KSC1845PBU Datasheet

DiGi Electronics Part Number	KSC1845PBU-DG
Manufacturer	onsemi
Manufacturer Product Number	KSC1845PBU
Description	TRANS NPN 120V 0.05A TO92-3
Detailed Description	Bipolar (BJT) Transistor NPN 120 V 50 mA 110MHz 500 mW Through Hole TO-92-3

https://www.DiGi-Electronics.com

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RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
KSC1845PBU	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	50 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
120 V	300mV @ 1mA, 10mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
50nA (ICBO)	200 @ 1mA, 6V
Power - Max:	Frequency - Transition:
500 mW	110MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-226-3, TO-92-3 (TO-226AA)	TO-92-3
Base Product Number:	
KSC1845	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.21.0075

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DATA SHEET
www.onsemi.com

NPN Epitaxial Silicon Transistor

KSC1845

1. Emitter
2. Collector
3. Base

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

Features

- Audio Frequency Low−Noise Amplifier
- Complement to KSA992
- This is a Pb−Free Device

MAXIMUM RATINGS (Values are at T_A = 25°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	°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.

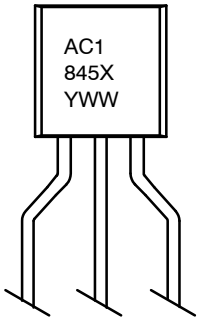
THERMAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.) (Note 1)

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



A = Assembly Code
C1845 = Device Code
X = F
YWW = Date Code

ORDERING INFORMATION

Device	Package	Shipping
KSC1845FTA	TO−92 3 LF (Pb−Free)	2000 / Fan−Fold

KSC1845

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CBO}	Collector−Base Breakdown Voltage	I_C = 100 μA, I_A = 0	120	–	–	V
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 1 mA, I_B = 0	120	–	–	V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = 100 μA, I_C = 0	5	–	–	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 120 V, I_E = 0	–	–	50	nA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = 5 V, I_C = 0	–	–	50	nA
h_{FE1}	DC Current Gain	V_{CE} = 6 V, I_C = 0.1 mA	150	580	–	
h_{FE2}		V_{CE} = 6 V, I_C = 1 mA	300	450	600	
V_{BE}(on)	Base−Emitter On Voltage	V_{CE} = 6 V, I_C = 1 mA	0.55	0.59	0.65	V
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 10 mA, I_B = 1 mA	–	0.07	0.30	V
f_T	Current Gain Bandwidth Product	V_{CE} = 6 V, I_C = 1 mA	50	100	–	MHz
C_{ob}	Output Capacitance	V_{CB} = 30 V, I_E = 0, f = 1 MHz	–	1.6	2.5	pF
NF	Noise Figure	V_{CE} = −5 V, I_C = −1.0 mA, R_S = 100 kΩ, f = 1 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.

