

KSA992FBTA Datasheet

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DiGi Electronics Part Number	KSA992FBTA-DG
Manufacturer	onsemi
Manufacturer Product Number	KSA992FBTA
Description	TRANS PNP 120V 0.05A TO92-3
Detailed Description	Bipolar (BJT) Transistor PNP 120 V 50 mA 100MHz 500 mW Through Hole TO-92-3



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Purchase and inquiry

Manufacturer Product Number:

KSA992FBTA

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

120 V

Current - Collector Cutoff (Max):

1 μ A

Power - Max:

500 mW

Operating Temperature:

150°C (TJ)

Package / Case:

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

Base Product Number:

KSA992

Manufacturer:

onsemi

Product Status:

Active

Current - Collector (Ic) (Max):

50 mA

Vce Saturation (Max) @ Ib, Ic:

300mV @ 1mA, 10mA

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

430 @ 1mA, 6V

Frequency - Transition:

100MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-92-3

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

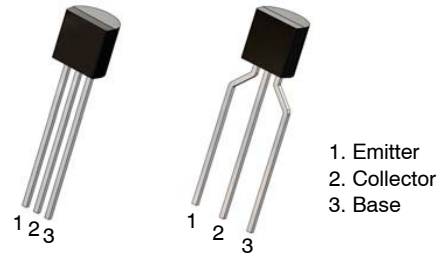
EAR99

PNP Epitaxial Silicon Transistor

KSA992

Features

- Audio Frequency Low-Noise Amplifier
- Complement to KSC1845
- These are Pb-Free Devices



TO-92 3 4.825x4.76 CASE 135AN
 TO-92 3 4.83x4.76 LEADFORMED CASE 135AR

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-120	V
V_{CEO}	Collector-Emitter Voltage	-120	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-50	mA
I_B	Base Current	-10	mA
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.

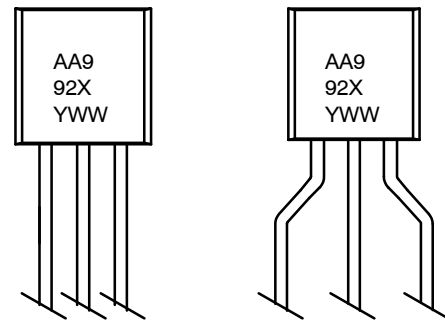
THERMAL CHARACTERISTICS

(Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.) (Note 1)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	500	mW
	Derate Above 25°C	4	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	$^\circ\text{C}/\text{W}$

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

MARKING DIAGRAMS



A = Assembly Code
 A992 = Device Code
 X = F / FA / FB
 YWW = Date Code

ORDERING INFORMATION

Device	Package	Shipping
KSA992FBU	TO-92 3 (Pb-Free)	10000 Units / Bulk Bag
KSA992FTA	TO-92 3 LF (Pb-Free)	2000 / Fan-Fold
KSA992FATA	TO-92 3 LF (Pb-Free)	2000 / Fan-Fold
KSA992FBTA	TO-92 3 LF (Pb-Free)	2000 / Fan-Fold

KSA992**ELECTRICAL CHARACTERISTICS** (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{CBO}	Collector Cut-Off Current	$V_{CB} = -120\text{ V}, I_E = 0$	-	-	-50	nA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = -100\text{ V}, I_B = 0$	-	-	-1	μA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = -5\text{ V}, I_C = 0$	-	-	-50	nA
h_{FE1}	DC Current Gain	$V_{CE} = -6\text{ V}, I_C = -0.1\text{ mA}$	150	500	-	
h_{FE2}		$V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$	300	450	600	
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$	-0.55	-0.61	-0.65	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{ mA}, I_B = -1\text{ mA}$	-	-0.09	-0.30	V
f_T	Current Gain Bandwidth Product	$V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$	50	100	-	MHz
C_{ob}	Output Capacitance	$V_{CB} = -30\text{ V}, I_E = 0, f = 1\text{ MHz}$	-	2	3	pF
NF	Noise Figure	$V_{CE} = -5\text{ V}, I_C = -1.0\text{ mA},$ $R_S = 100\text{ k}\Omega, f = 1\text{ kHz}$	-	7	-	dB

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.

