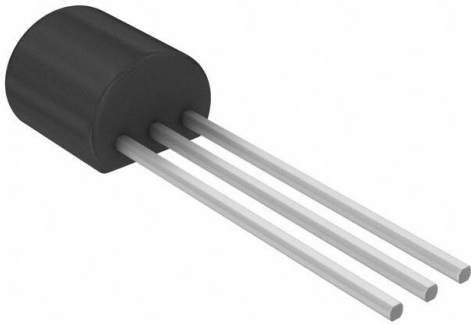


# KSC945CYBU Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	KSC945CYBU-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	KSC945CYBU
Description	TRANS NPN 50V 0.15A TO92-3
Detailed Description	Bipolar (BJT) Transistor NPN 50 V 150 mA 300MHz 2 50 mW Through Hole TO-92-3



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

KSC945CYBU

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

50 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

250 mW

Operating Temperature:

150°C (TJ)

Package / Case:

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

Base Product Number:

KSC945

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

150 mA

Vce Saturation (Max) @ Ib, Ic:

300mV @ 10mA, 100mA

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

120 @ 1mA, 6V

Frequency - Transition:

300MHz

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

# NPN Epitaxial Silicon Transistor

## KSC945

### Features

- Audio Frequency Amplifier and High-Frequency OSC
- Complimentary to KSA733
- Collector-Base Voltage:  $V_{CBO} = 60\text{ V}$
- High Current Gain Bandwidth Product:  $f_T = 300\text{ MHz}$  (Typical)
- Suffix “-C” Means Center Collector  
(1. Emitter 2. Collector 3. Base)

### ABSOLUTE MAXIMUM RATINGS

( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Symbol	Parameter	Ratings	Unit
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	150	mA
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

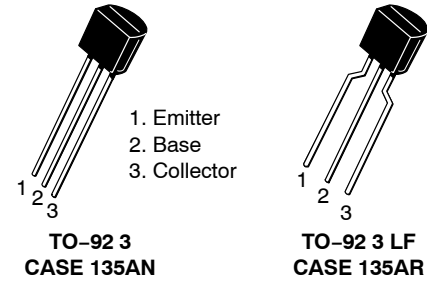
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

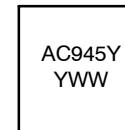
( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	250	mW
	Derate Above $25^\circ\text{C}$	2.0	$\text{mW}/^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	500	$^\circ\text{C}/\text{W}$

2. 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 Site  
 C945Y = Specific Device Code  
 Y = Year of Production  
 WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
KSC945CYTA	TO-92 3 LF (Pb-Free)	2,000 Units / FNFLD
KSC945YTA	TO-92 3 LF (Pb-Free)	2,000 Units / FNFLD

### DISCONTINUED (Note 1)

KSC945YBU	TO-92 3 (Pb-Free)	10,000 Units / Bulk
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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](http://www.onsemi.com).

**KSC945****ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \mu\text{A}, I_E = 0$	60	-	-	V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	50	-	-	V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \mu\text{A}, I_C = 0$	5	-	-	V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 40 \text{ V}, I_E = 0$	-	-	0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 3 \text{ V}, I_C = 0$	-	-	0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = 6 \text{ V}, I_C = 1.0 \text{ mA}$	120	-	240	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$	-	0.15	0.30	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 6 \text{ V}, I_C = 10 \text{ mA}$	-	300	-	MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 6 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	-	2.5	-	pF
NF	Noise Figure	$V_{CE} = 6 \text{ V}, I_C = 0.5 \text{ mA}, f = 1 \text{ kHz}, R_S = 500 \Omega$	-	4.0	-	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.