KSC1845

TYPICAL PERFORMANCE CHARACTERISTICS

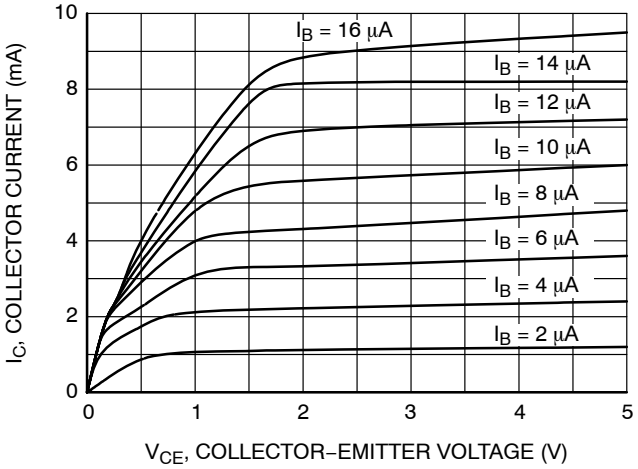


Figure 1. Static Characteristic

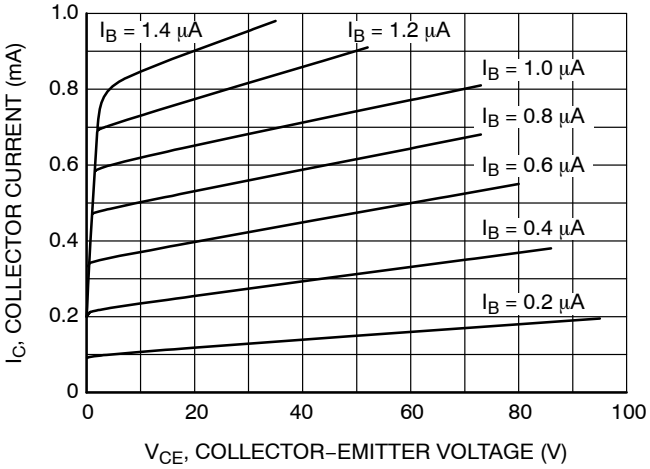


Figure 2. Static Characteristic

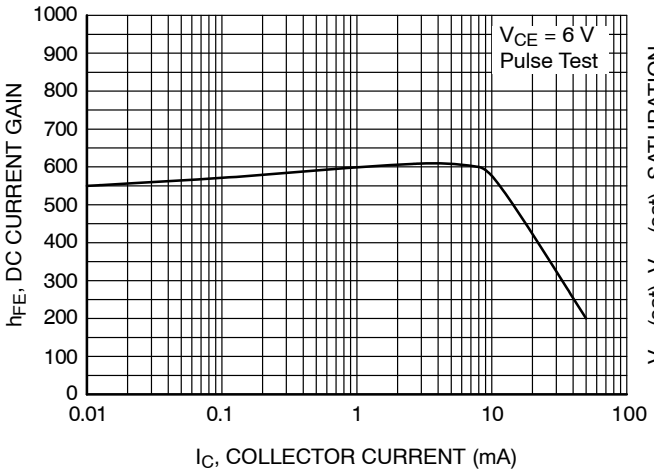


Figure 3. DC Current Gain

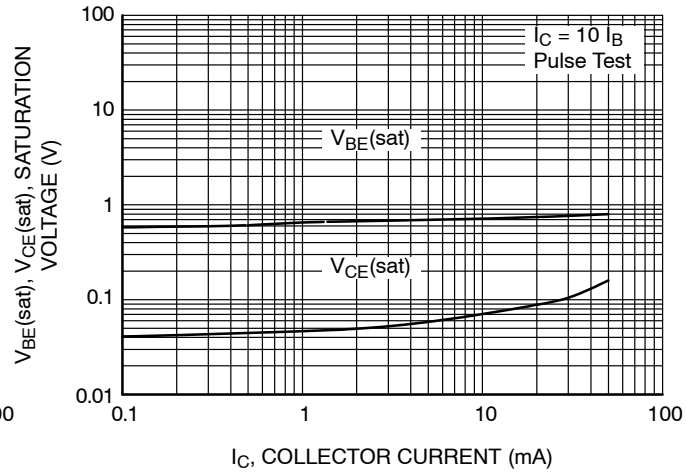


Figure 4. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

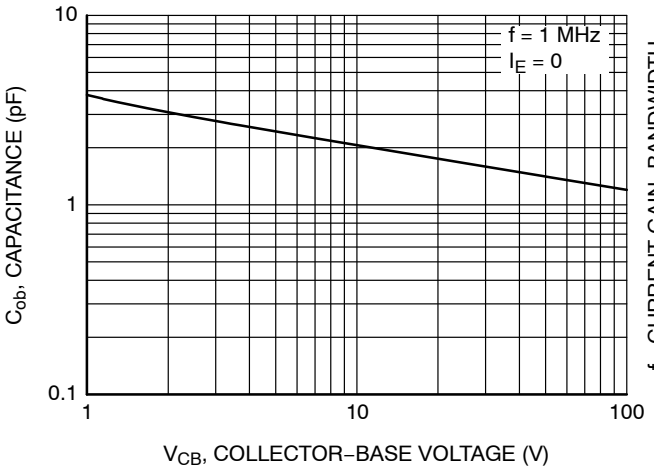


