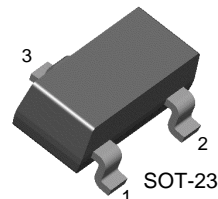


## KST42/43

### High Voltage 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		
	: 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	$^\circ\text{C}$
$R_{TH(j-a)}$	Thermal Resistance junction to Ambient	357	$^\circ\text{C/W}$

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

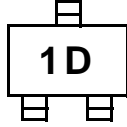
Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Emitter Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$			
	: KST42		300		V
	: KST43		200		V
$BV_{CEO}$	* Collector -Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$			
	: KST42		300		V
	: KST43		200		V
$BV_{EBO}$	Emitter-Base Breakdown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

\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

**Marking Code**

Type	KST42	KST43
Mark	1D	1E

Marking



# Typical Characteristics

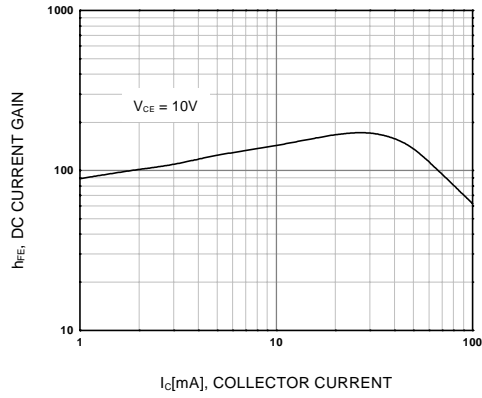


Figure 1. DC current Gain

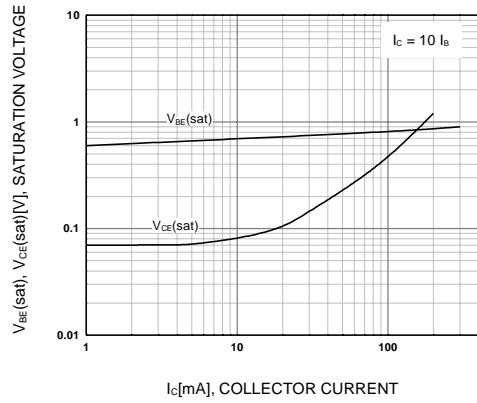


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

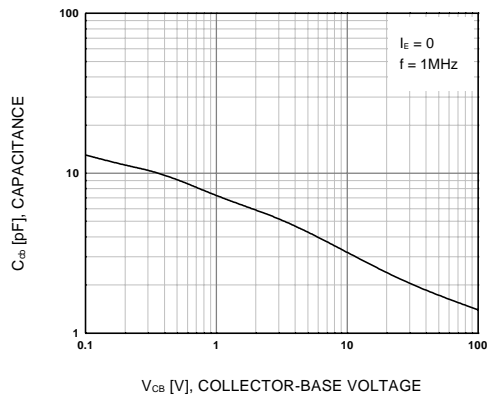


Figure 3. Collector-Base Capacitance

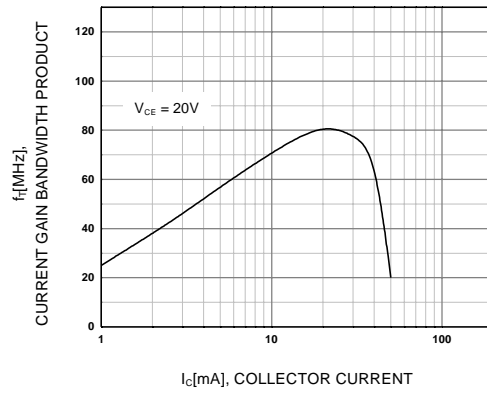
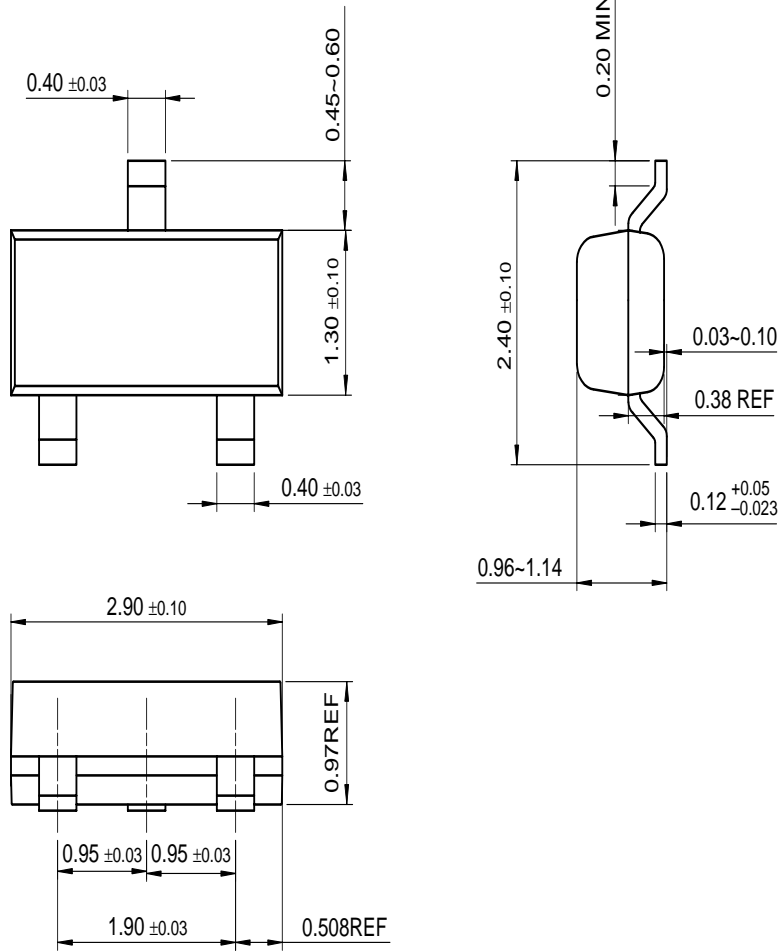


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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Bottomless <sup>™</sup>	FAST <sup>®</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperSOT <sup>™</sup> -3
CoolFET <sup>™</sup>	FAST <sup>r</sup> <sup>™</sup>	MicroFET <sup>™</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>™</sup> -6
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Across the board. Around the world. <sup>™</sup>		OCXPro <sup>™</sup>	RapidConnect <sup>™</sup>	UltraFET <sup>®</sup>
The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
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