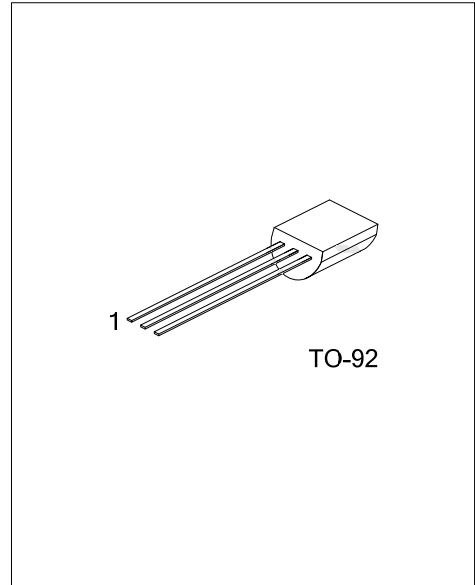




## KSC945

### NPN EPITAXIAL SILICON TRANSISTOR

AUDIO FREQUENCY  
AMPLIFIER HIGH FREQUENCY  
OSC NPN TRANSISTOR



#### DESCRIPTION

The UTC **KSC945** is an audio frequency amplifier high frequency OSC NPN transistor.

#### FEATURES

- \* Collector-Base voltage:  
BV<sub>CBO</sub>=60V
- \* Collector current up to 150mA
- \* High h<sub>FE</sub> linearity
- \* Complimentary to KSA733

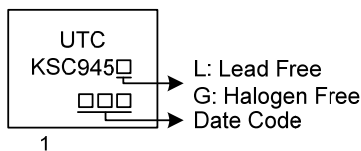
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen-Free		1	2	3	
KSC945L-x-T92-B	KSC945G-x-T92-B	TO-92	E	B	C	Tape Box
KSC945L-x-T92-K	KSC945G-x-T92-K	TO-92	E	B	C	Bulk

Note: Pin assignment: E: Emitter B: Base C: Collector

	<p>(1) B: Tape Box, K: Bulk</p> <p>(2) T92: TO-92</p> <p>(3) x: refer to Classification of h<sub>FE</sub></p> <p>(4) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Dissipation ( $T_A=25^{\circ}\text{C}$ )	$P_C$	250	mW
Collector Current	$I_C$	150	mA
Base Current	$I_B$	50	mA
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Operating Temperature	$T_{OPR}$	-40 ~ +150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	60			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10\text{mA}$ , $I_B=0$	50			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=40\text{V}$ , $I_E=0$			100	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=3\text{V}$ , $I_C=0$			100	nA
DC Current Gain(note)	$h_{FE}$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	40		700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$ , $I_B=10\text{mA}$		0.1	0.3	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=6\text{V}$ , $I_C=10\text{mA}$	100	300		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=6\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		2.0		pF
Noise Figure	NF	$I_C=-0.1\text{mA}$ , $V_{CE}=6\text{V}$ $R_G=10\text{k}\Omega$ , $f=100\text{Hz}$		4.0		dB

