

KSP43TA Datasheet

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DiGi Electronics Part Number	KSP43TA-DG
Manufacturer	onsemi
Manufacturer Product Number	KSP43TA
Description	TRANS NPN 200V 0.5A TO92-3
Detailed Description	Bipolar (BJT) Transistor NPN 200 V 500 mA 50MHz 6 25 mW Through Hole TO-92-3



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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Purchase and inquiry

Manufacturer Product Number:

KSP43TA

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

200 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

625 mW

Operating Temperature:

150°C (TJ)

Package / Case:

TO-226-3, TO-92-3 (TO-226AA) Formed Leads

Base Product Number:

KSP43

Manufacturer:

onsemi

Product Status:

Active

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

500mV @ 2mA, 20mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

40 @ 30mA, 10V

Frequency - Transition:

50MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-92-3

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0095

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99

NPN Epitaxial Silicon Transistor

KSP42, KSP43

Features

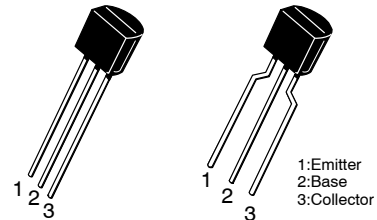
- Collector–Emitter Voltage:
 - ◆ KSP42: $V_{CEO} = 300\text{ V}$
 - ◆ KSP43: $V_{CEO} = 200\text{ V}$
- Collector Dissipation: $P_C (\text{max.}) = 625\text{ mW}$
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

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.



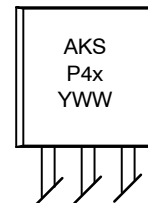
STRAIGHT LEAD
BULK PACK

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.

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

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
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
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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 $T_A = 25^\circ\text{C}$ 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 2)	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 2)		$V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}$	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 2)		$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$		0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 2)		$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$		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.

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

KSP42, KSP43

TYPICAL PERFORMANCE CHARACTERISTICS

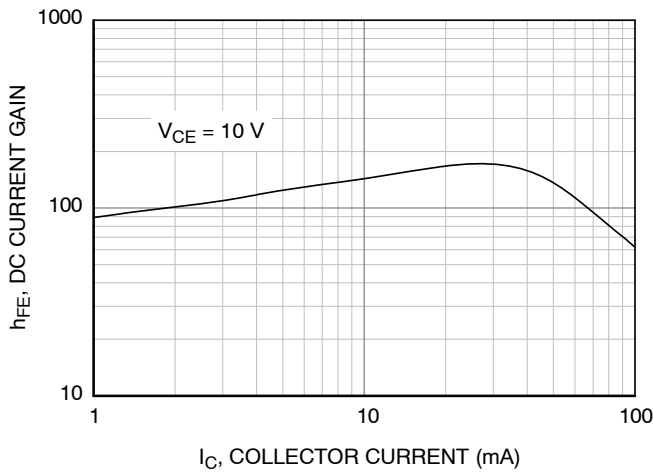


Figure 1. DC Current Gain

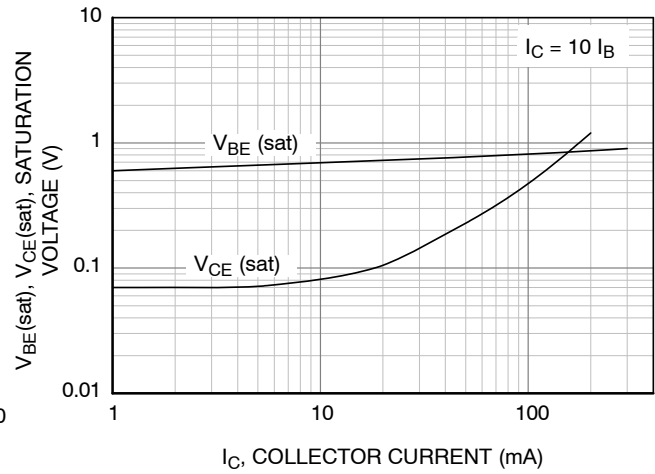


Figure 2. Collector-Emitter Saturation Voltage and Base-Emitter Saturation Voltage

