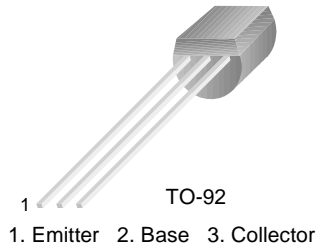


# KSP44/45

## High Voltage Transistor

- Collector-Emitter Voltage:  $V_{CEO}$ =KSP44: 400V  
KSP45: 350V
- Collector Power Dissipation:  $P_C$  (max)=625mW



## 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		
	: KSP44	500	V
	: KSP45	400	V
$V_{CEO}$	Collector-Emitter Voltage		
	: KSP44	400	V
	: KSP45	350	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current	300	mA
$P_C$	Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	625	mW
$P_C$	Collector Power Dissipation ( $T_C=25^\circ\text{C}$ )	1.5	W
$T_J$	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	$I_C=100\mu\text{A}, I_B=0$			
	: KSP44		500		V
	: KSP45		400		V
$BV_{CEO}$	* Collector -Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$			
	: KSP44		400		V
	: KSP45		350		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}, I_C=0$	6		V
$I_{CBO}$	Collector Cut-off Current				
	: KSP44	$V_{CB}=400\text{V}, I_E=0$		0.1	$\mu\text{A}$
	: KSP45	$V_{CB}=320\text{V}, I_E=0$		0.1	$\mu\text{A}$
$I_{CES}$	Collector Cut-off Current				
	: KSP44	$V_{CE}=400\text{V}, I_B=0$		0.5	$\mu\text{A}$
	: KSP45	$V_{CE}=320\text{V}, I_B=0$		0.5	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=4\text{V}, I_C=0$		0.1	$\mu\text{A}$
$h_{FE}$	* DC Current Gain	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40		
		$V_{CE}=10\text{V}, I_C=10\text{mA}$	50	200	
		$V_{CE}=10\text{V}, I_C=50\text{mA}$	45		
		$V_{CE}=10\text{V}, I_C=100\text{mA}$	40		
$V_{CE}(\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C=1\text{mA}, I_B=0.1\text{mA}$		0.4	V
		$I_C=10\text{mA}, I_B=1\text{mA}$		0.5	V
		$I_C=50\text{mA}, I_B=5\text{mA}$		0.75	V
$V_{BE}(\text{sat})$	* Base-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$		0.75	V
$C_{ob}$	Output Capacitance	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$		7	pF

