

NPN Epitaxial Silicon Transistor

KSP42, KSP43

Features

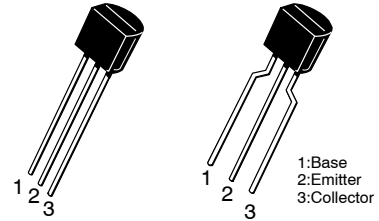
- Collector–Emitter Voltage:
 - ◆ KSP42: $V_{CEO} = 300\text{ V}$
 - ◆ KSP43: $V_{CEO} = 200\text{ V}$
- Collector Dissipation: $P_C (\text{max.}) = 625\text{ mW}$
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

ABSOLUTE MAXIMUM RATINGS

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter		Value	Unit
V_{CBO}	Collector–Base Voltage	KSP42	300	V
		KSP43	200	
V_{CEO}	Collector–Emitter Voltage	KSP42	300	V
		KSP43	200	
V_{EBO}	Emitter–Base Voltage		6	V
I_C	Collector Current		500	mA
P_C	Collector Power Dissipation		625	mW
T_J	Junction Temperature		150	$^\circ\text{C}$
T_{STG}	Storage Temperature		–55 to 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.



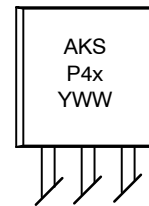
STRAIGHT LEAD
BULK PACK

TO–92–3
CASE 135AN

BENT LEAD
TAPE & REEL
AMMO PACK

TO–92 LF
CASE 135AR

MARKING DIAGRAM



A = Assembly Code
KSP4x = Device Code (x = 2 or 3)
Y = Year
WW = Work Week

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

KSP42, KSP43

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping
KSP42BU	KSP42	TO-92-3 (Pb-Free), case 135AN	10,000 units / Bulk Bag
KSP42TA	KSP42	TO-92-3 (Pb-Free), case 135AR	2,000 units / Fan-Fold
KSP43BU	KSP43	TO-92-3 (Pb-Free), case 135AN	10,000 units / Bulk Bag
KSP43TA	KSP43	TO-92-3 (Pb-Free), case 135AR	2,000 units / Fan-Fold

ELECTRICAL CHARACTERISTICS

(Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Conditions	Min.	Max.	Unit	
BV_{CBO}	Collector-Base Breakdown Voltage	KSP42	$I_C = 100 \mu\text{A}, I_E = 0$	300	V	
		KSP43		200		
BV_{CEO}	Collector-Emitter Breakdown Voltage (Note 1)	KSP42	$I_C = 1 \text{ mA}, I_B = 0$	300	V	
		KSP43		200		
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100 \mu\text{A}, I_C = 0$	6		V	
I_{CBO}	Collector Cut-Off Current	KSP42	$V_{CB} = 200 \text{ V}, I_E = 0$		100	nA
		KSP43	$V_{CB} = 160 \text{ V}, I_E = 0$		100	
I_{EBO}	Emitter Cut-Off Current	KSP42	$V_{EB} = 6 \text{ V}, I_C = 0$		100	nA
		KSP43	$V_{EB} = 4 \text{ V}, I_C = 0$		100	
h_{FE}	DC Current Gain (Note 1)		$V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}$	25		
			$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$	40		
			$V_{CE} = 10 \text{ V}, I_C = 30 \text{ mA}$	40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 1)	$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$		0.5	V	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 1)	$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$		0.9	V	
C_{ob}	Output Capacitance	KSP42	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		3	pF
		KSP43			4	
f_T	Current Gain Bandwidth Product	$V_{CE} = 20 \text{ V}, I_C = 10 \text{ mA}, f = 100 \text{ MHz}$	50		MHz	

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.