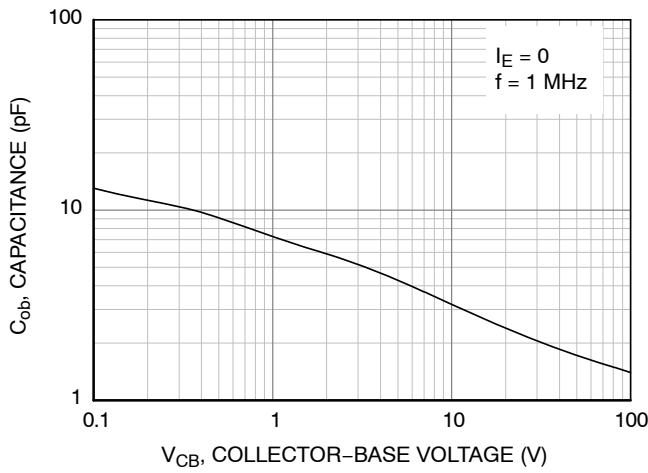


Figure 3. Current Gain Bandwidth Product

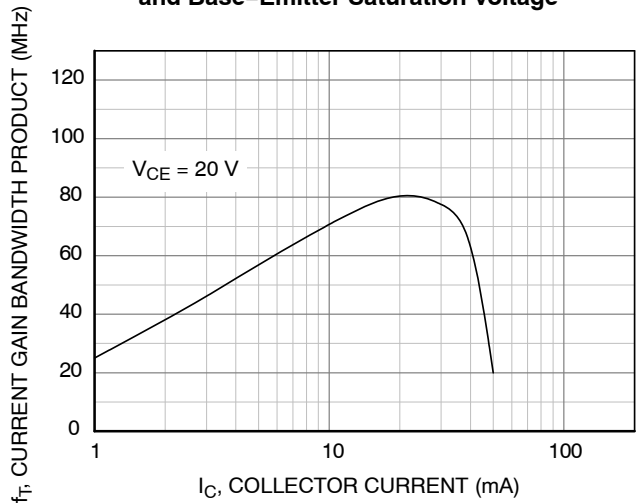
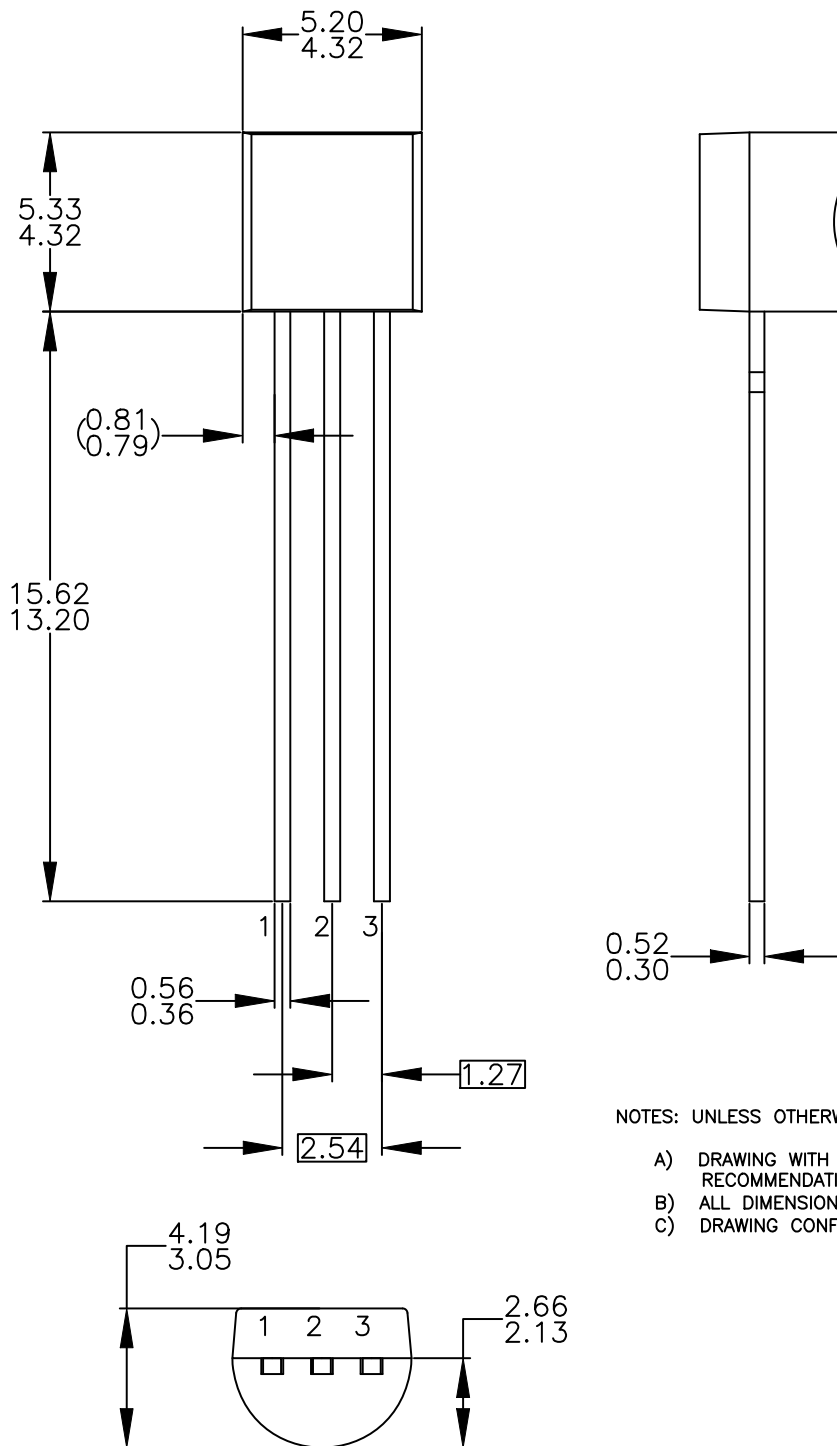


