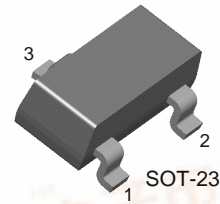


FAIRCHILD
SEMICONDUCTOR®

KST13/14

Darlington Amplifier 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	30	V
V_{CES}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current	300	mA
P_C	Collector Power Dissipation	350	mW
T_{STG}	Storage Temperature	150	$^\circ\text{C}$

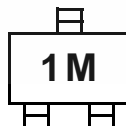
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CES}	Collector-Emitter Breakdown Voltage	$I_C=100\mu\text{A}, V_{BE}=0$	30		V
I_{CBO}	Collector Cut-off Current	$V_{CB}=30\text{V}, I_E=0$		100	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=10\text{V}, I_C=0$		100	nA
h_{FE}	DC Current Gain	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $V_{CE}=5\text{V}, I_C=100\text{mA}$	5K 10K 10K 20K		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=100\text{mA}, I_B=0.1\text{mA}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE}=5\text{V}, I_C=100\text{mA}$		2.0	V
f_T	Current Gain Bandwidth Product	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	125		MHz

Marking Code

Type	KST13	KST14
Mark	1M	1N

Marking



Typical Characteristics

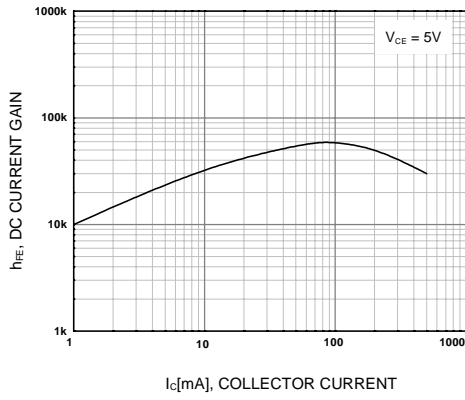


Figure 1. DC Current Gain

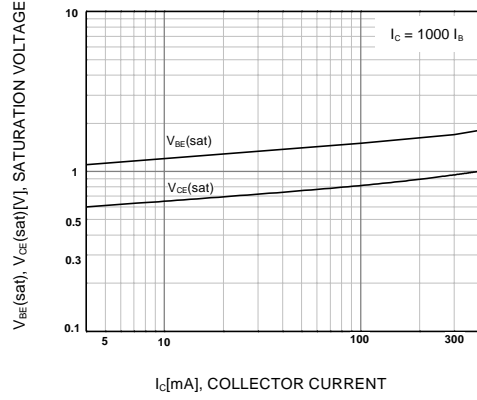


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

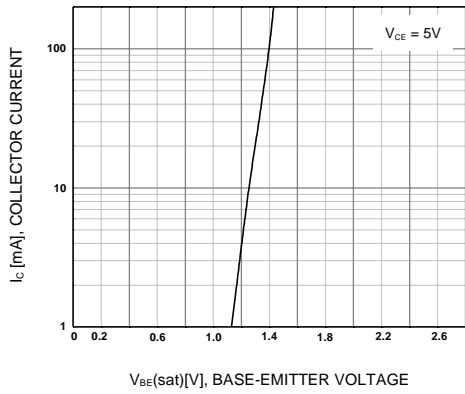


Figure 3. Base-Emitter On Voltage

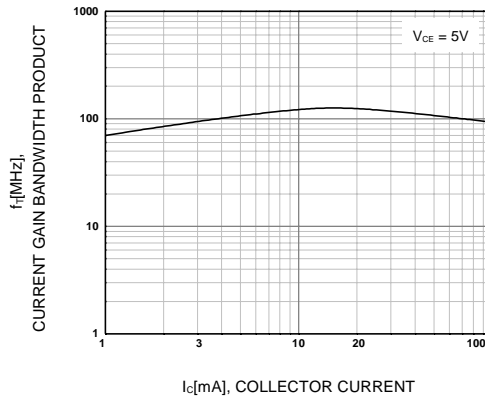
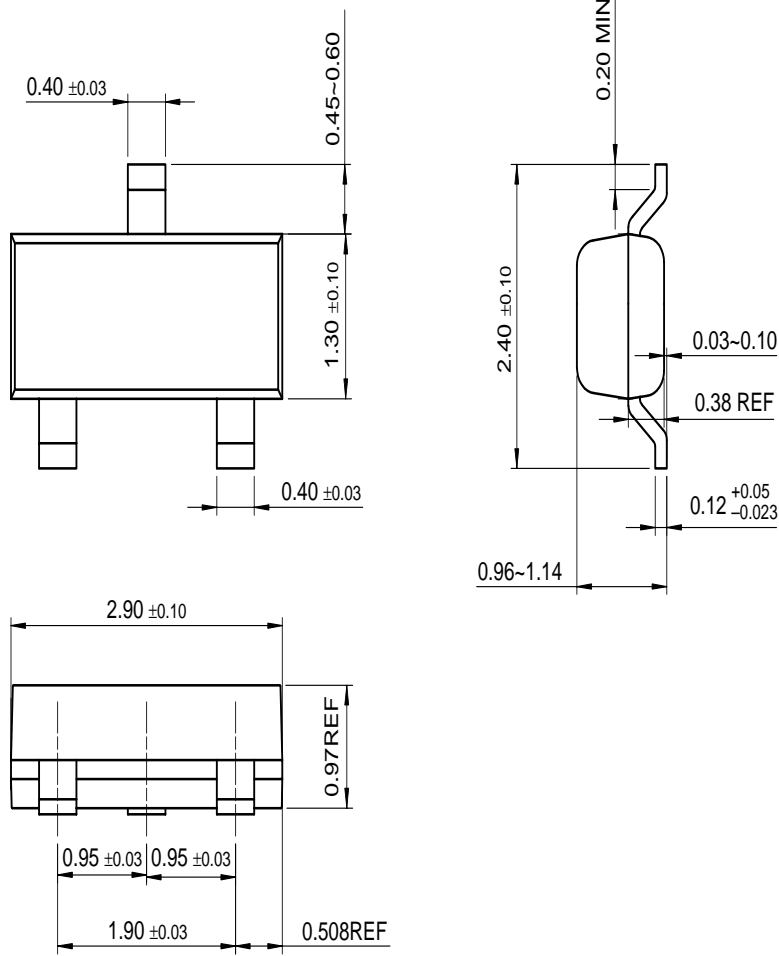


Figure 4. Current Gain Bandwidth Product

Package Dimensions

SOT-23



Dimensions in Millimeters

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

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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