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# PNP Epitaxial Silicon Transistor

## KSP92

### Description

High Voltage Transistor

### Features

- These Devices are Pb-Free, Halogen Free/BFR Free, Beryllium Free and are RoHS Compliant

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ , unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-300	V
$V_{CEO}$	Collector-Emitter Voltage	-300	V
$V_{EBO}$	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	$^\circ\text{C}$

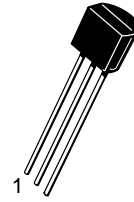
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

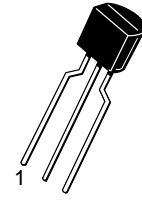
Symbol	Parameter	Test Condition	Min	Max	Unit
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100 \mu\text{A}$ , $I_E = 0$	-300	-	V
$BV_{CEO}$	* Collector-Emitter Breakdown Voltage	$I_C = -1 \text{ mA}$ , $I_B = 0$	-300	-	V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100 \mu\text{A}$ , $I_C = 0$	-5	-	V
$I_{CBO}$	Collector Cur-off Current	$V_{CB} = -200 \text{ V}$ , $I_E = 0$	-	-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	$V_{CB} = -20 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$	-	6	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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



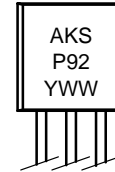
TO-92 3  
4.825x4.76  
CASE 135AN



TO-92 3  
4.83x4.76  
LEADFORMED  
CASE 135AR

1. Emitter
2. Base
3. Collector

### MARKING DIAGRAM



KSP92 = Specific Device Code  
A = Assembly Site  
WW = Work Week Number  
Y = Year of Production

### ORDERING INFORMATION

Device	Package	Packing Method
KSP92BU	TO-92 3, CASE 135AN	10000 Units / Bulk Bag
KSP92TA	TO-92 3, CASE 135AR	2000 Units / Fan-Fold

