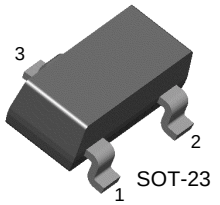
FAIRCHILD
SEMICONDUCTOR®

KST42/43

High Voltage 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		
	: KST42	300	V
	: KST43	200	V
V_{CEO}	Collector-Emitter Voltage		
	: KST42	300	V
	: KST43	200	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	350	mW
T_{STG}	Storage Temperature	150	°C
R_{TH}(j-a)	Thermal Resistance junction to Ambient	357	°C/W

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CBO}	Collector-Emitter Breakdown Voltage	I_C=100μA, I_E=0			
	: KST42		300		V
	: KST43		200		V
BV_{CEO}	* Collector -Emitter Breakdown Voltage	I_C=1mA, I_B=0			
	: KST42		300		V
	: KST43		200		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=100μA, I_C=0	6		V
I_{CBO}	Collector Cut-off Current	V_{CB}=200V, I_E=0		0.1	μA
I_{EBO}	Emitter Cut-off Current	V_{CB}=5V, I_C=0		0.1	μA
h_{FE}	* DC Current Gain	V_{CE}=10V, I_C=1mA	25		
		V_{CE}=10V, I_C=10mA	40		
		V_{CE}=10V, I_C=30mA	40		
V_{CE} (sat)	* Collector-Emitter Saturation Voltage	I_C=20mA, I_B=2mA		0.5	V
V_{BE} (sat)	* Base-Emitter Saturation Voltage	I_C=20mA, I_B=2mA		0.9	V
C_{ob}	Output Capacitance				
	: KST42	V_{CB}=20V, I_E=0		3	pF
	: KST43	f=1MHz		4	pF
f_T	Current Gain Bandwidth Product	V_{CE}=20V, I_C=10mA f=100MHz	50		MHz

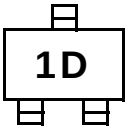
* Pulse Test: PW≤300μs, Duty Cycle≤2%

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Marking Code

Type	KST42	KST43
Mark	1D	1E

Marking



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Typical Characteristics

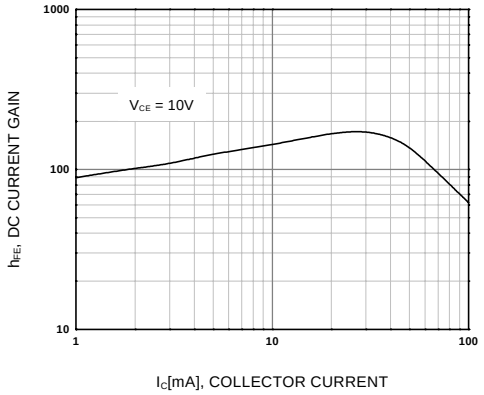


Figure 1. DC current Gain

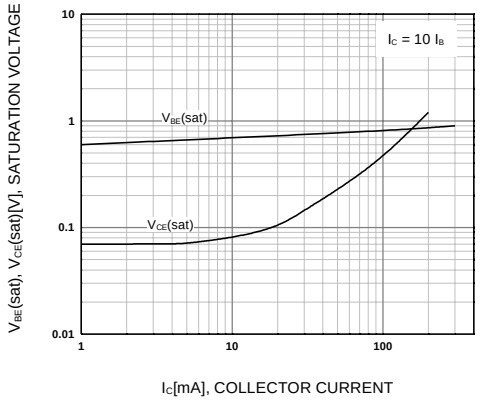


Figure 2. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

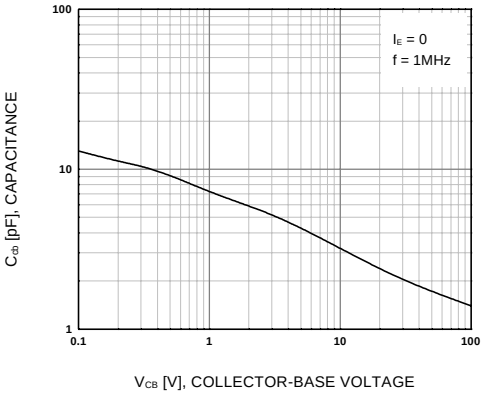


Figure 3. Collector-Base Capacitance

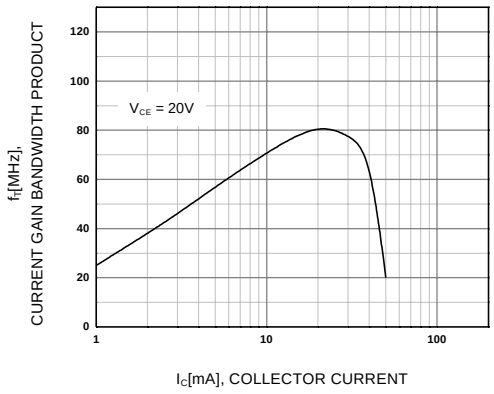
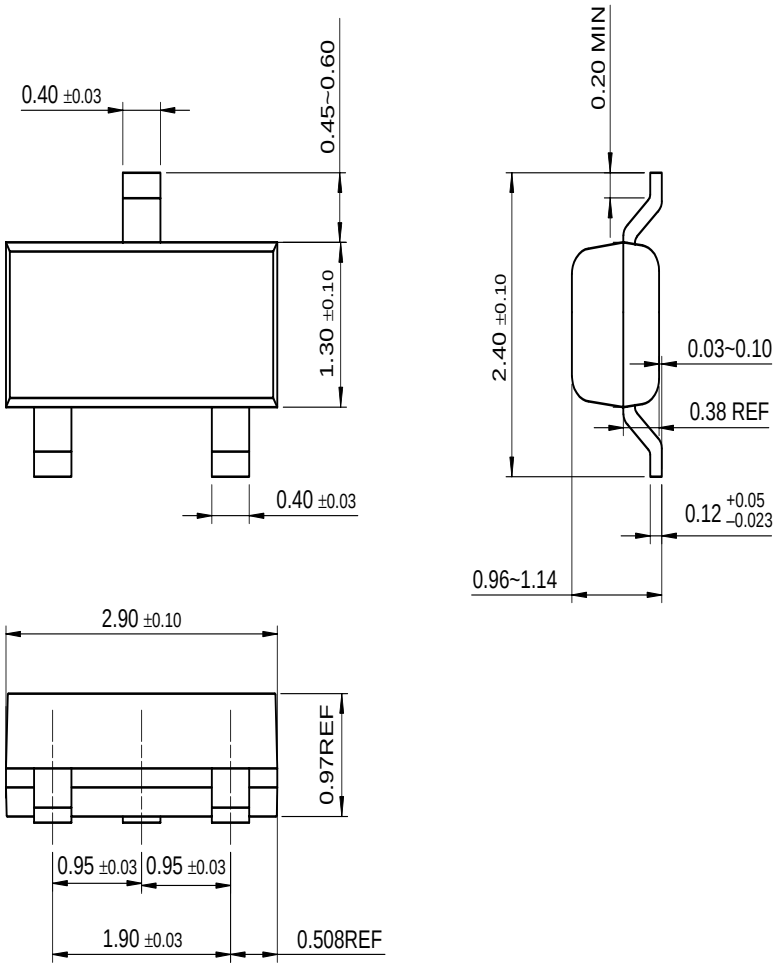


Figure 4. Current Gain Bandwidth Product

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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
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	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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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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