1. Pulse test: pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

TYPICAL PERFORMANCE CHARACTERISTICS

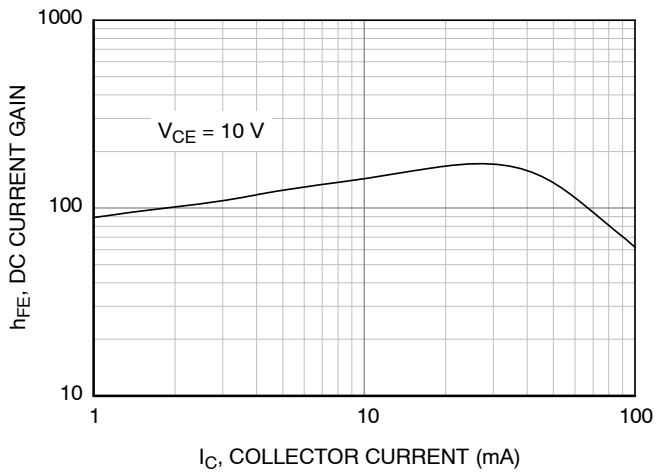


Figure 1. DC Current Gain

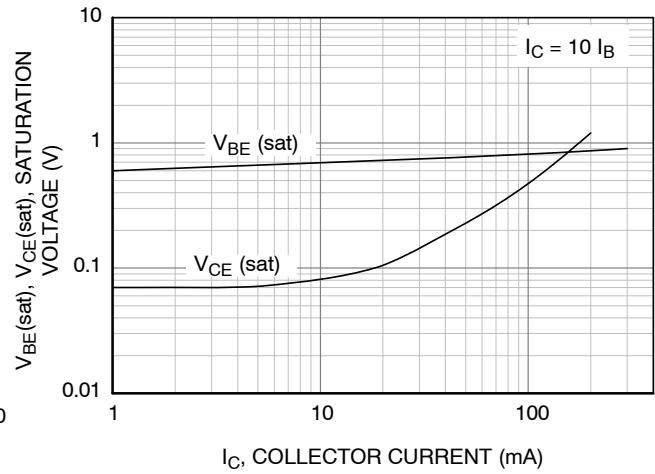


Figure 2. Collector-Emitter Saturation Voltage and Base-Emitter Saturation Voltage