# KSC945

## TYPICAL CHARACTERISTICS

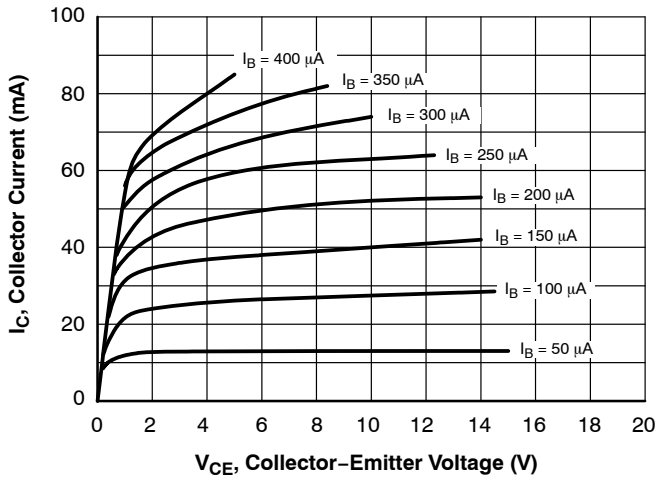


Figure 1. Static Characteristic

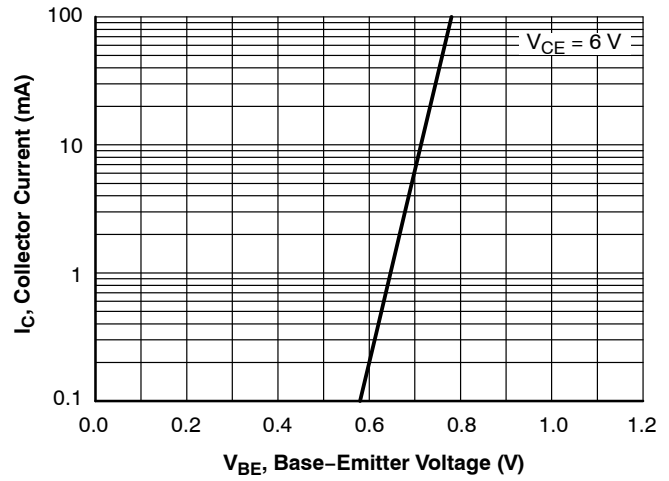


Figure 2. Transfer Characteristic

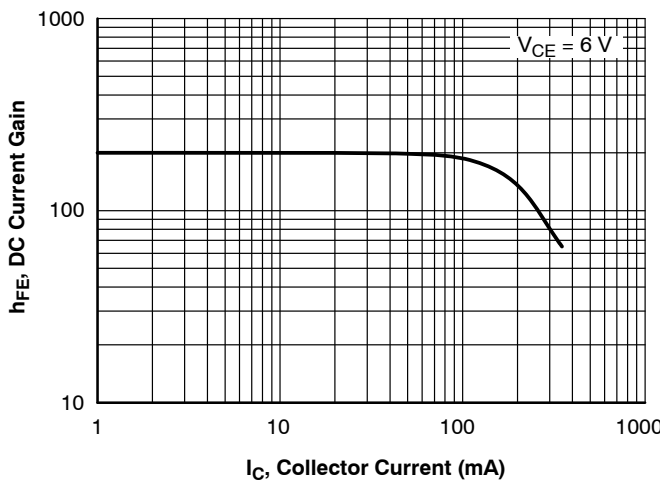


Figure 3. DC Current Gain