■ CLASSIFICATION OF  $h_{FE}$

RANK	R	O	Y	G	L
RANGE	40-80	70-140	120-240	200-400	350-700

## ■ TYPICAL CHARACTERISTICS

Fig1. Static Characteristics

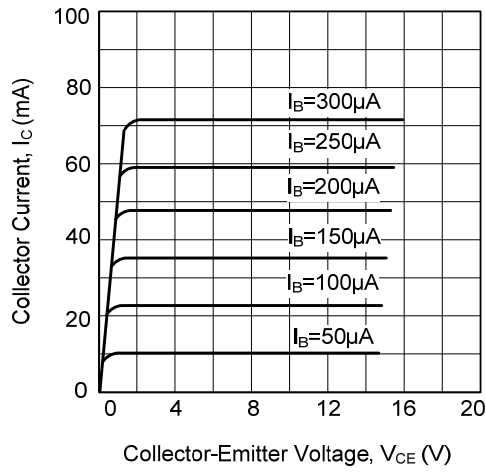


Fig 2. DC Current Gain

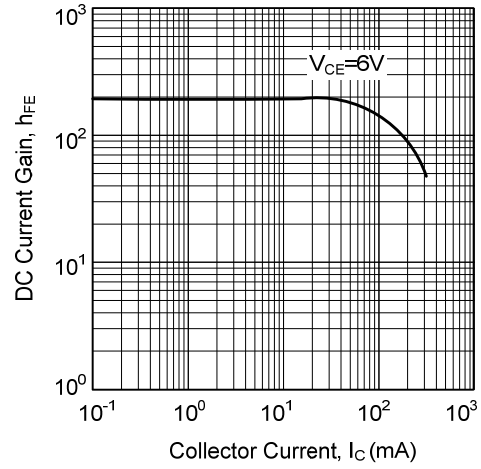


Fig 3. Base-Emitter On Voltage

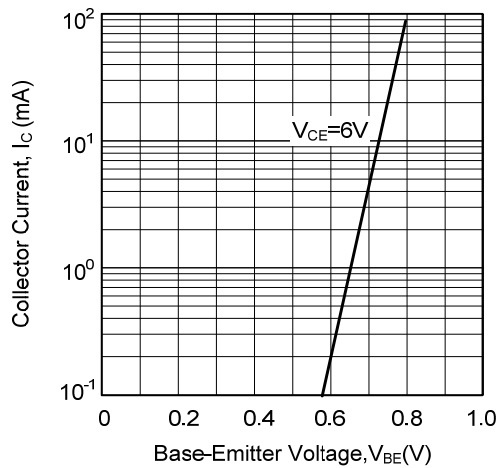


Fig 4. Saturation Voltage

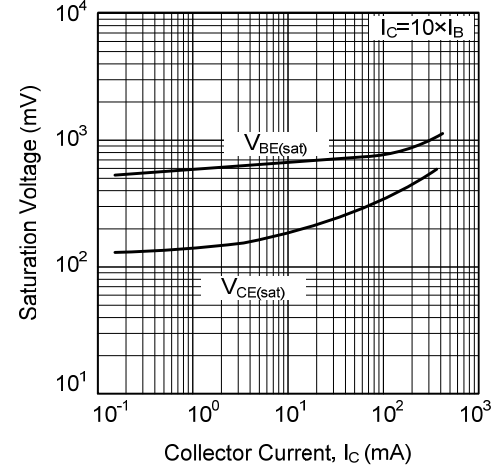


Fig 5. Current Gain-Bandwidth Product

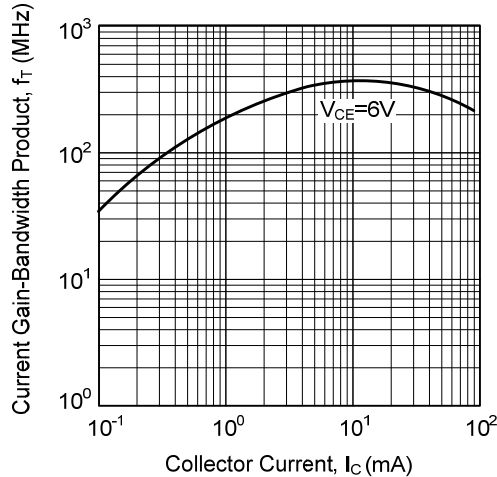
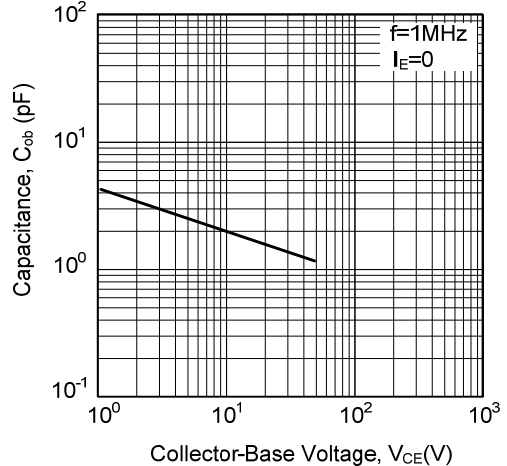


Fig 6. Collector Output Capacitance



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