

KSC945

Audio Frequency Amplifier & High Frequency OSC.

- Complement to KSA733
- Collector-Base Voltage : $V_{CBO}=60V$
- High Current Gain Bandwidth Product : $f_T=300MHz$ (TYP)
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
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
P_C	Collector Power Dissipation	250	mW
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ C$

Electrical Characteristics $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	60			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$	50			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	5			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=40V, I_E=0$			0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=3V, I_C=0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE}=6V, I_C=1.0mA$	40		700	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=100mA, I_B=10mA$		0.15	0.3	V
f_T	Current Gain Bandwidth Product	$V_{CE}=6V, I_C=10mA$		300		MHz
C_{ob}	Output Capacitance	$V_{CB}=6V, I_E=0, f=1MHz$		2.5		pF
NF	Noise Figure	$V_{CE}=6V, I_C=0.5mA, f=1KHz, R_S=500\Omega$		4.0		dB

h_{FE} Classification

Classification	R	O	Y	G	L
h_{FE}	40 ~ 80	70 ~ 140	120 ~ 240	200 ~ 400	350 ~ 700

Typical Characteristics

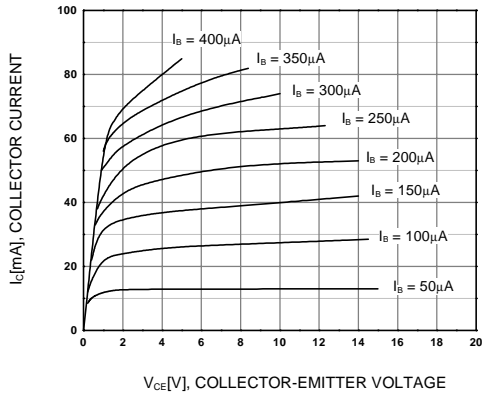


Figure 1. Static Characteristic

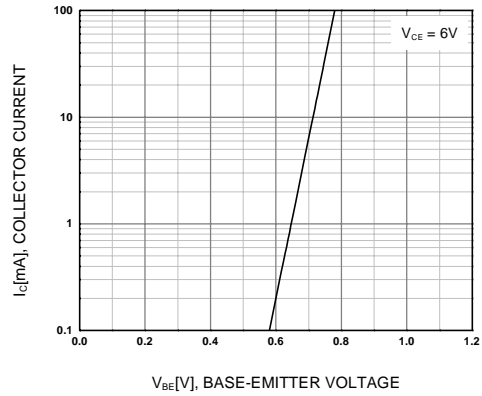


Figure 2. Transfer Characteristic

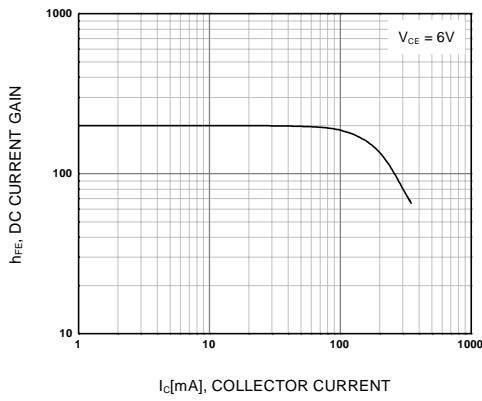


Figure 3. DC current Gain

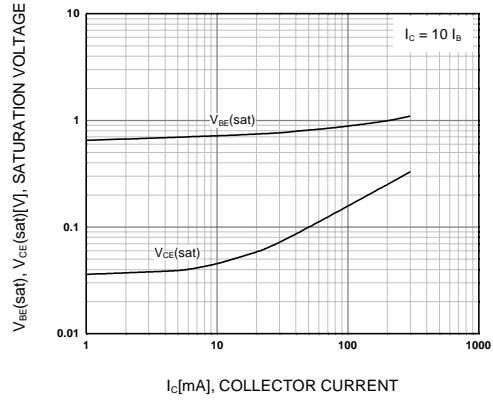


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

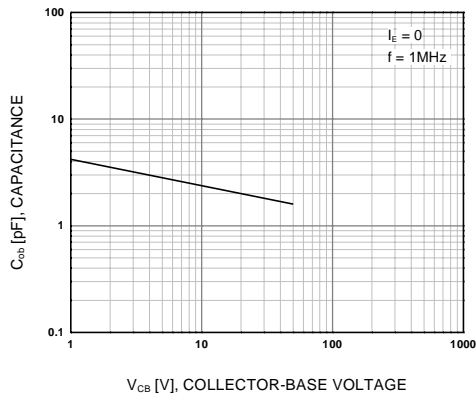


Figure 5. Output Capacitance

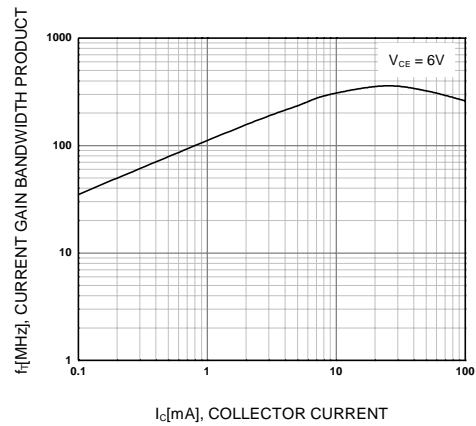


Figure 6. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

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KSC945

NPN Epitaxial Silicon Transistor

Contents

- [Features](#)
- [Applications](#)
- [Product status/pricing/packaging](#)
- [Order Samples](#)
- [Models](#)
- [Application notes](#)
- [Qualification Support](#)

Features

- Complement to KSA733
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[back to top](#)

Applications

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& High Frequency OSC.