Figure 4. Current Gain Bandwidth Product

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

DATE 31 JUL 2016



NOTES: UNLESS OTHERWISE SPECIFIED

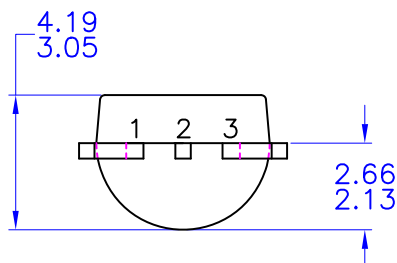
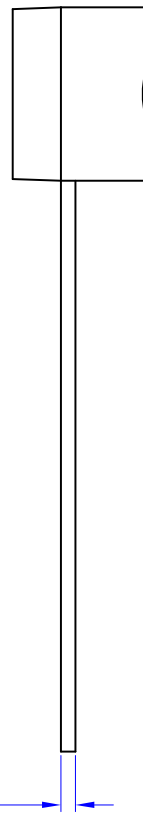
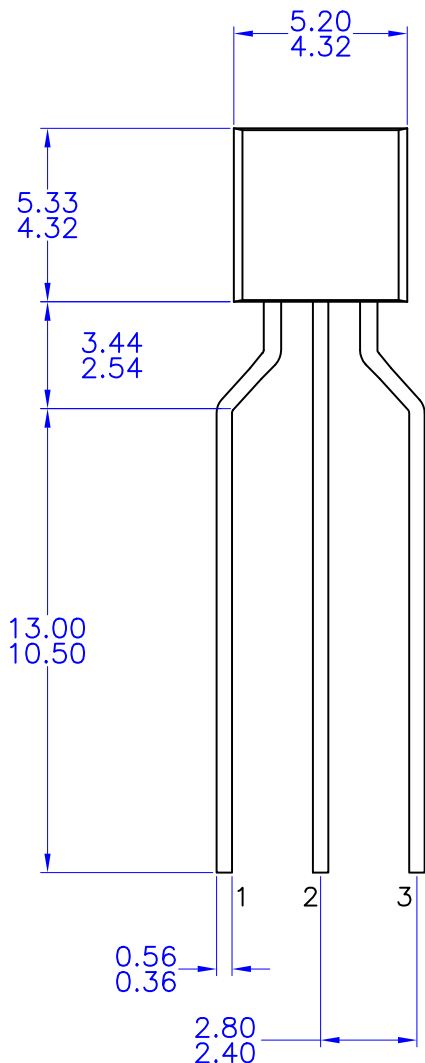
- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
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TO-92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

DATE 30 SEP 2016



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