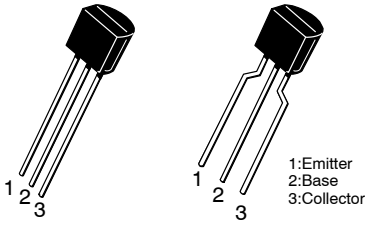
NPN Epitaxial Silicon Transistor

KSP42, KSP43



STRAIGHT LEAD
BULK PACK

TO−92−3
CASE 135AN

BENT LEAD
TAPE & REEL
AMMO PACK

TO−92 LF
CASE 135AR

Features

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

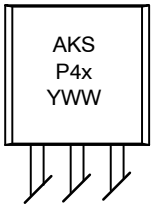
ABSOLUTE MAXIMUM RATINGS

Values are at T_A = 25°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	°C
T_{STG}	Storage Temperature		−55 to 150	°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.

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.

NOTE: Some of the devices on this data sheet have been **DISCONTINUED**. Please refer to the table on page 2.

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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
KSP43TA	KSP43	TO−92−3 (Pb−Free), case 135AR	2,000 units / Fan−Fold

DISCONTINUED (Note 1)

KSP43BU	KSP43	TO−92−3 (Pb−Free), case 135AN	10,000 units / Bulk Bag

1. **DISCONTINUED:** This device is not recommended for new design. Please contact your **onsemi** representative for information. The most current information on this device may be available on www.onsemi.com.

ELECTRICAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.)

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

2. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2%.

TYPICAL PERFORMANCE CHARACTERISTICS

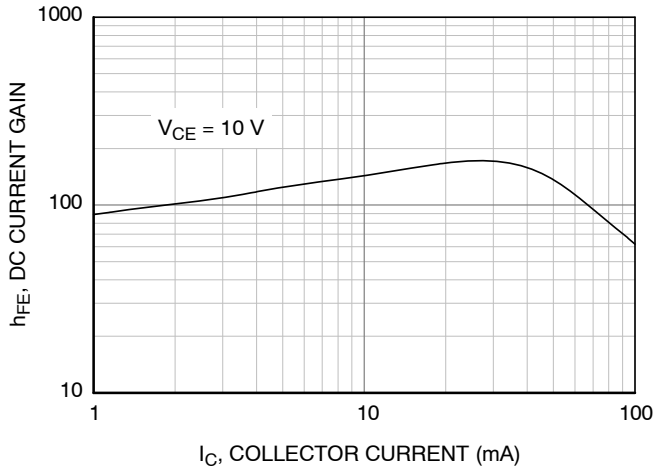


Figure 1. DC Current Gain

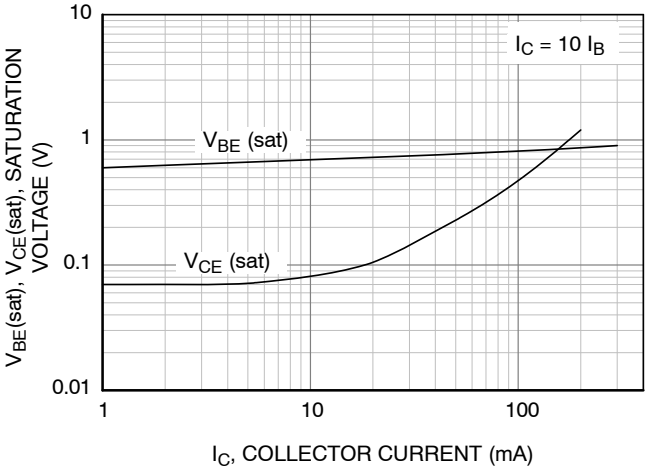


Figure 2. Collector−Emitter Saturation Voltage and Base−Emitter Saturation Voltage

