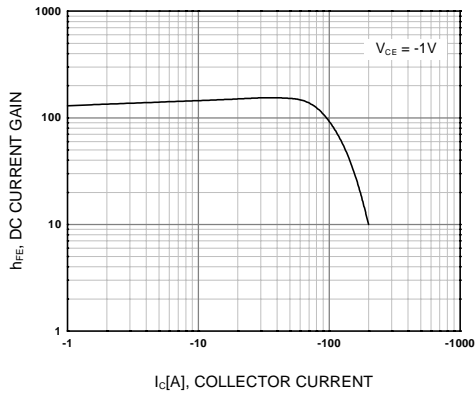


Figure 1. DC current Gain

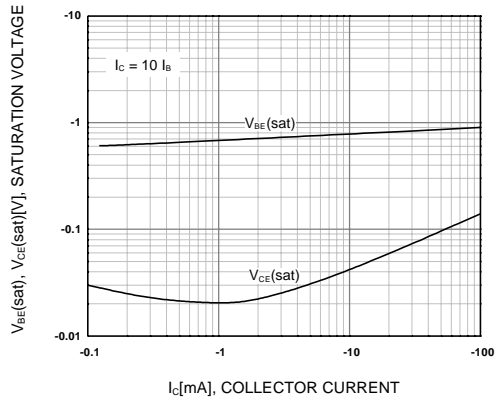


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

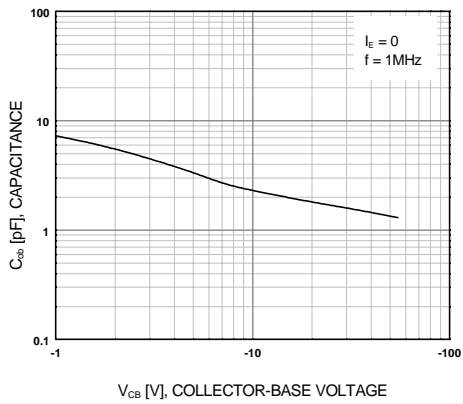


Figure 3. Output Capacitance

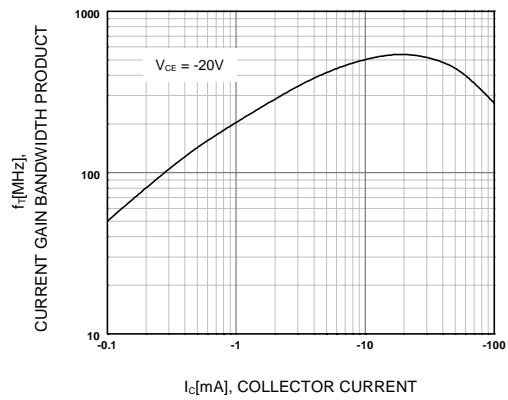
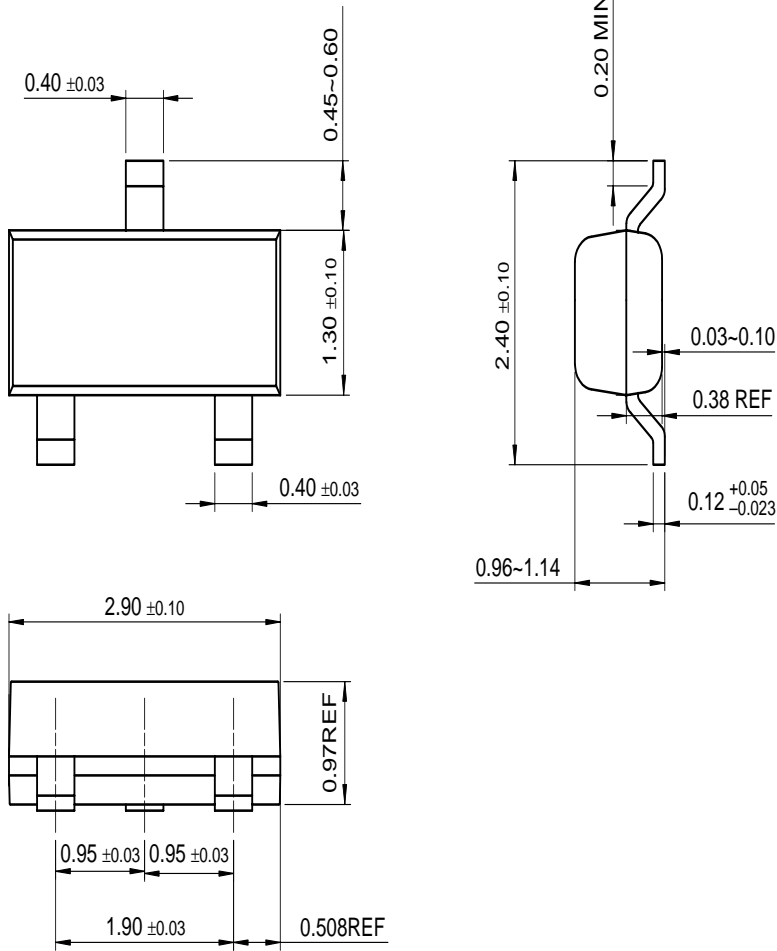


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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