 h_{FE} CLASSIFICATION

Classification	F	FA	FB
h_{FE2}	300~600	300~470	430~600

KSA992

TYPICAL PERFORMANCE CHARACTERISTICS

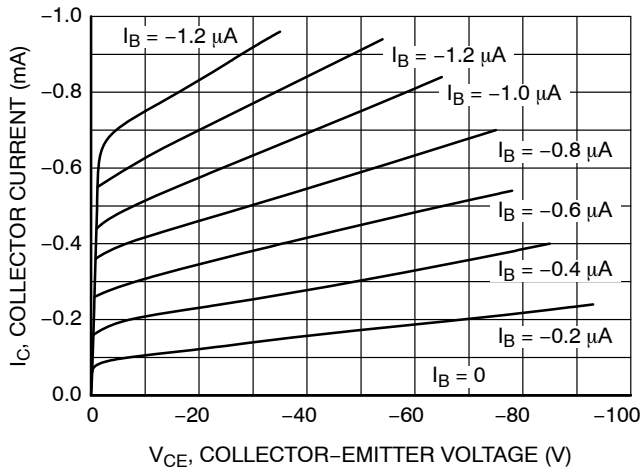


Figure 1. Static Characteristic

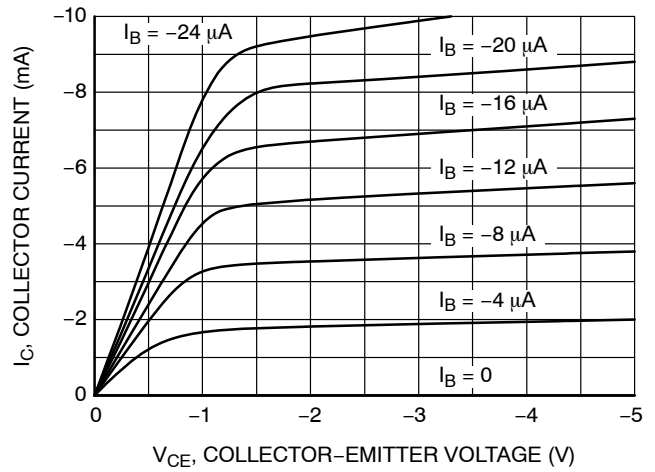


Figure 2. Static Characteristic

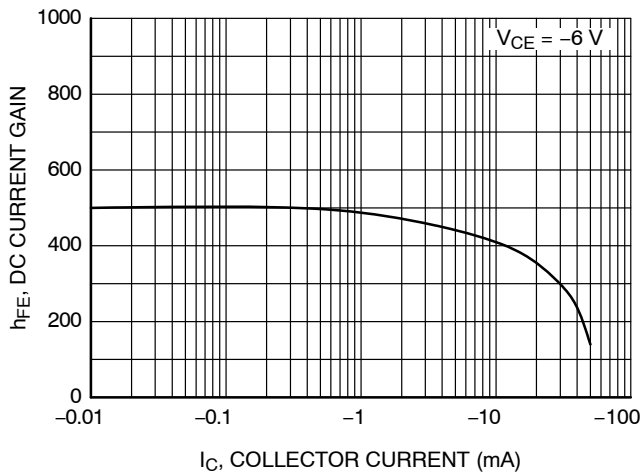


Figure 3. DC Current Gain

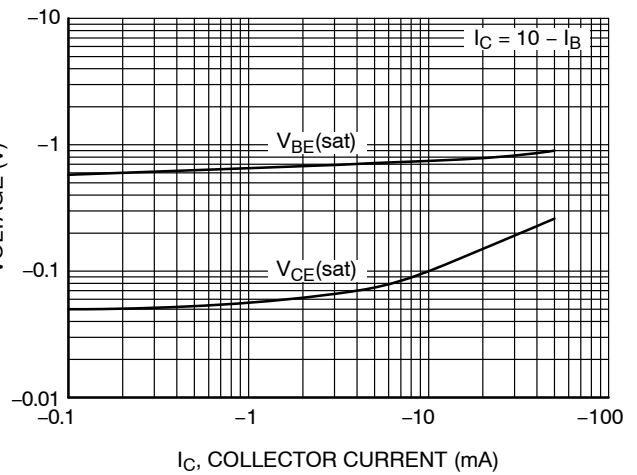


