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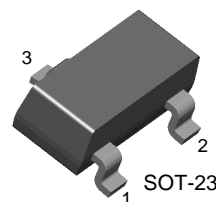
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# KST4401

KST4401

## Switching Transistor



1. Base 2. Emitter 3. Collector

## NPN Epitaxial Silicon Transistor

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

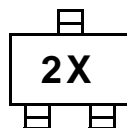
Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current	600	mA
$P_C$	Collector Dissipation	350	mW
$T_{STG}$	Storage Temperature	150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$	60		V
$BV_{CEO}$	* Collector-Emitter Breakdown Voltage	$I_C=1.0\text{mA}, I_B=0$	40		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}, I_C=0$	6		V
$I_{BEV}$	Base Cut-off Current	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$		100	nA
$I_{CEX}$	Collector Cut-off Current	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$		100	nA
$h_{FE}$	* DC Current Gain	$V_{CE}=1\text{V}, I_C=0.1\text{mA}$ $V_{CE}=1\text{V}, I_C=1\text{mA}$ $V_{CE}=1\text{V}, I_C=10\text{mA}$ $V_{CE}=1\text{V}, I_C=150\text{mA}$ $V_{CE}=2\text{V}, I_C=500\text{mA}$	20 40 80 100 40	300	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C=150\text{mA}, I_B=15\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}$		0.4 0.75	V V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C=150\text{mA}, I_B=15\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}$	0.75	0.95 1.2	V V
$f_T$	Current Gain Bandwidth Product	$I_C=20\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$	250		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=5\text{V}, I_E=0, f=100\text{KHz}$		6.5	pF
$t_{ON}$	Turn On Time	$V_{CC}=30\text{V}, V_{BE}=2\text{V}$ $I_C=150\text{mA}, I_{B1}=15\text{mA}$		35	ns
$t_{OFF}$	Turn Off Time	$V_{CC}=30\text{V}, I_C=150\text{mA}$ $I_{B1}=I_{B2}=15\text{mA}$		255	ns

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

Marking



# Typical Characteristics

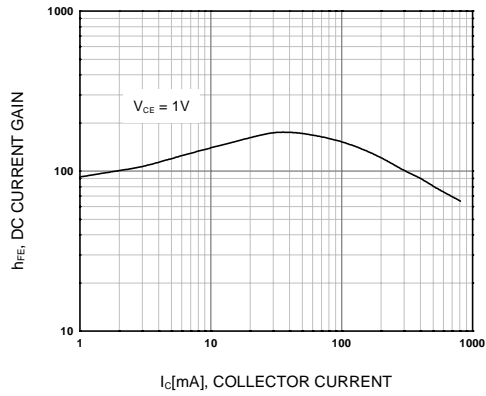


Figure 1. DC current Gain

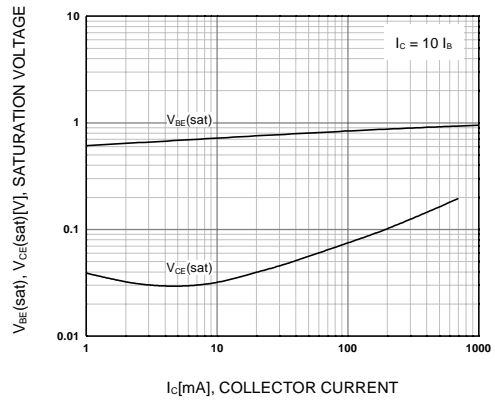


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

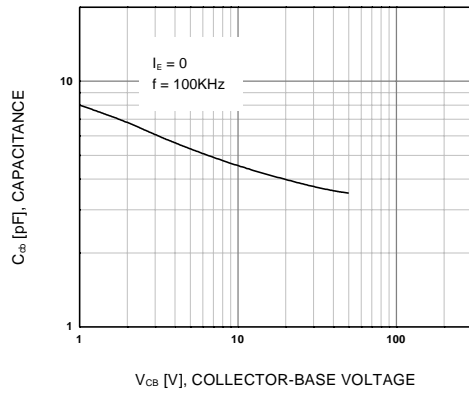


Figure 3. Collector-Base Capacitance

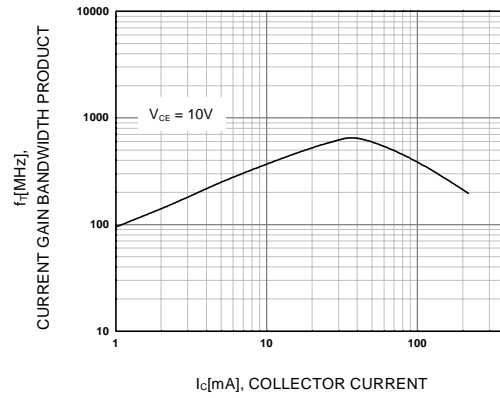
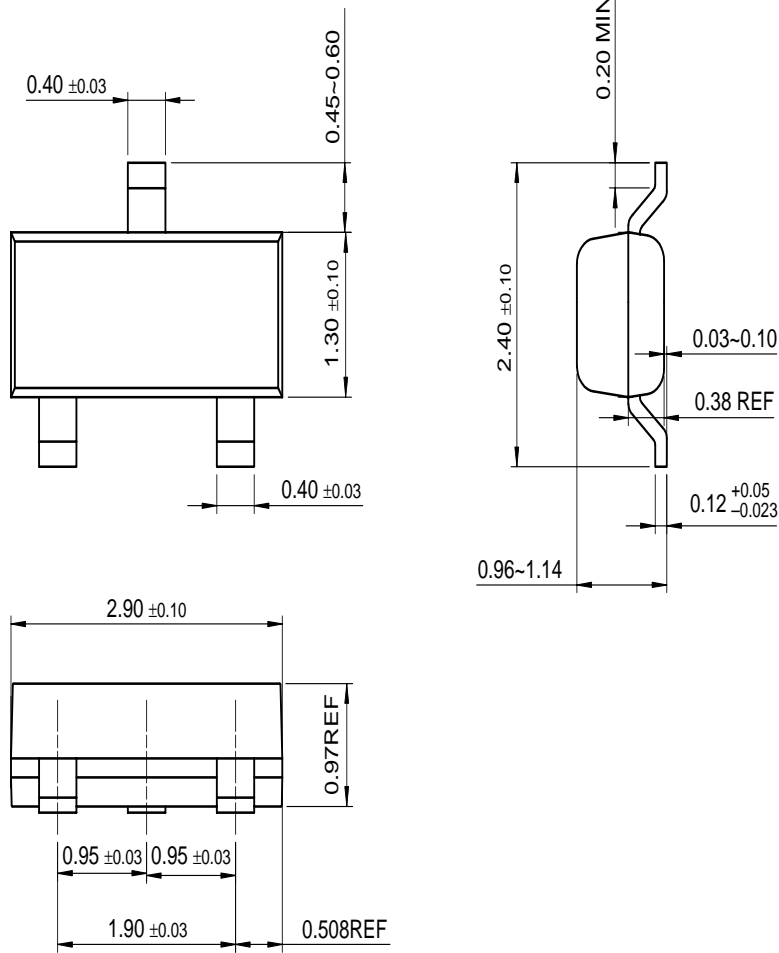


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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