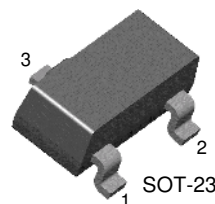


KST5088/5089

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_{CBO}	Collector-Base Voltage	: KST5088	35
		: KST5089	30
V_{CEO}	Collector-Emitter Voltage	: KST5088	30
		: KST5089	25
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	$^\circ\text{C}$

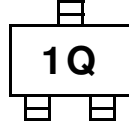
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units		
BV_{CBO}	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	$V_{CE}=5\text{V}, I_C=1\text{mA}$: KST5088	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

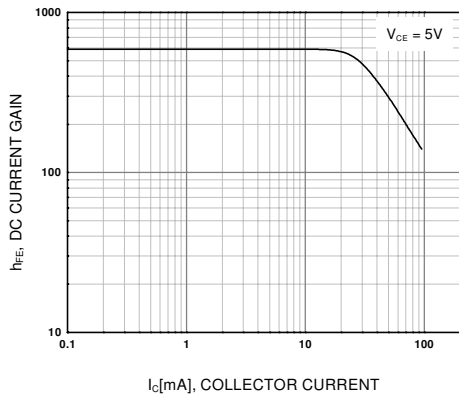


Figure 1. DC current Gain

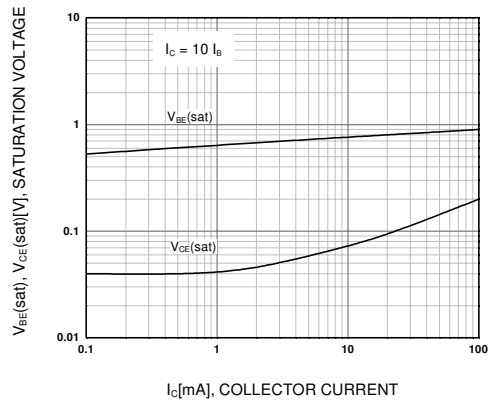


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

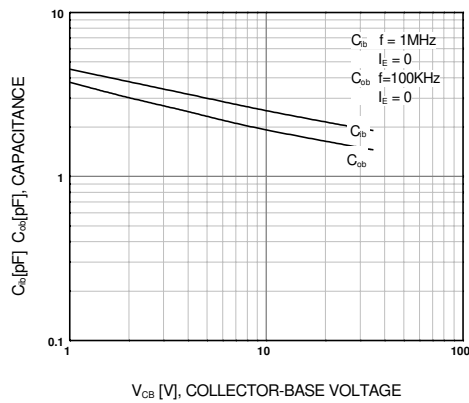


Figure 3. Output Capacitance
Collector-Base Capacitance

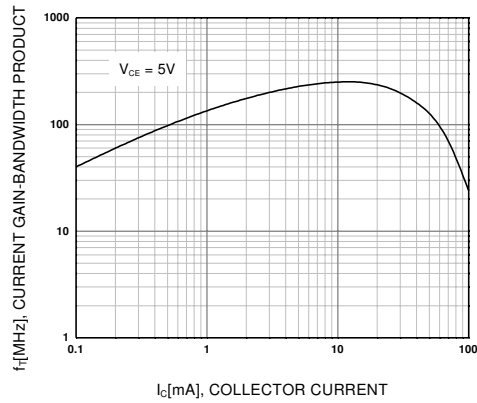
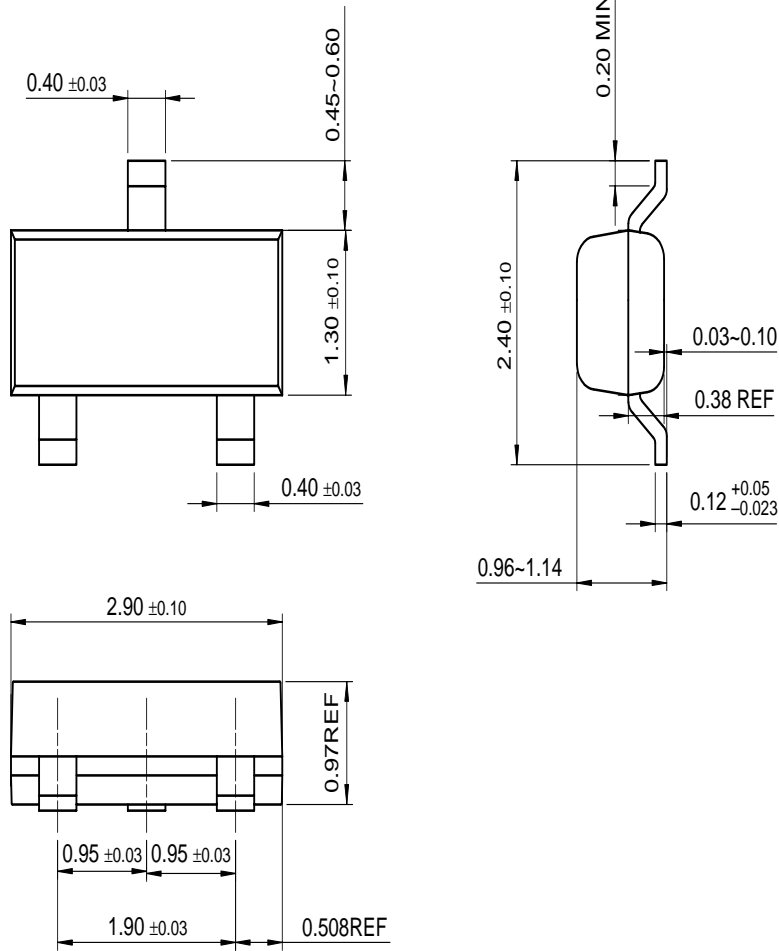


Figure 4. Current Gain Bandwidth Product

Package Dimensions

KST5088/5089

SOT-23



Dimensions in Millimeters

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Bottomless TM	FAST [®]	LittleFET TM	Power247 TM	SuperSOT TM -3
CoolFET TM	FAST ^r TM	MicroFET TM	PowerTrench [®]	SuperSOT TM -6
CROSSVOL TM	FRFET TM	MicroPak TM	QFET TM	SuperSOT TM -8
DOME TM	GlobalOptoisolator TM	MICROWIRE TM	QS TM	SyncFET TM
EcoSPARK TM	GTO TM	MSX TM	QT Optoelectronics TM	TinyLogic TM
E ² CMOS TM	HiSeC TM	MSXPro TM	Quiet Series TM	TruTranslation TM
EnSigna TM	I ² C TM	OCX TM	RapidConfigure TM	UHC TM
Across the board. Around the world. TM		OCXPro TM	RapidConnect TM	UltraFET [®]
The Power Franchise TM		OPTOLOGIC [®]	SILENT SWITCHER [®]	VCX TM
Programmable Active Droop TM		OPTOPLANAR TM	SMART START TM	

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PRODUCT STATUS DEFINITIONS

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