Figure 4. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

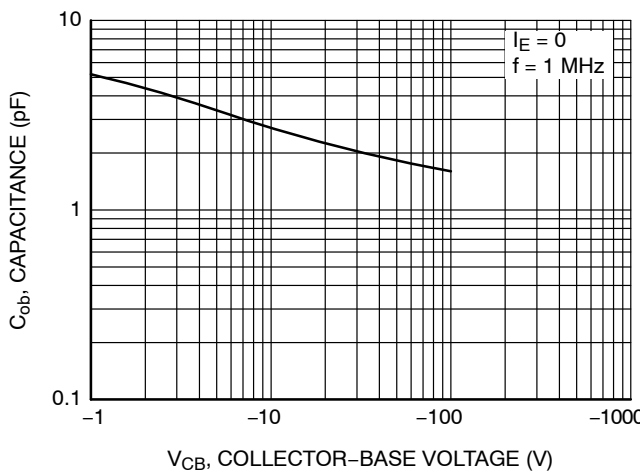


Figure 5. Collector Output Capacitance

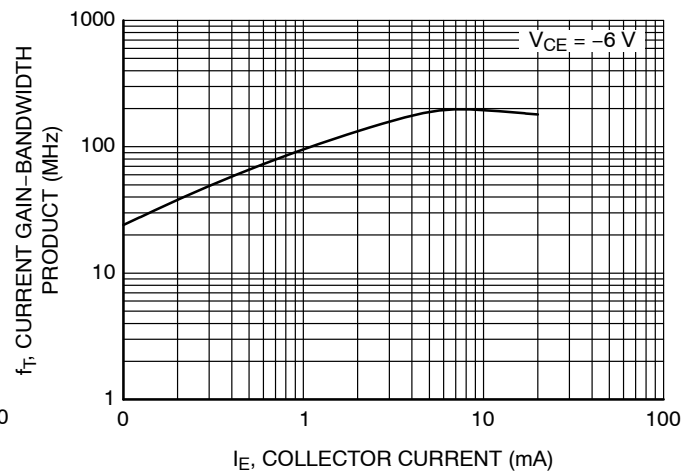


Figure 6. Current Gain Bandwidth Product

KSA992

TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

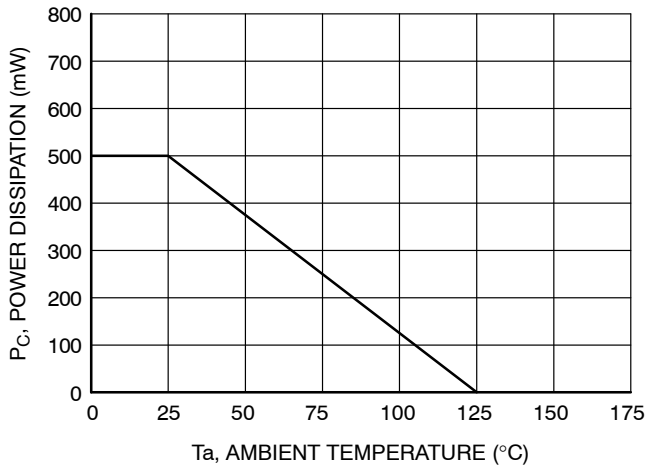
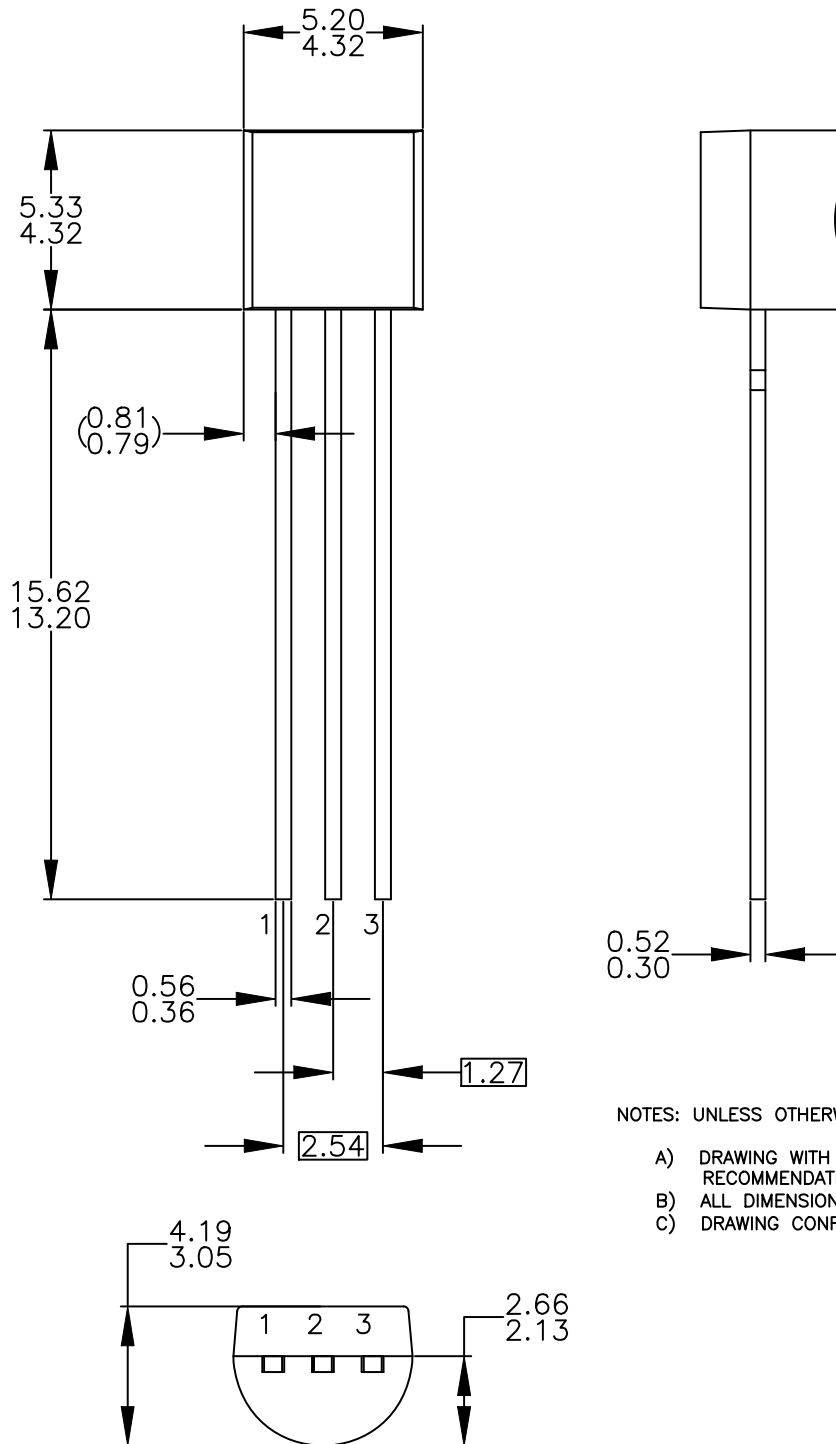