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

# Typical Characteristics

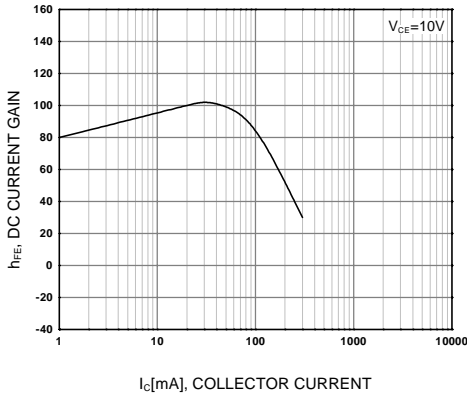


Figure 1. DC current Gain

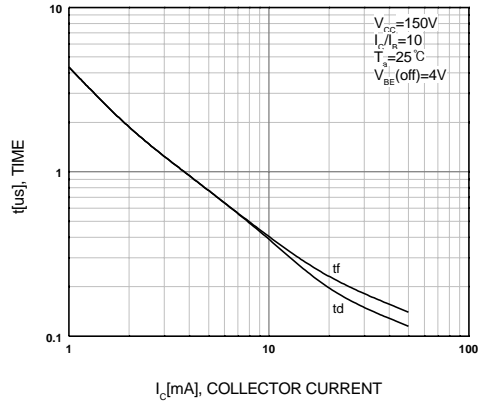


Figure 2. Turn-On Switching Times

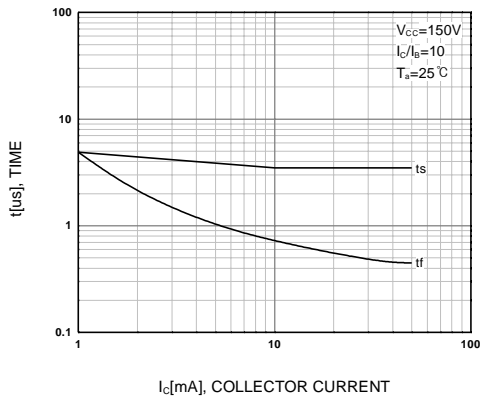


Figure 3. Turn-Off Switching Times

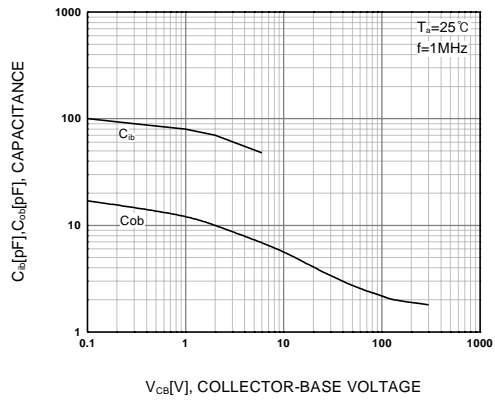


Figure 4. Capacitance

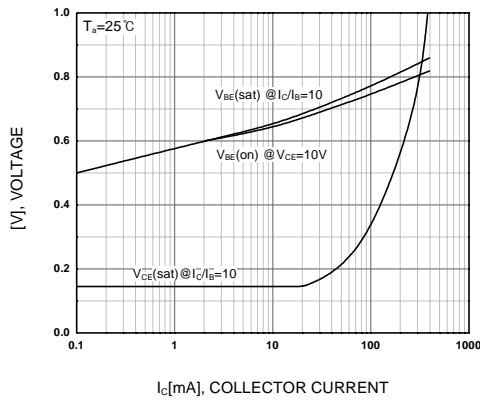


Figure 5. On Voltage

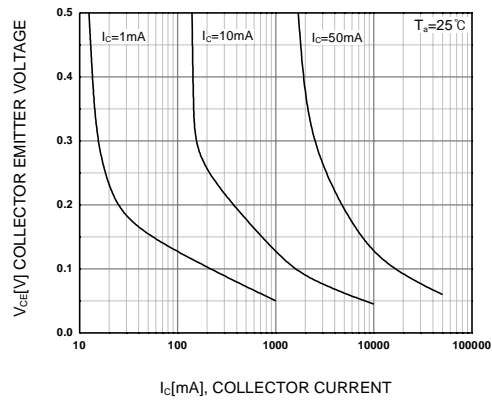


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

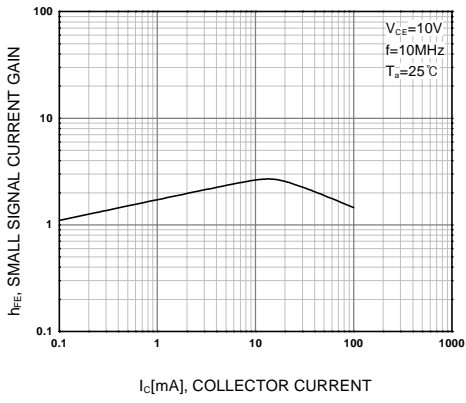


Figure 7. High Frequency Current Gain

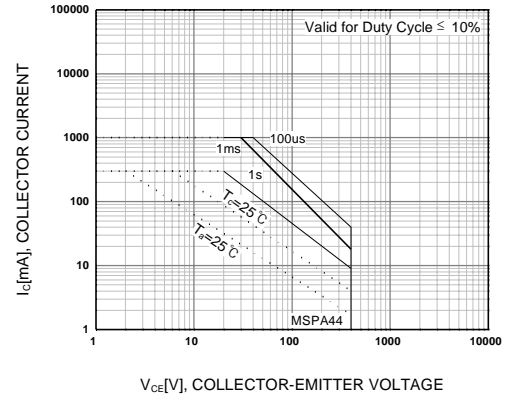
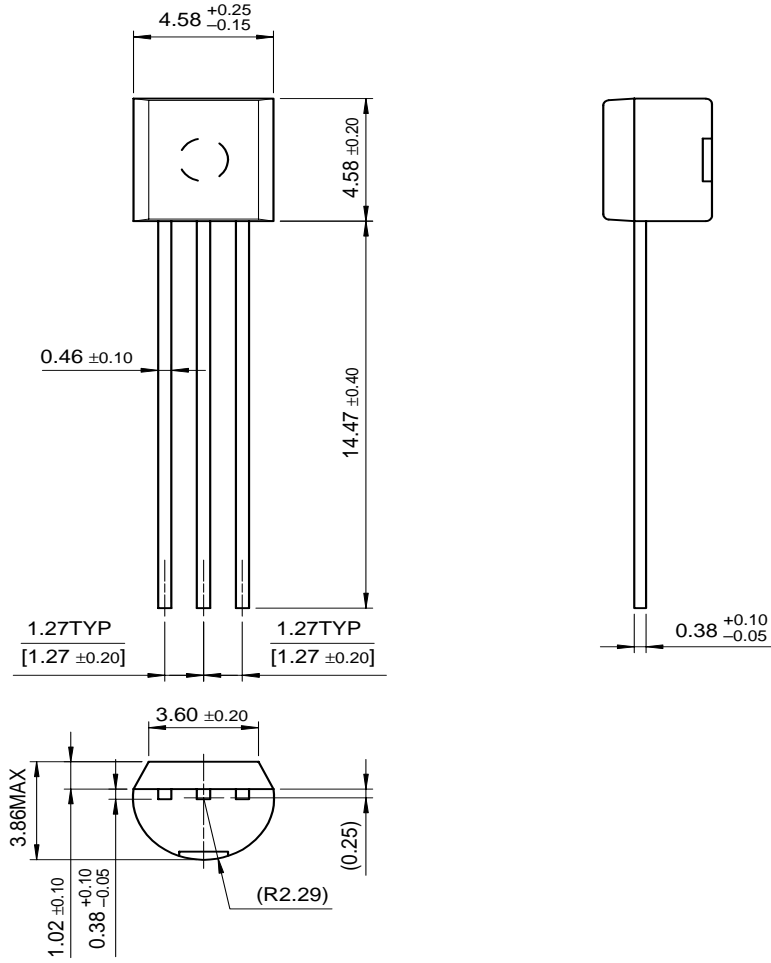


Figure 8. Safe Operating Area

# Package Dimensions

## TO-92



Dimensions in Millimeters

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