[back to top](#)

Product status/pricing/packaging

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BUY

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[Support](#)





[Sales support](#)

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Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSC945CGBU	Full Production	Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: GC&3
KSC945CGTA	Full Production		\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: GC&3

		 Full Production					
KSC945CLTA	Full Production	 Full Production	\$0.025	TO-92	3	AMMO	Line 1: C945 Line 3: LC&3
KSC945COTA	Full Production	 Full Production	\$0.025	TO-92	3	AMMO	Line 1: C945 Line 3: OC&3
KSC945CYBU	Full Production	 Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: YC&3
KSC945CYTA	Full Production	 Full Production	\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: YC&3
KSC945CYTA_NL	Full Production	 Full Production	N/A	TO-92	3	AMMO	Line 1: C945 Line 3: YC&3
KSC945GBU	Full Production	 Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: G-&3
KSC945GTA	Full Production	 Full Production	\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: G-&3
KSC945LBU	Full Production	 Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: L-&3
KSC945LTA	Full Production	 Full Production	\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: L-&3
KSC945OBU	Full Production	 Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: O-&3

KSC945OTA	Full Production	 Full Production	\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: O-&3
KSC945YBU	Full Production	 Full Production	\$0.0255	TO-92	3	BULK	Line 1: C945 Line 3: Y-&3
KSC945YTA	Full Production	 Full Production	\$0.0265	TO-92	3	AMMO	Line 1: C945 Line 3: Y-&3
KSC945YTA_NL	Full Production	 Full Production	N/A	TO-92	3	AMMO	Line 1: C945 Line 3: Y-&3

* Fairchild 1,000 piece Budgetary Pricing

** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a [Fairchild distributor](#) to obtain samples



Indicates product with Pb-free second-level interconnect. For more information [click here](#).

Package marking information for product KSC945 is available. [Click here for more information](#).

[back to top](#)

Models

Package & leads	Condition	Temperature range	Vcc range	Software version	Revision date
PSPICE					
TO-92-3	Electrical/Thermal	-55°C to 150°C	0V to 20V	9.2	Jan 15, 2004

[back to top](#)

Application notes

- [AB-35: CRT Monitors \(150 K\)](#) Jul 27, 2007
- [AB-38: Color TV Applications \(134 K\)](#) Jul 27, 2007
- [AB-39: Color TV Applications \(141 K\)](#) Jul 27, 2007
- [AB-40: Color TV Applications \(143 K\)](#) Jul 27, 2007
- [AB-41: Color TV Applications \(141 K\)](#) Jul 27, 2007
- [AB-42: Color TV Applications \(142 K\)](#) Jul 27, 2007
- [AB-43: Color TV Applications \(143 K\)](#) Jul 27, 2007
- [AB-57: Color-TV Applications \(FSCQ565RT - 59 Watts\)](#) (253 K) Jul 27, 2007

[AB-58: Color-TV Applications \(FSCQ765RT - 83 Watts\)](#) (266 K) Jul 27, 2007
[AB-59: Color-TV Applications \(FSCQ965RT - 102 Watts\)](#) (240 K) Jul 27, 2007
[AB-60: Color-TV Applications \(FSCQ1265RT - 132 Watts\)](#) (246 K) Jul 27, 2007
[AB-61: Color-TV Applications \(FSCQ1465RT - 146 Watts\)](#) (245 K) Jul 27, 2007
[AB-62: Color-TV Applications \(FSCQ1565RT - 160 Watts\)](#) (231 K) Jul 27, 2007
[AB-63: Color-TV Applications \(FSCQ1565RP - 198 Watts\)](#) (232 K) Jul 27, 2007
[AN-4116: A Fairchild Power Switch \(FPS\) based on Switched Mode Power Supply for LCD Monitor Use](#) (245 K) Jul 27, 2007
[AN-4146: Design Guidelines for Quasi-Resonant Converters Using FSCQ-series Fairchild Power Switch \(FPStm\)](#) (370 K) Jul 27, 2007
[AN-4149: Design Guidelines for Quasi-Resonant Converters Using KA5Q-series Fairchild Power Switch \(FPStm\)](#) (307 K) Jul 27, 2007

[back to top](#)

Qualification Support

Click on a product for detailed qualification data

Product
KSC945CGBU
KSC945CGTA
KSC945CLTA
KSC945COTA
KSC945CYBU
KSC945CYTA
KSC945CYTA_NL
KSC945GBU
KSC945GTA
KSC945LBU
KSC945LTA
KSC945OBU
KSC945OTA
KSC945YBU
KSC945YTA
KSC945YTA_NL

[back to top](#)

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