Figure 7. Power Derating

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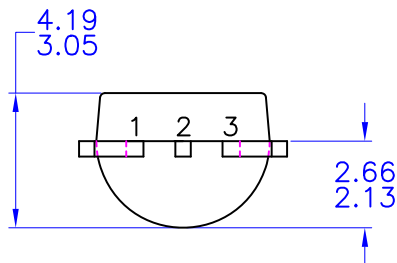
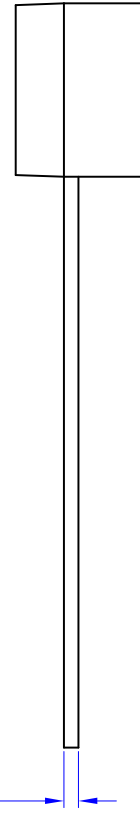
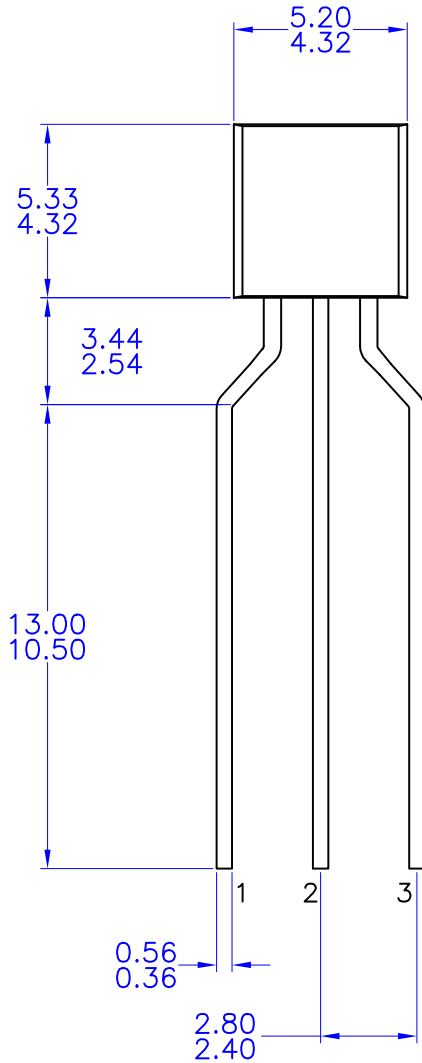
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