

KSA916YBU Datasheet

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DiGi Electronics Part Number	KSA916YBU-DG
Manufacturer	onsemi
Manufacturer Product Number	KSA916YBU
Description	TRANS PNP 120V 0.8A TO92-3
Detailed Description	Bipolar (BJT) Transistor PNP 120 V 800 mA 120MHz 900 mW Through Hole TO-92-3



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Purchase and inquiry

Manufacturer Product Number:

KSA916YBU

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

120 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

900 mW

Operating Temperature:

150°C (TJ)

Package / Case:

TO-226-3, TO-92-3 Long Body

Base Product Number:

KSA916

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

800 mA

Vce Saturation (Max) @ Ib, Ic:

1V @ 50mA, 500mA

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

120 @ 100mA, 5V

Frequency - Transition:

120MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-92-3

Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

PNP Epitaxial Silicon Transistor

KSA916

Features

- Audio Power Amplifier
- Driver Stage Amplifier
- Complement to KSC2316

ABSOLUTE 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	–800	mA
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	–55 to +150	$^\circ\text{C}$

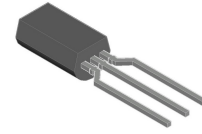
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

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

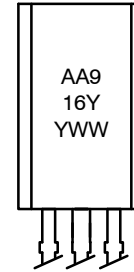
Symbol	Parameter	Value	Unit
P_D	Power Dissipation, by $R_{\theta JA}$	900	mW
	Power Dissipation, by $R_{\theta JC}$	3	W
	Derate Above 25°C , by $R_{\theta JA}$	7.2	mW/ $^\circ\text{C}$
	Derate Above 25°C , by $R_{\theta JC}$	24	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction–to–Ambient	130	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction–to–Case	41	$^\circ\text{C}/\text{W}$

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



TO–92 3 LF
CASE 135AM

MARKING DIAGRAM



1: Emitter
2: Collector
3: Base

A = Assembly Code
A916Y = Device Code
YWW = Date Code

ORDERING INFORMATION

Device	Package	Shipping
KSA916YTA	TO–92 3 LF (Pb–Free)	2000 / Fan–Fold

KSA916**ELECTRICAL CHARACTERISTICS**(Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = -1\text{ mA}, I_E = 0$	-120	-	-	V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$	-120	-	-	V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -1\text{ mA}, I_C = 0$	-5	-	-	V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = -120\text{ V}, I_E = 0$	-	-	-0.1	μA
h_{FE1}	DC Current Gain	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	60	-	-	
h_{FE2}	DC Current Gain	$V_{CE} = -5\text{ V}, I_C = -100\text{ mA}$	80	-	240	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	-	-	-1	V
f_T	Current Gain Bandwidth Product	$V_{CE} = -5\text{ V}, I_C = -100\text{ mA}$	-	120	-	MHz
C_{ob}	Output Capacitance	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	-	-	40	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.