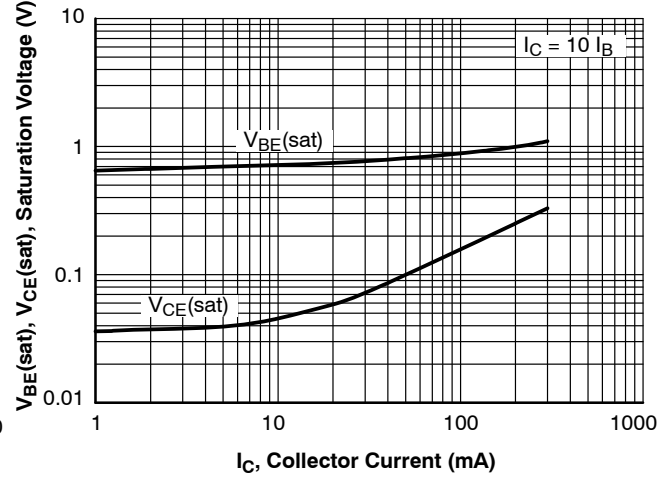


Figure 4. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

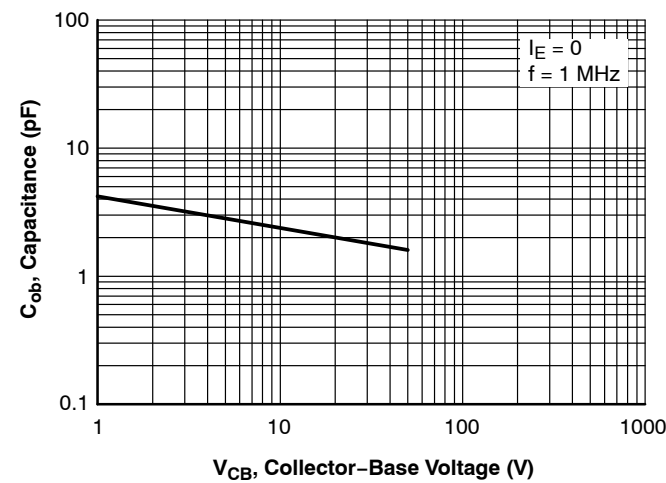


Figure 5. Output Capacitance

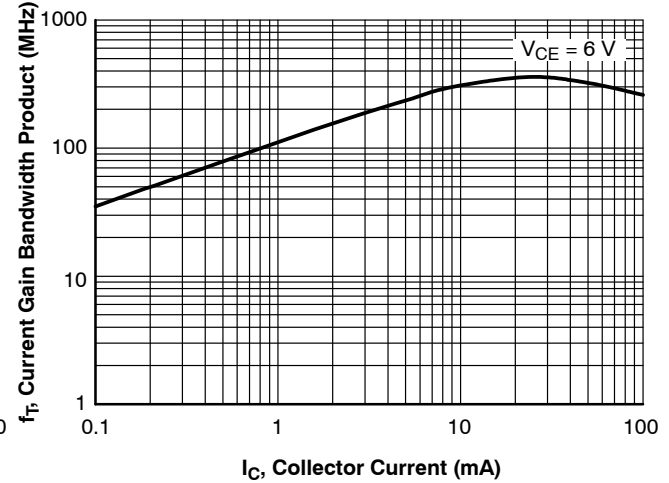
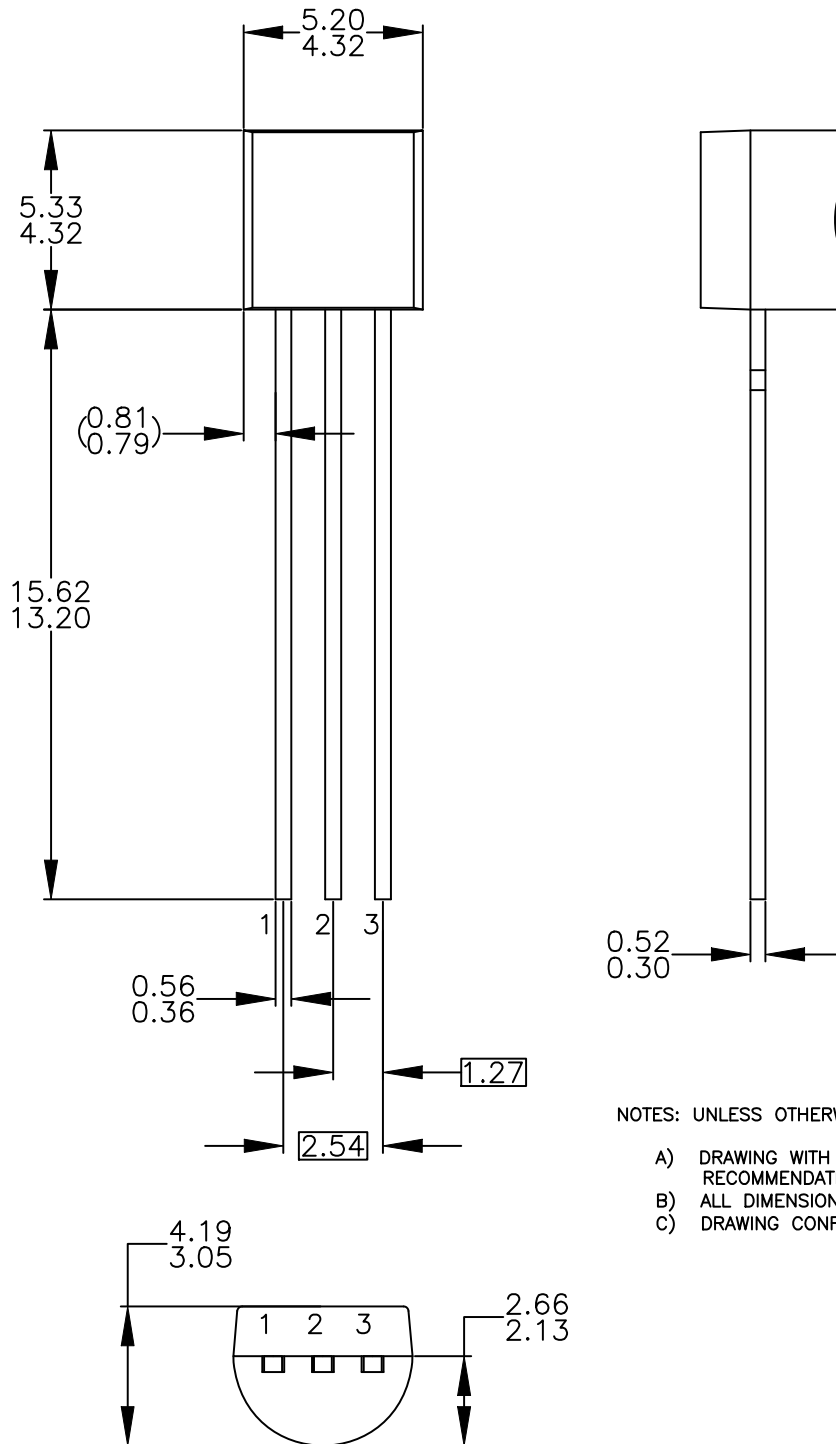