## TYPICAL PERFORMANCE CHARACTERISTICS

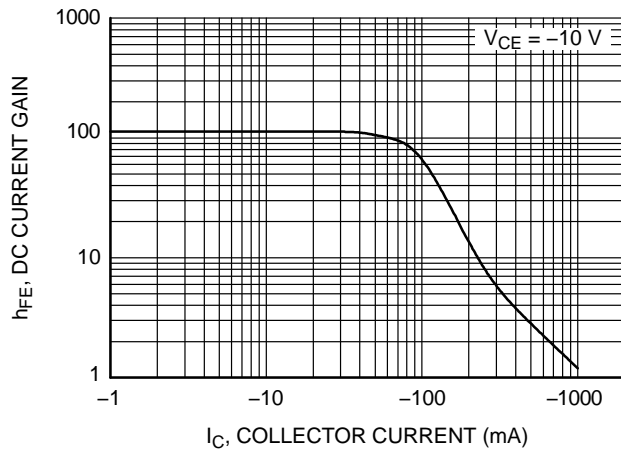


Figure 1. DC Current Gain

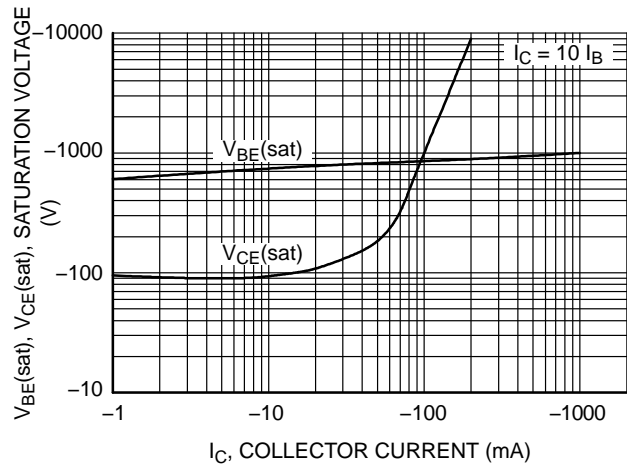


Figure 2. Saturation Voltage

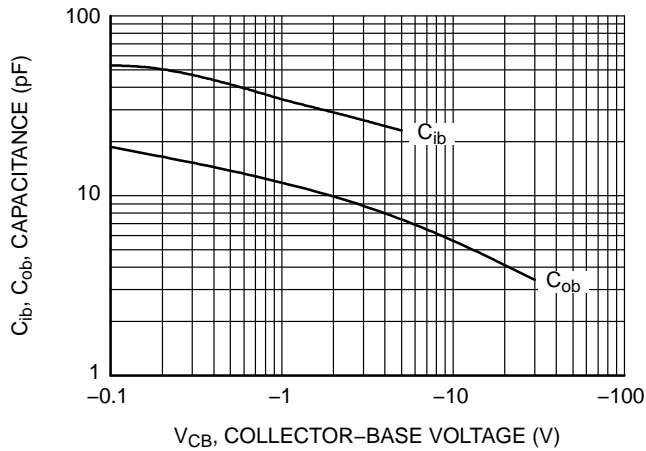


Figure 3. Capacitance

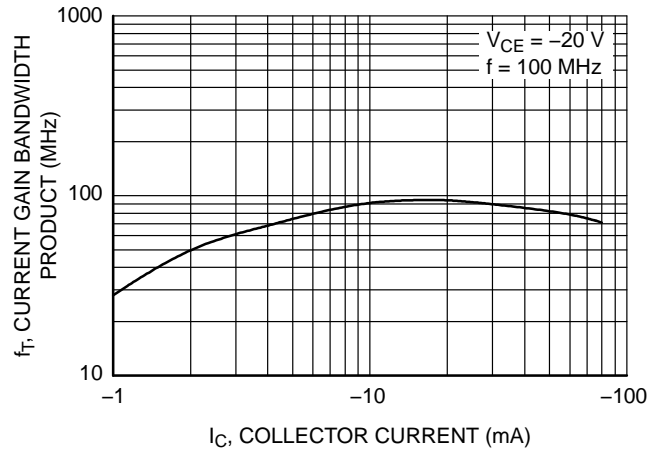


Figure 4. Current Gain Bandwidth Product

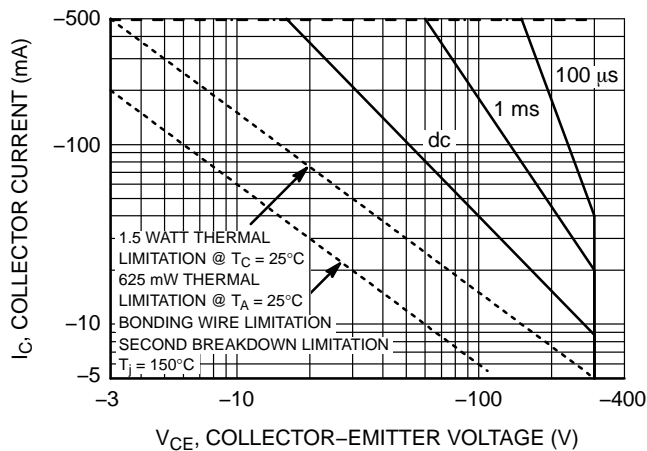
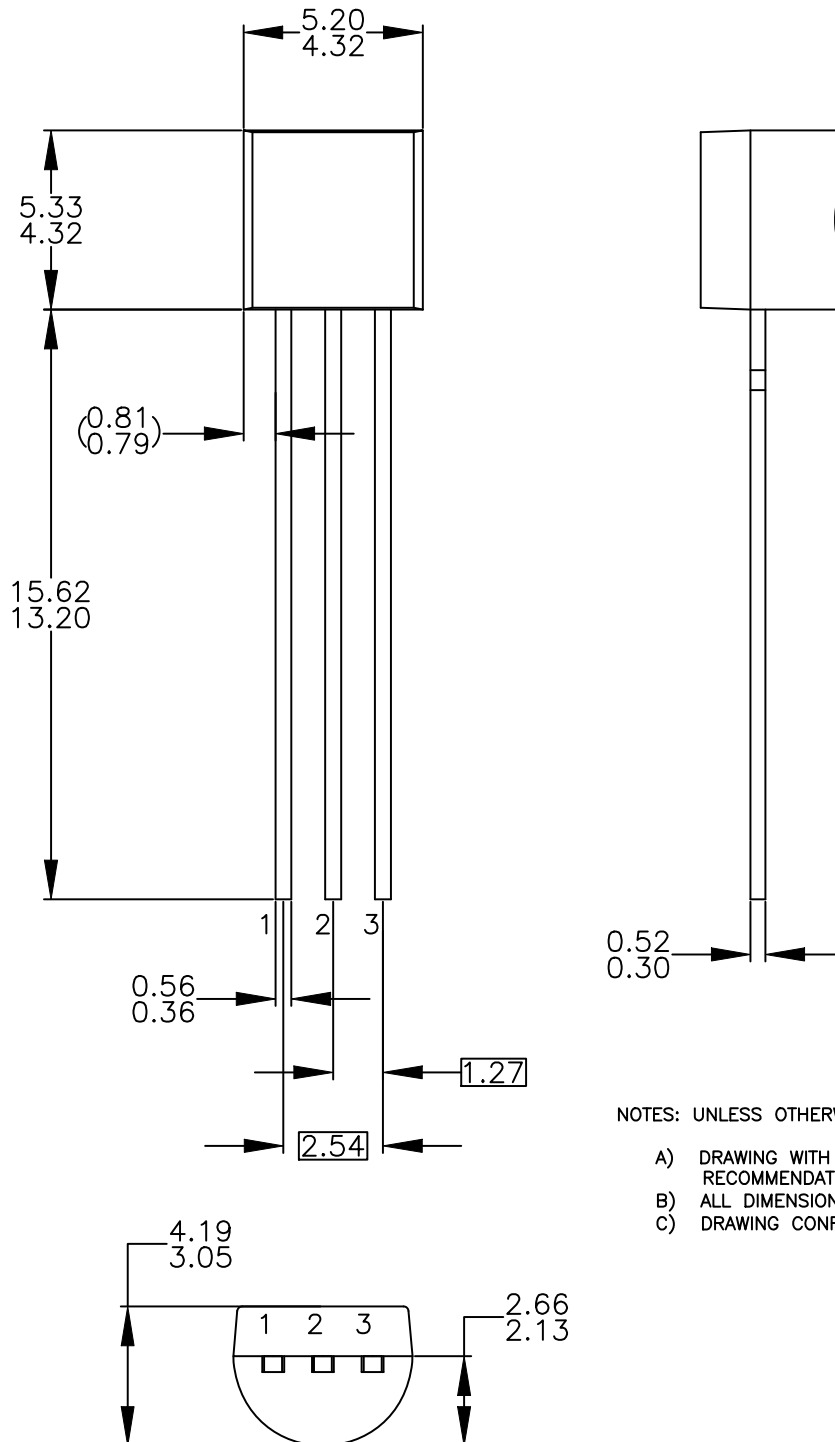