Figure 5. Collector Output Capacitance

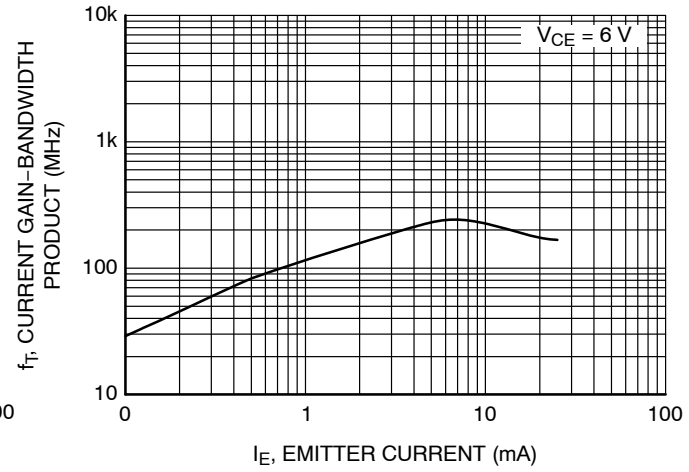


Figure 6. Current Gain Bandwidth Product

TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

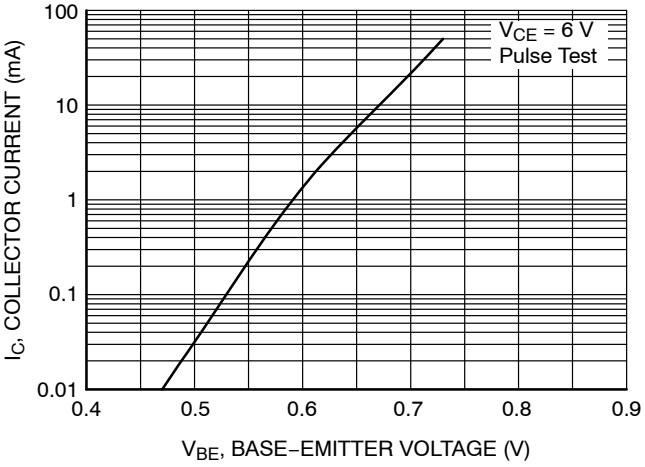


Figure 7. Collector Current vs. Base−Emitter Voltage

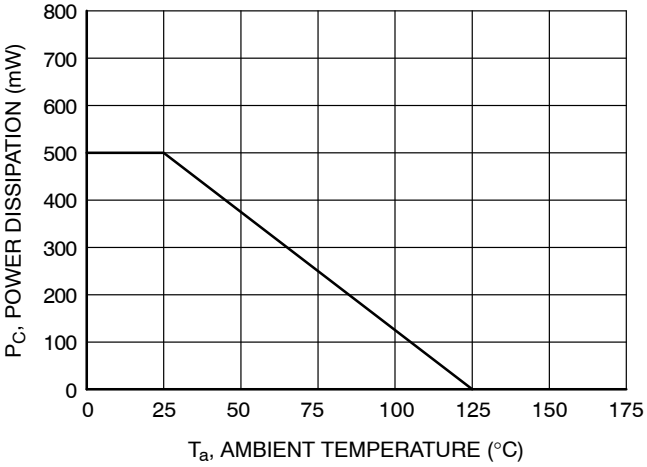


Figure 8. Power Derating

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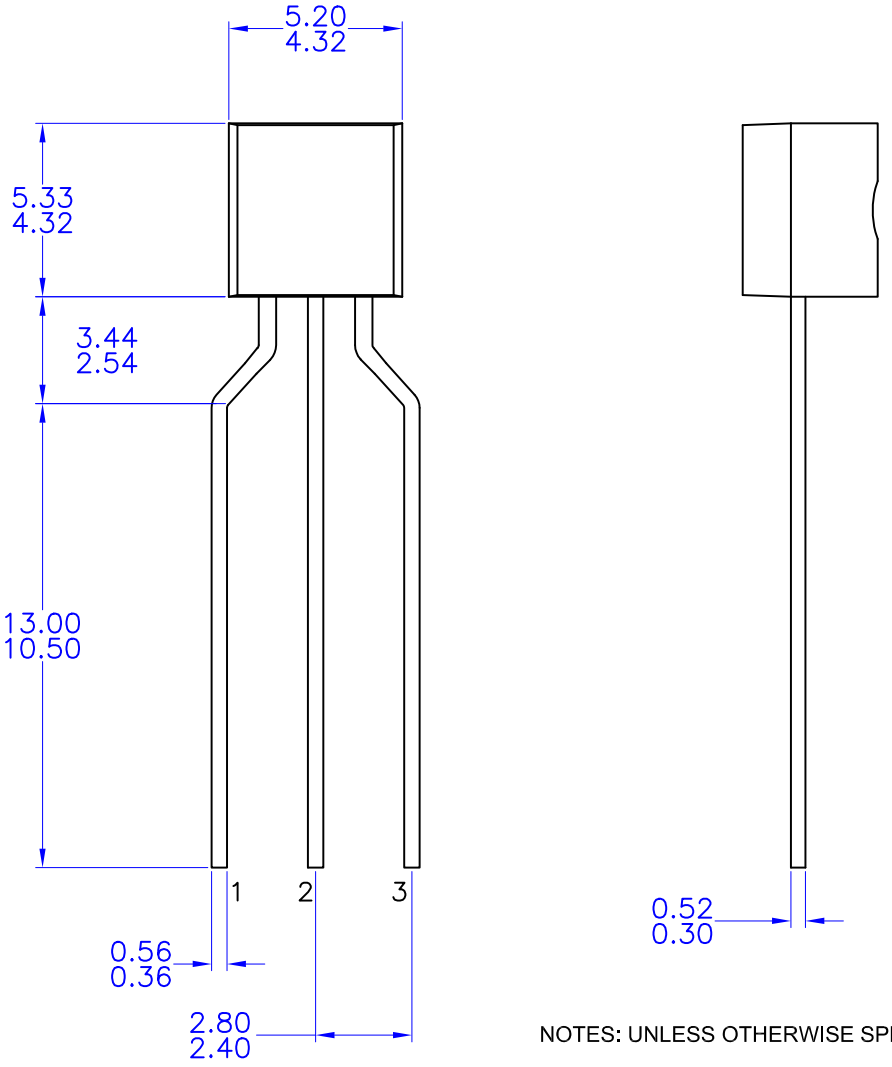