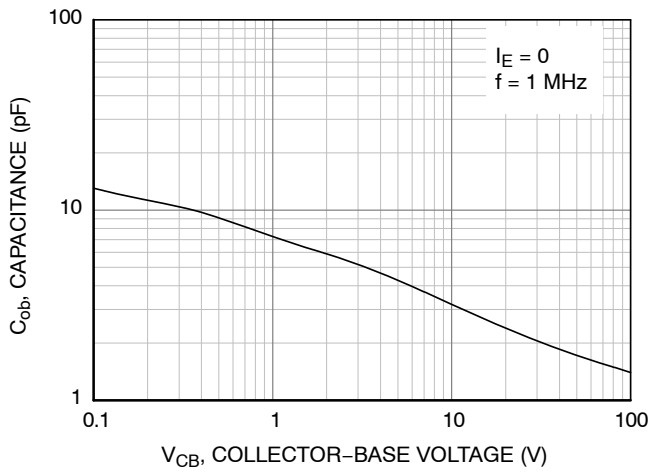


Figure 3. Current Gain Bandwidth Product

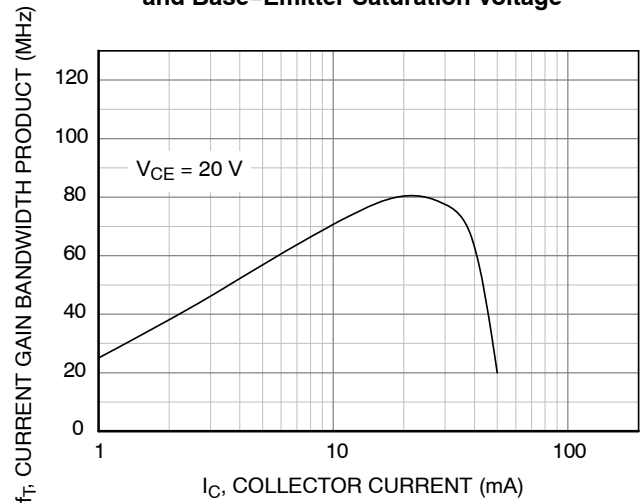
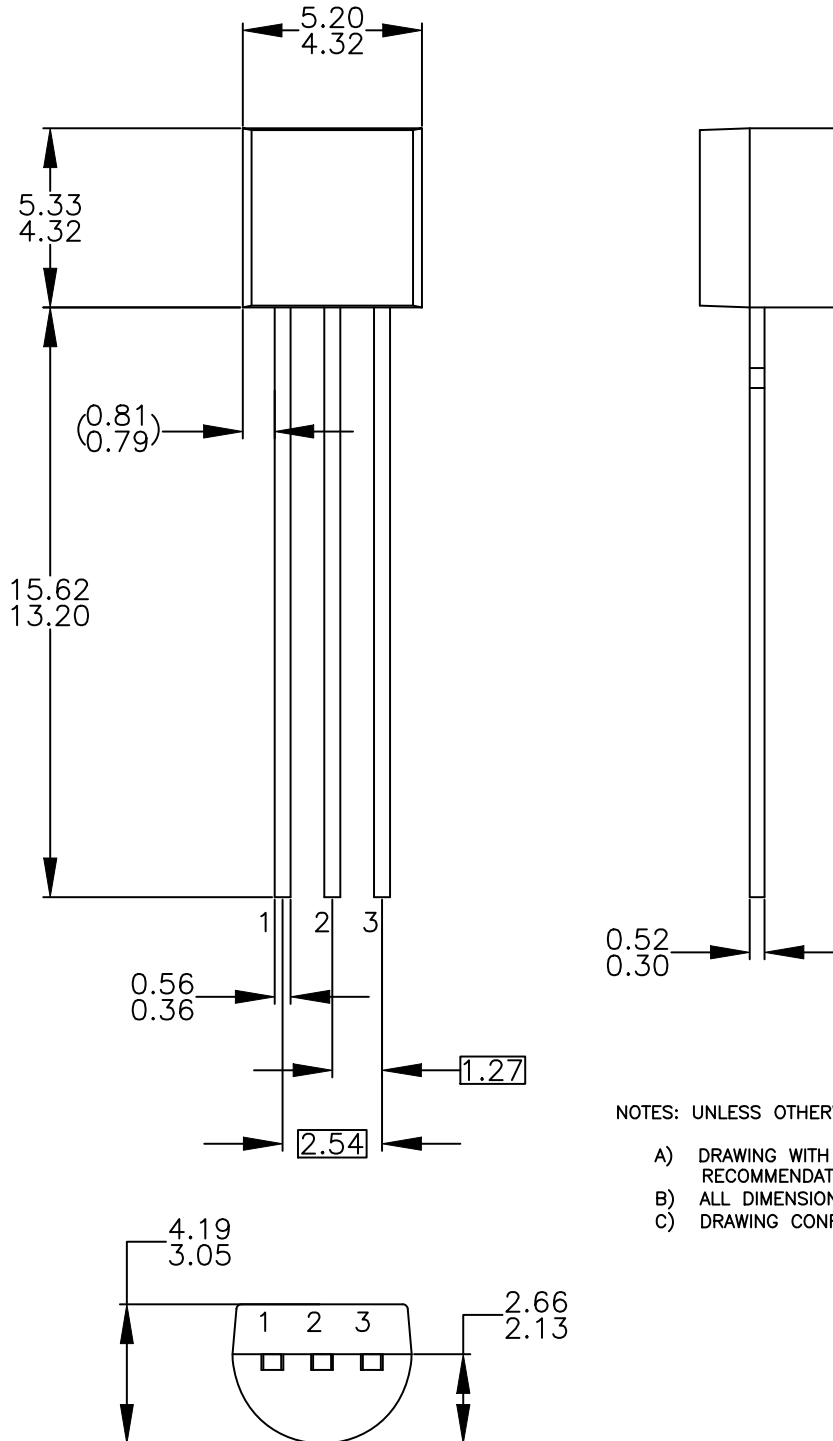


Figure 4. Current Gain Bandwidth Product

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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

DATE 31 JUL 2016



NOTES: UNLESS OTHERWISE SPECIFIED

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


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