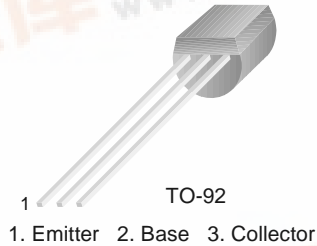


**FAIRCHILD**  
SEMICONDUCTOR®

## KSP92/93

### High Voltage Transistor



### PNP Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	: KSP92	-300
		: KSP93	-200
$V_{CEO}$	Collector-Emitter Voltage	: KSP92	-300
		: KSP93	-200
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-500	mA
$P_C$	Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	625	mW
	Derate above $25^\circ\text{C}$	5	mW/ $^\circ\text{C}$
$P_C$	Collector Power Dissipation ( $T_C=25^\circ\text{C}$ )	1.5	W
	Derate above $25^\circ\text{C}$	12	mW/ $^\circ\text{C}$
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\mu\text{A}, I_E = 0$	: KSP92	-300	V
			: KSP93	-200	V
$BV_{CEO}$	* Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	: KSP92	-300	V
			: KSP93	-200	V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\mu\text{A}, I_C = 0$	-5	V	
$I_{CBO}$	Collector Cur-off Current	$V_{CB} = -200\text{V}, I_E = 0$ $V_{CB} = -160\text{V}, I_E = 0$	: KSP92	-0.25	$\mu\text{A}$
			: KSP93	-0.25	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -3\text{V}, I_C = 0$		-0.10	$\mu\text{A}$
$h_{FE}$	* DC Current Gain	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$ $V_{CE} = -10\text{V}, I_C = -10\text{mA}$ $V_{CE} = -10\text{V}, I_C = -30\text{mA}$	25		
			40		
			25		
$V_{CE}(\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C = -20\text{mA}, I_B = -2\text{mA}$		-0.50	V
$V_{BE}(\text{sat})$	* Base-Emitter Saturation Voltage	$I_C = -20\text{mA}, I_B = -2\text{mA}$		-0.90	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -20\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$	50		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -20\text{V}, I_E = 0$ $f = 1\text{MHz}$	: KSP92	6	pF
			: KSP93	8	pF