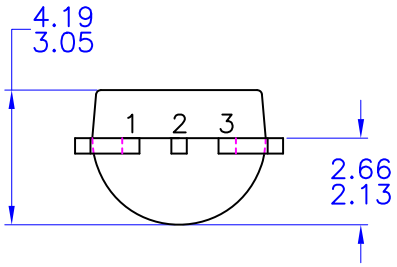
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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

DATE 30 SEP 2016





NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994

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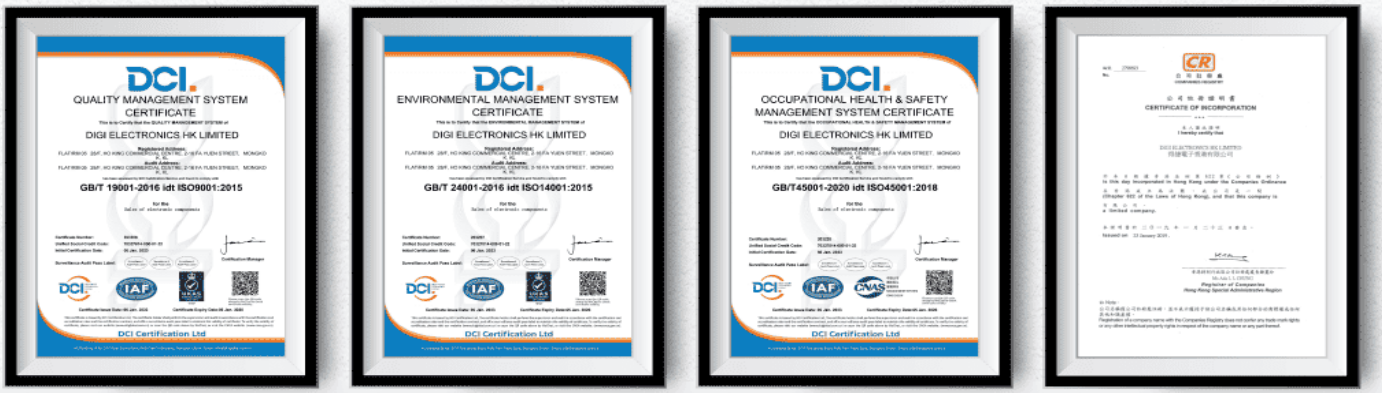

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