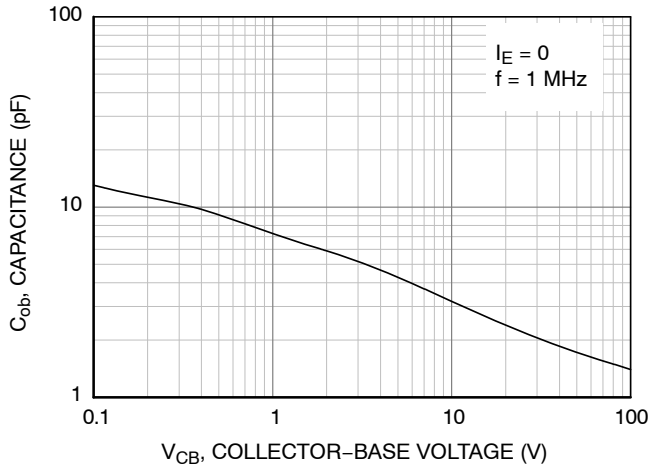


Figure 3. Current Gain Bandwidth Product

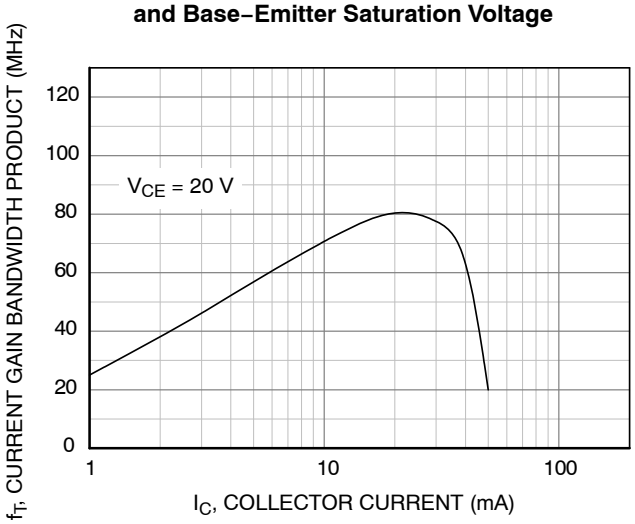
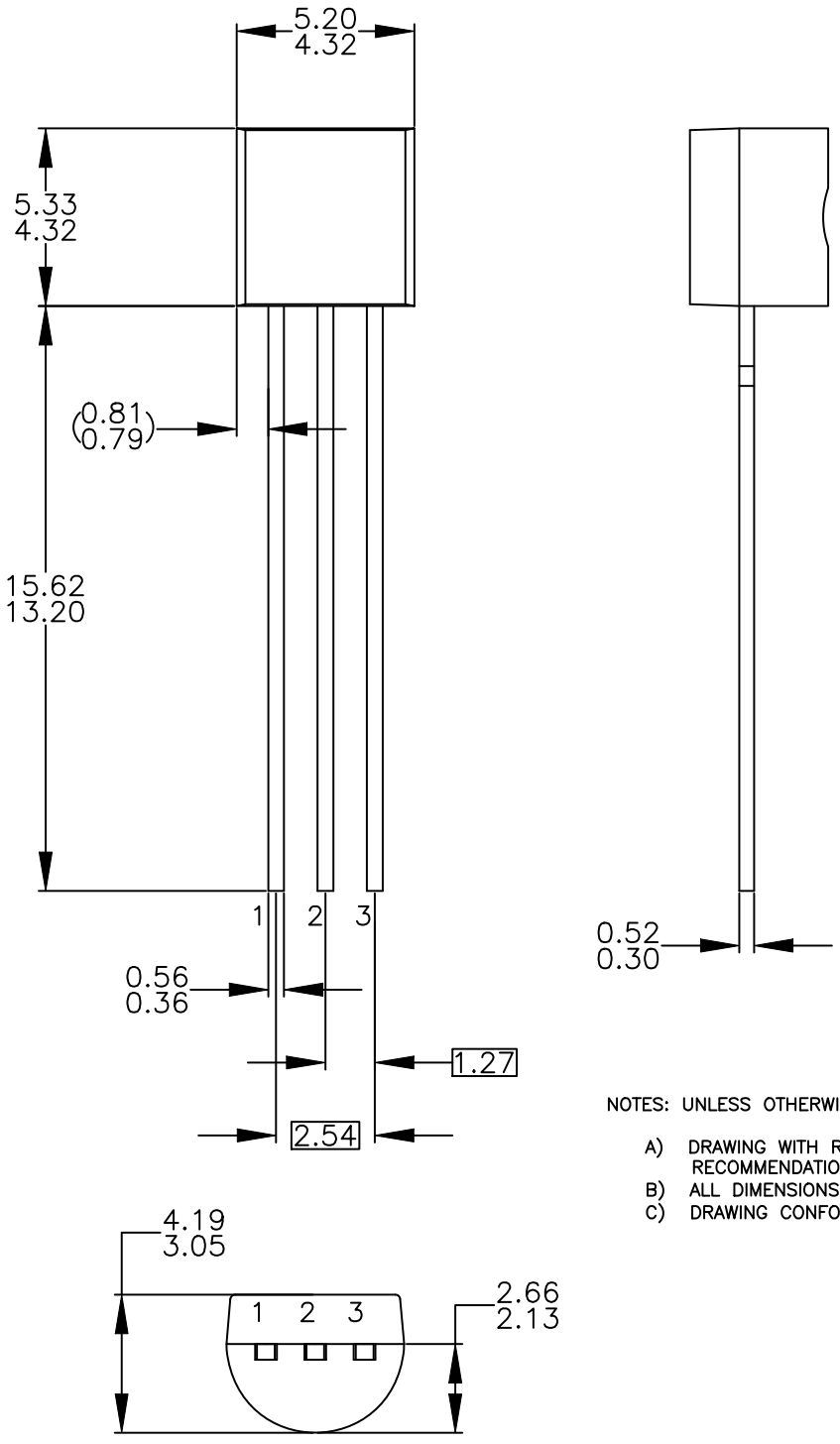