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



# Typical Characteristics

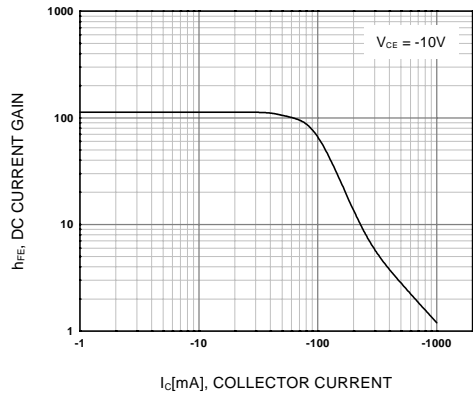


Figure 1. DC current Gain

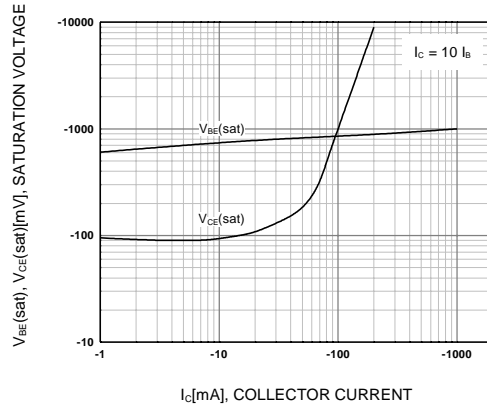


Figure 2. Saturation Voltage

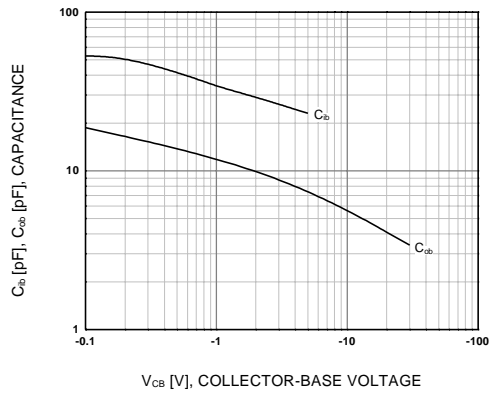


Figure 3. Capacitance

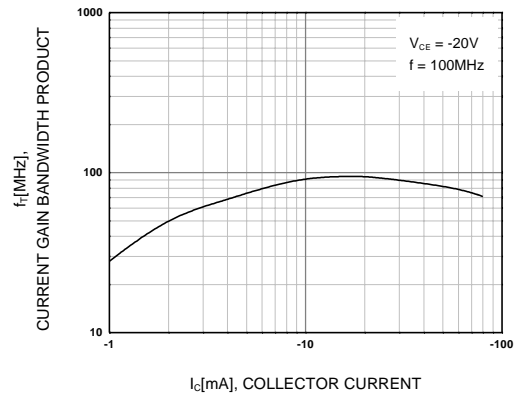


Figure 4. Current Gain Bandwidth Product

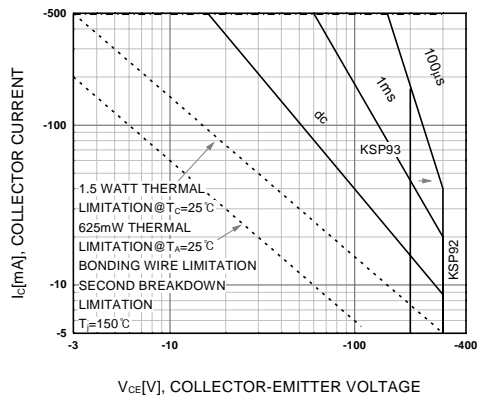
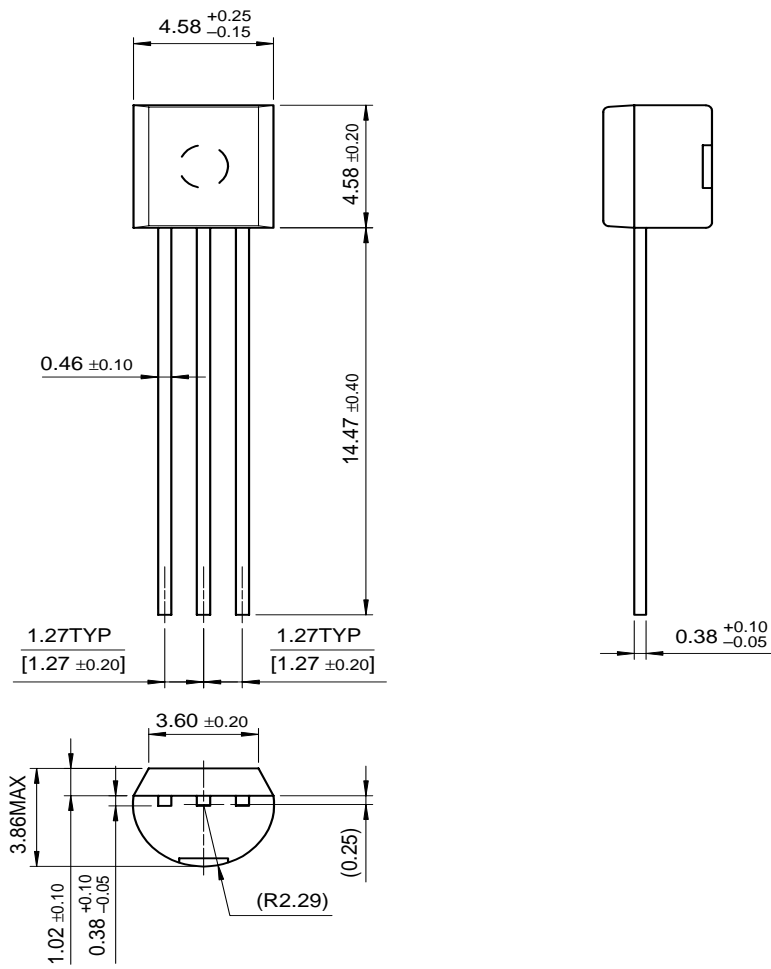


Figure 5. Active-Region Safe Operating Area

# Package Demensions

KSP92/93

## TO-92



Dimensions in Millimeters

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DenseTrench™	GTO™	PowerTrench <sup>®</sup>	SuperSOT™-8
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EcoSPARK™	ISOPLANAR™	QS™	TruTranslation™
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