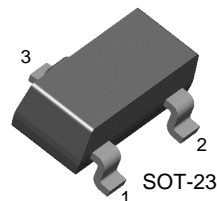


## KST5088/5089

### Low Noise 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	
$V_{CB0}$	Collector-Base Voltage	: KST5088	35	V
		: KST5089	30	V
$V_{CEO}$	Collector-Emitter Voltage	: KST5088	30	V
		: KST5089	25	V
$V_{EBO}$	Emitter-Base Voltage	4.5	V	
$I_C$	Collector Current	50	mA	
$P_C$	Collector Power Dissipation	350	mW	
$T_{STG}$	Storage Temperature	150	$^\circ\text{C}$	

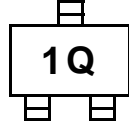
#### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units		
$BV_{CB0}$	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$	: KST5088	35	V		
			: KST5089	30	V		
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$	: KST5088	30	V		
			: KST5089	25	V		
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=20\text{V}, I_E=0$ $V_{CB}=15\text{V}, I_E=0$	: KST5088	50	nA		
			: KST5089	50	nA		
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=3\text{V}, I_C=0$		50	nA		
$h_{FE}$	DC Current Gain	$V_{CE}=5\text{V}, I_C=100\mu\text{A}$	: KST5088	300	900		
			: KST5089	400			
			: KST5088	$V_{CE}=5\text{V}, I_C=1\text{mA}$	350	1,200	
					: KST5089		450
					: KST5088		300
: KST5089	400						
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$		0.5	V		
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$		0.8	V		
$f_T$	Current Gain-Bandwidth Product	$V_{CE}=5\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	50		MHz		
$C_{ob}$	Output Capacitance	$V_{CB}=5\text{V}, I_E=0, f=100\text{KHz}$		4	pF		
NF	Noise Figure	$I_C=100\mu\text{A}, V_{CE}=5\text{V}$ $R_S=10\text{K}\Omega, f=10\text{Hz to }15.7\text{KHz}$	: KST5088	3	dB		
			: KST5089	2	dB		

### Marking Code

Type	KST5088	KST5089
Mark	1Q	1R

Marking



# Typical Characteristics

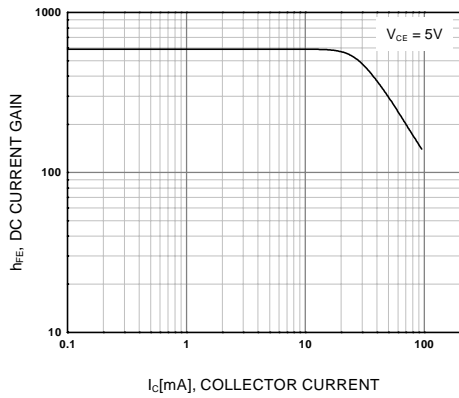


Figure 1. DC current Gain

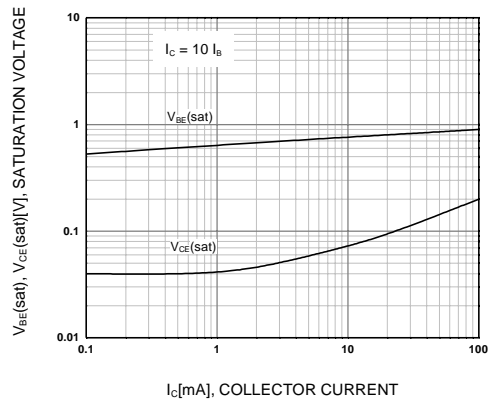


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

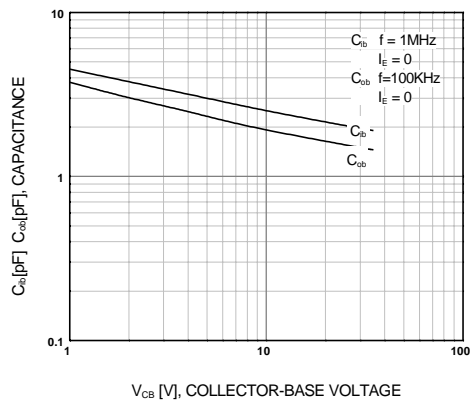


Figure 3. Output Capacitance  
Collector-Base Capacitance

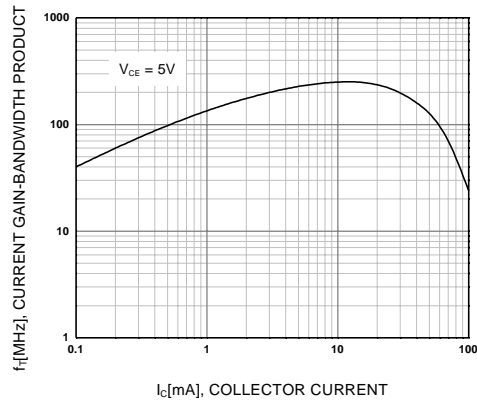
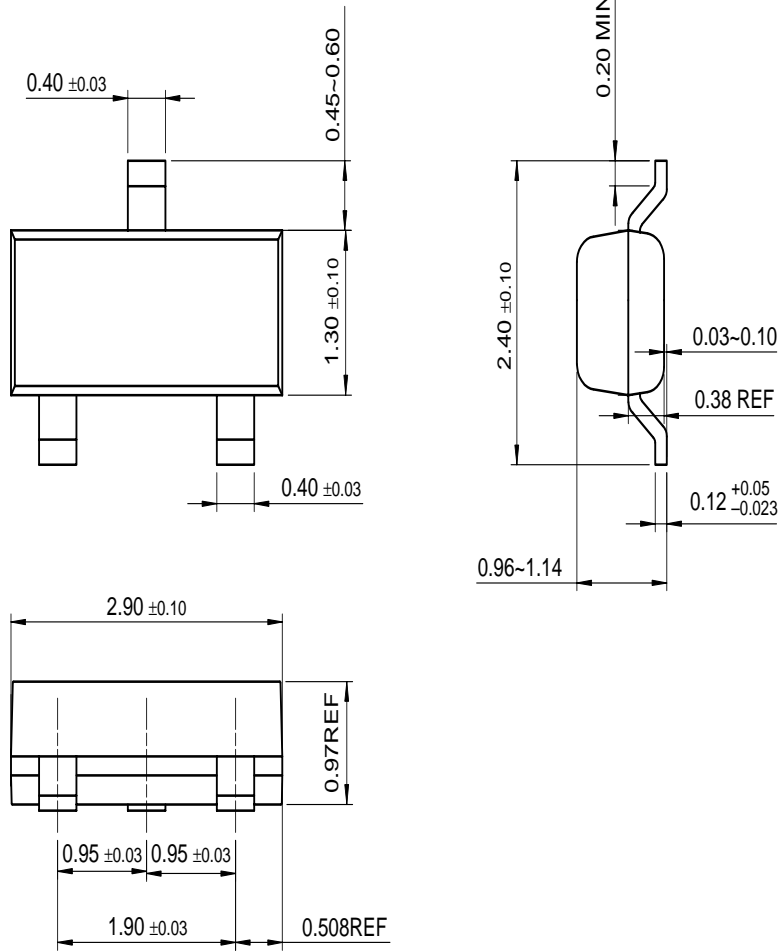


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23

KST5088/5089



Dimensions in Millimeters

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Bottomless <sup>™</sup>	FAST <sup>®</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperSOT <sup>™</sup> -3
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The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
Programmable Active Droop <sup>™</sup>		OPTOPLANAR <sup>™</sup>	SMART START <sup>™</sup>	

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