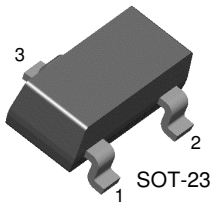
FAIRCHILD
SEMICONDUCTOR®

KST5088/5089

Low Noise Transistor



SOT-23

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	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	°C

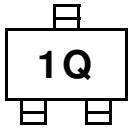
Electrical Characteristics T_a=25°C unless otherwise noted

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

Marking Code

Type	KST5088	KST5089
Mark	1Q	1R

Marking



Typical Characteristics

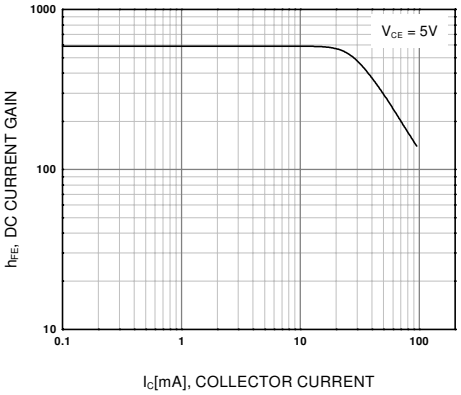


Figure 1. DC current Gain

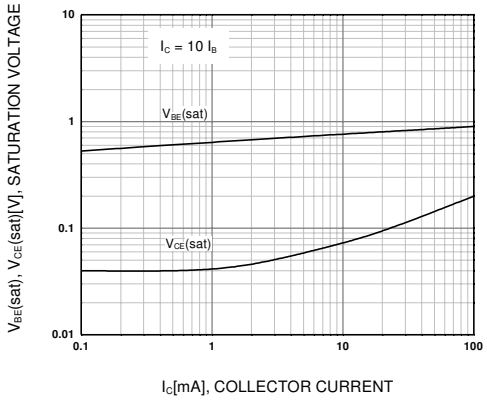


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

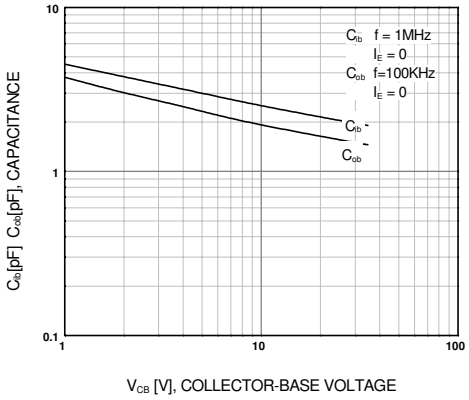


Figure 3. Output Capacitance Collector-Base Capaciance

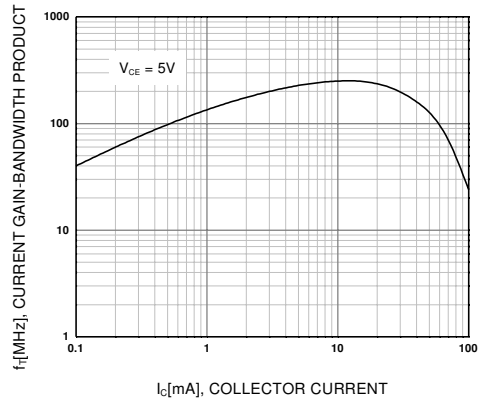
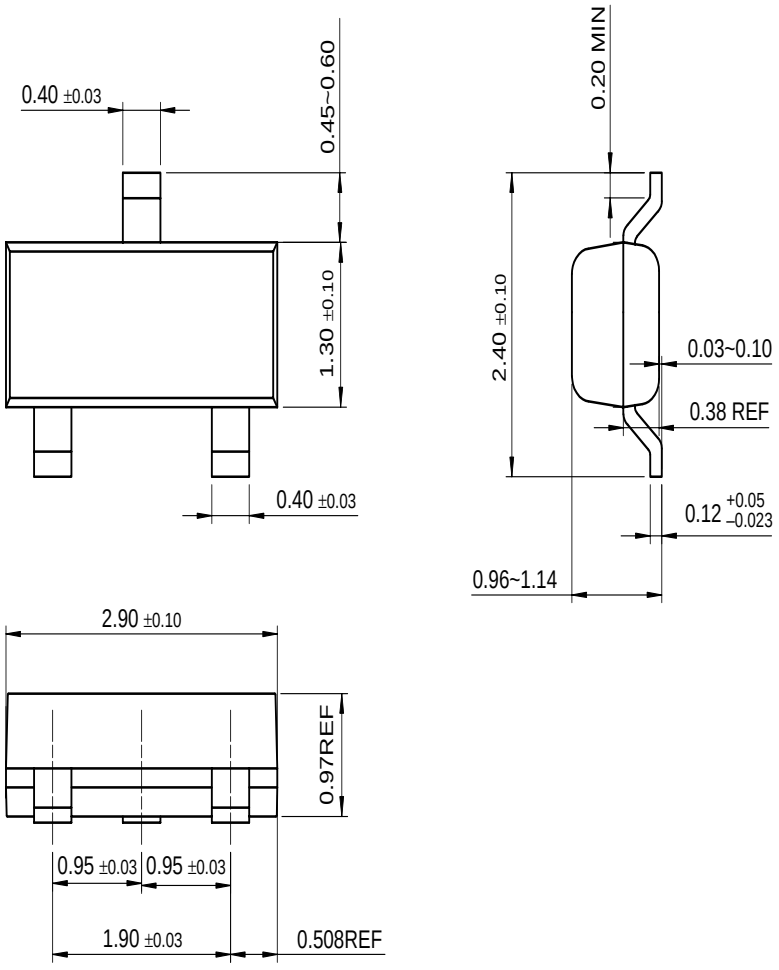


Figure 4. Current Gain Bandwidth Product

Package Dimensions

SOT-23



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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