Figure 4. Current Gain Bandwidth Product

TO−92 3 4.825x4.76
CASE 135AN
ISSUE O

DATE 31 JUL 2016



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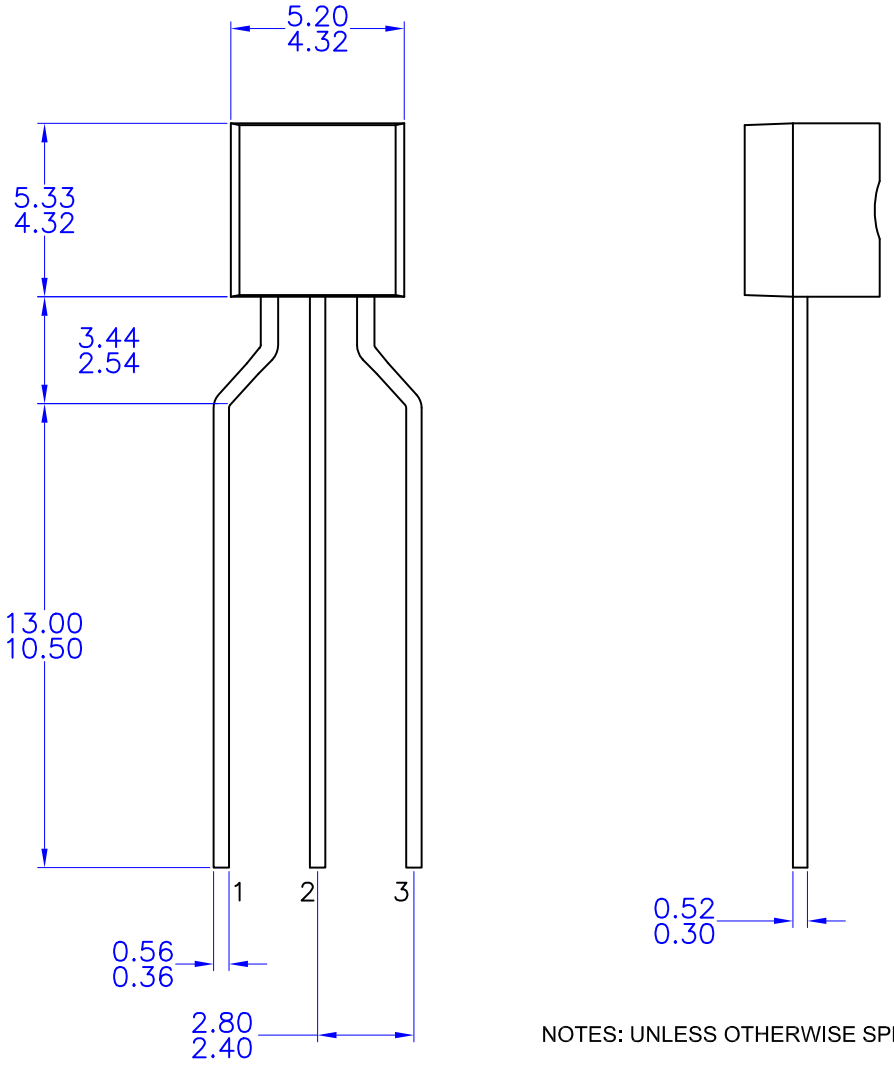
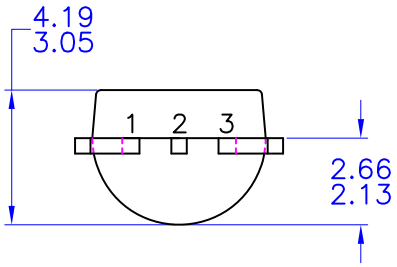
TO−92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

DATE 30 SEP 2016





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