 h_{FE} CLASSIFICATION

Classification	O	Y
h_{FE2}	80 ~ 160	120 ~ 240

KSA916

TYPICAL PERFORMANCE CHARACTERISTICS

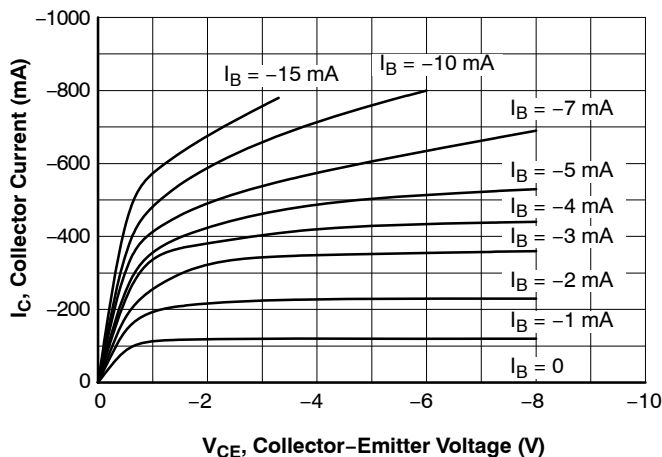


Figure 1. Static Characteristic

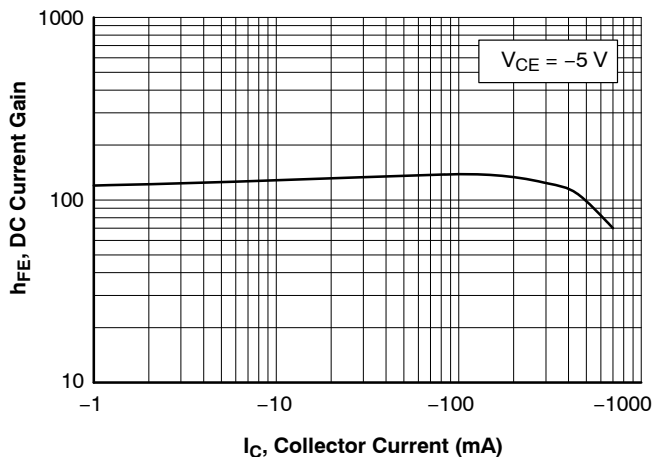


Figure 2. DC Current Gain

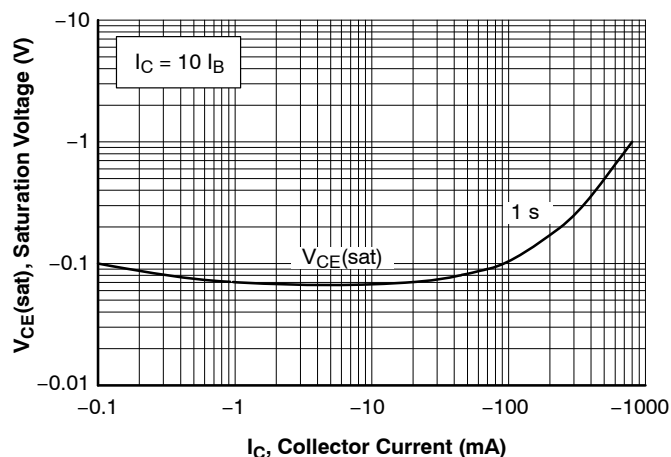


Figure 3. Collector-Emitter Saturation Voltage

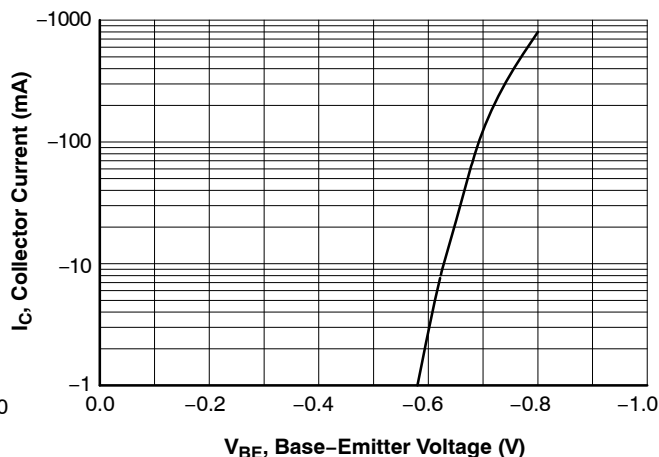


Figure 4. Base-Emitter On Voltage

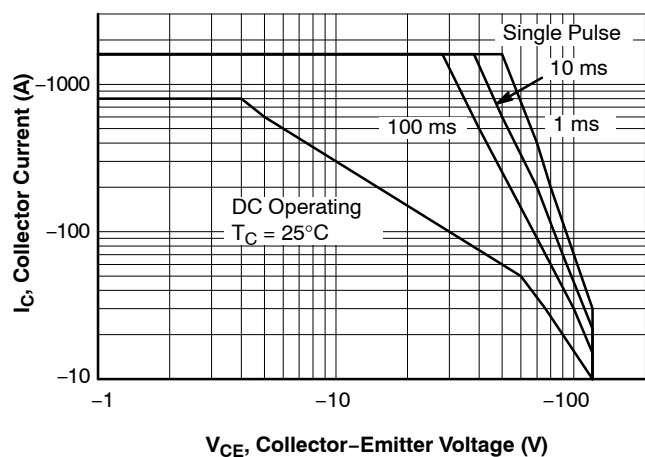


Figure 5. Safe Operating Area

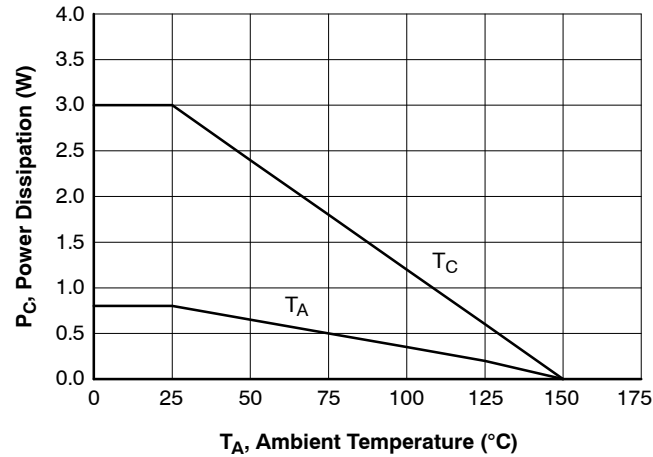
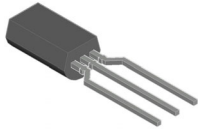
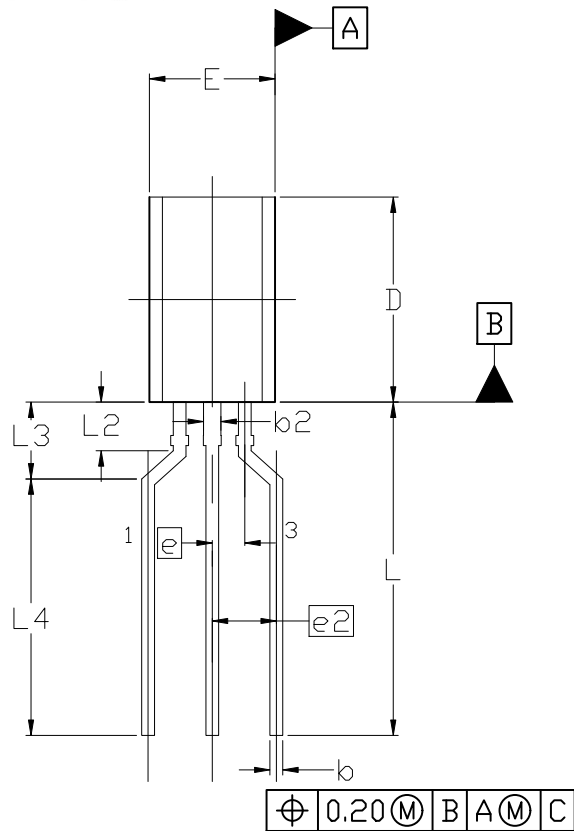


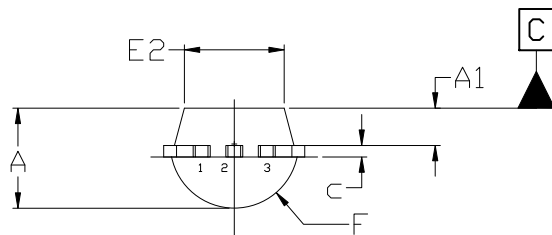
Figure 6. Power Derating


TO-92 3 8.0x4.9 (LEADFORMED)
CASE 135AM
ISSUE B

DATE 14 JAN 2021



TOP VIEW



END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, GATE REMAINS AND TIE BAR PROTRUSIONS.
4. DIMENSION b AND b2 DOES NOT INCLUDE DAMBAR PROTRUSION. DIMENSION b2 LOCATED ABOVE THE DAMBAR PORTION OF MIDDLE LEAD.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	3.70	3.90	4.10
A1	1.25	1.45	1.65
b	0.35	0.50	0.60
b2	0.62	---	0.78
c	0.35	0.45	0.55
D	7.80	8.00	8.20
E	4.70	4.90	5.10
E2	3.70	3.90	4.10
e	1.27 BSC		
e2	2.50 BSC		
F	2.45 REF		
L	13.00 REF		
L2	1.50	---	1.90
L3	2.60	---	3.40
L4	10.40 REF		

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