Figure 6. Current Gain Bandwidth Product

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

DATE 31 JUL 2016



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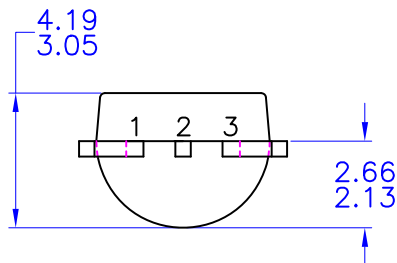
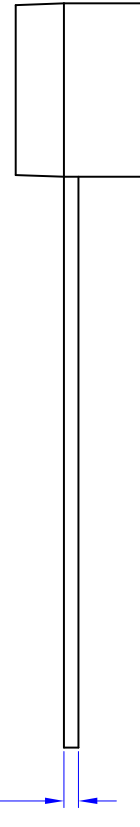
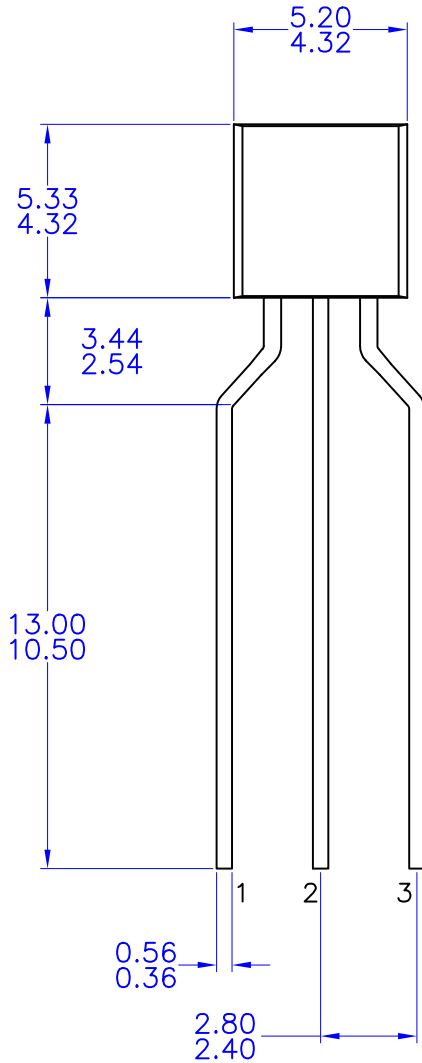
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