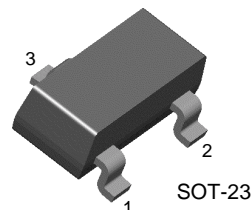


KST42/43

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

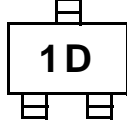
Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CBO}	Collector-Emitter Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$			
	: KST42		300		V
	: KST43		200		V
BV_{CEO}	* Collector -Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$			
	: KST42		300		V
	: KST43		200		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}, I_C=0$	6		V
I_{CBO}	Collector Cut-off Current	$V_{CB}=200\text{V}, I_E=0$		0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{CB}=5\text{V}, I_C=0$		0.1	μA
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

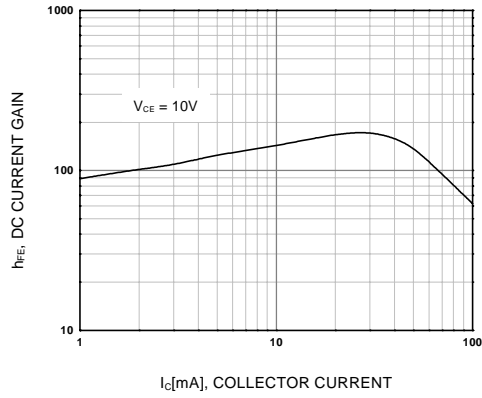


Figure 1. DC current Gain

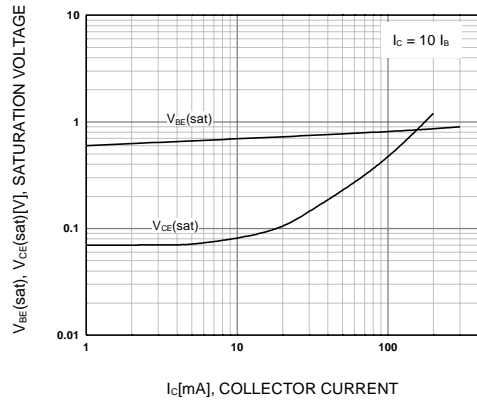


Figure 2. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

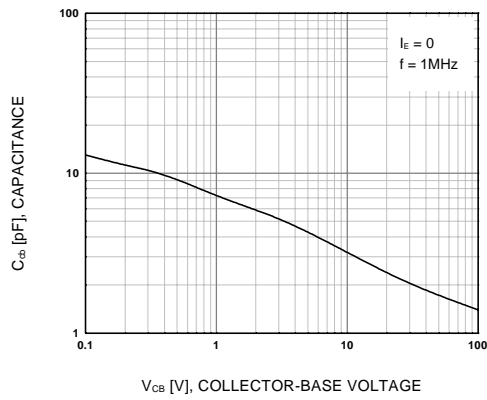


Figure 3. Collector-Base Capacitance

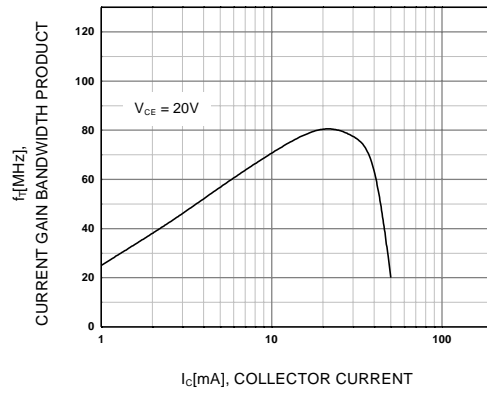
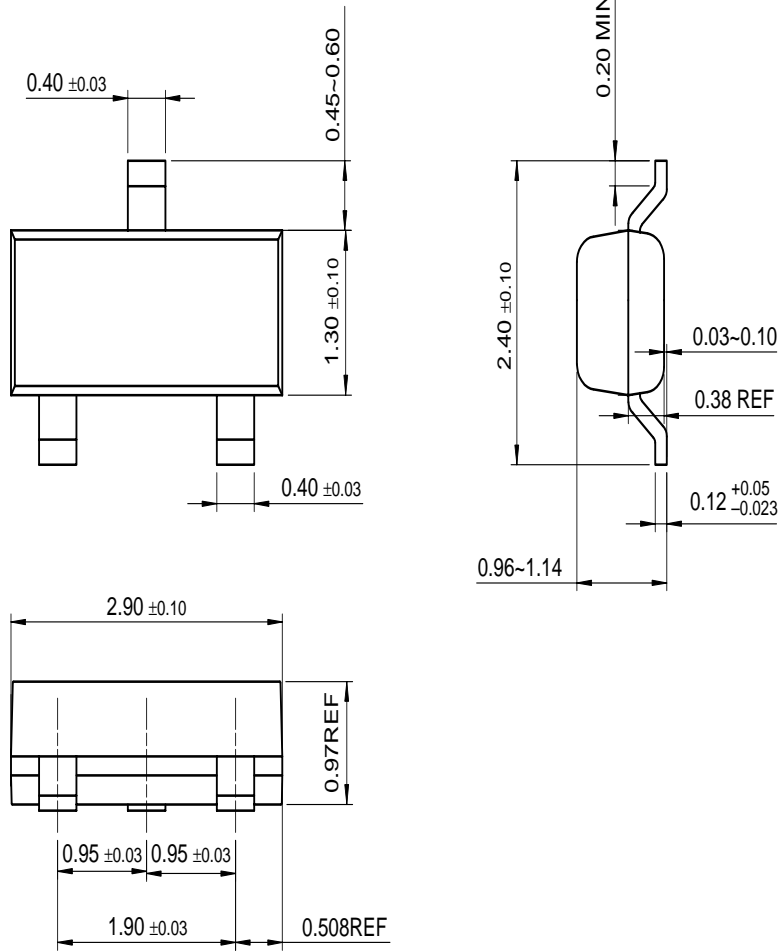


Figure 4. Current Gain Bandwidth Product

Package Dimensions

SOT-23



Dimensions in Millimeters

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E ² CMOS™	LittleFET™	QT Optoelectronics™	TinyLogic™
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