Figure 5. Active-Region Safe Operating Area

**TO-92 3 4.825x4.76**  
**CASE 135AN**  
**ISSUE O**

DATE 31 JUL 2016



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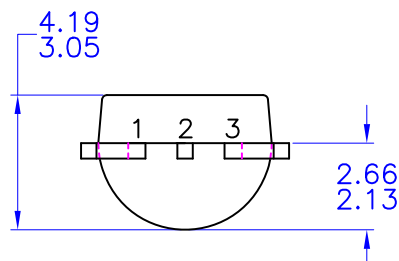
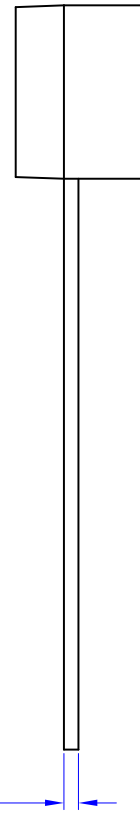
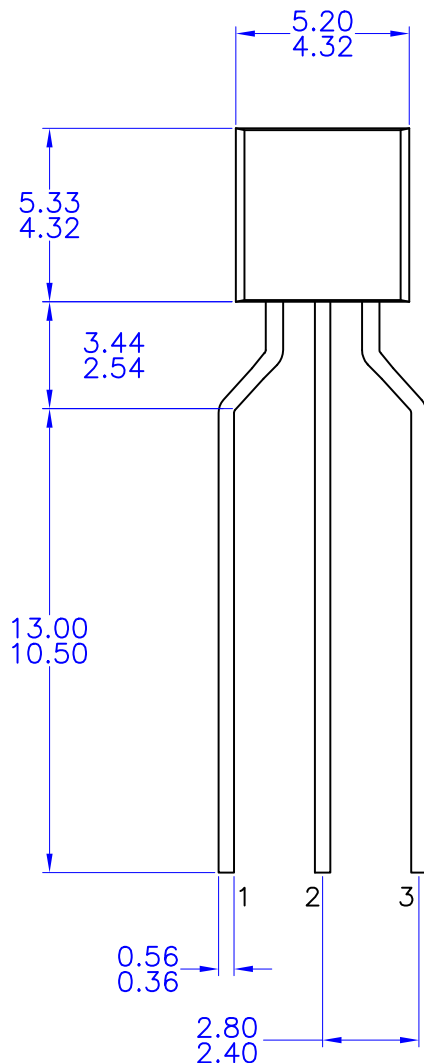
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CASE 135AR  
ISSUE O

DATE 30 SEP 2016



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