FAIRCHILD

SEMICONDUCTOR®

KSC3123

Mixer for UHF TV Tuner

- G_{CE}=23dB
- C_{RE}=0.4pF

SOT-23
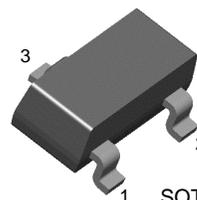
1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current	50	mA
I_B	Base Current	25	mA
P_C	Collector Power Dissipation	150	mW
T_J	Junction Temperature	1500	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=1mA, I_B=0	20			V
I_{CBO}	Collector Cut-off Current	V_{CB}=25V, I_E=0			0.1	μA
I_{EBO}	Emitter Cut-off Current	V_{EB}=3V, I_C=0			1	μA
h_{FE}	DC Current Gain	V_{CE}=10V, I_C=5mA	60		240	
f_T	Current Gain Bandwidth Product	V_{CE}=10V, I_C=5mA	900	1400		MHz
C_{RE}	Reverse Transfer Capacitance	V_{CB}=10V, I_E=0, f=1MHz		0.4	0.5	pF
G_{CE}	Conversion Gain	V_{CC}=12V, f=200MHz f_L=260MHz	20	23		dB
NF	Output Capacitance	V_{CE}=12V, f=200MHz, f_L=260MHz		3.8	5.5	dB

h_{FE} Classification

Classification	R	O	Y
h_{FE}	60 ~ 120	90 ~ 180	120 ~ 240

Marking

**HAO**

h_{FE} grade
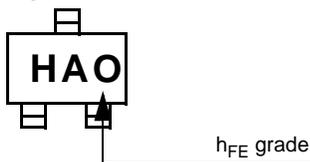
Typical Characteristics
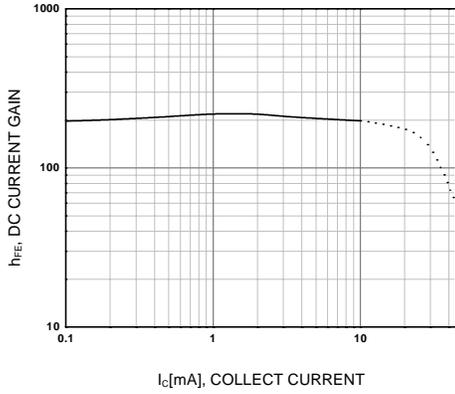
Figure 1. DC current Gain
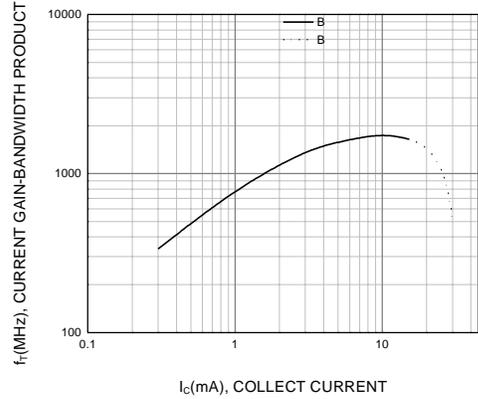

Figure 2. Current Gain Bandwidth Product
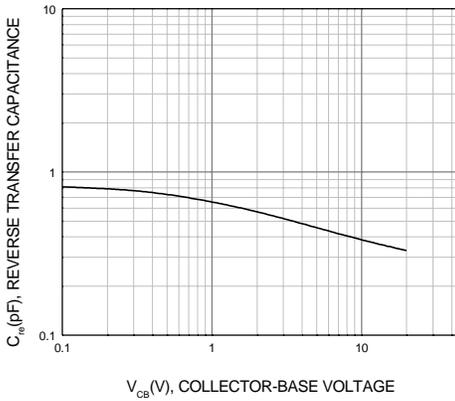
Figure 3. C_{RE}-V_{CB}
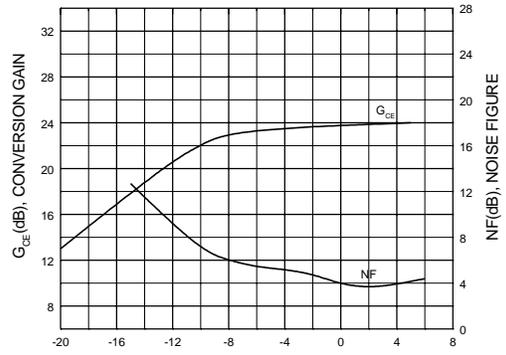
Figure 4. G_{CE}, NF-
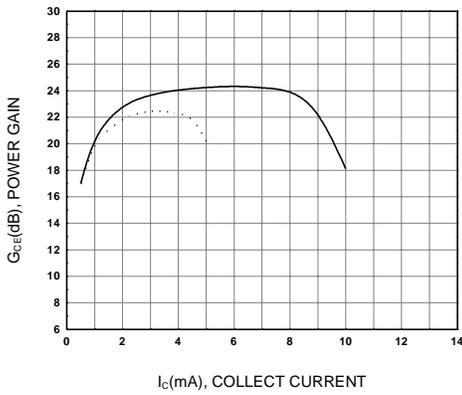

Figure 5. G_{CE}-I_C
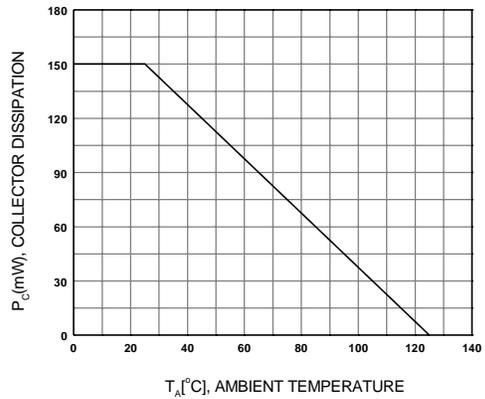
Figure 6. P_C-T_A

Typical Characteristics (Continued)
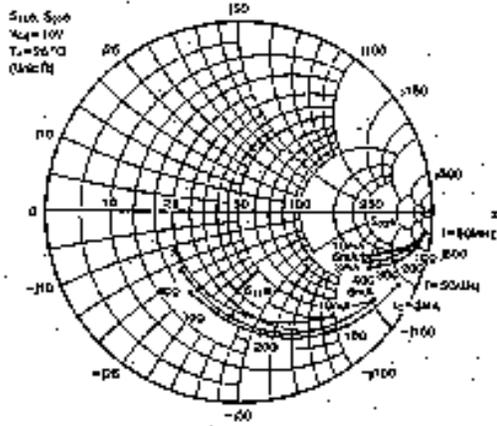
Figure 7.
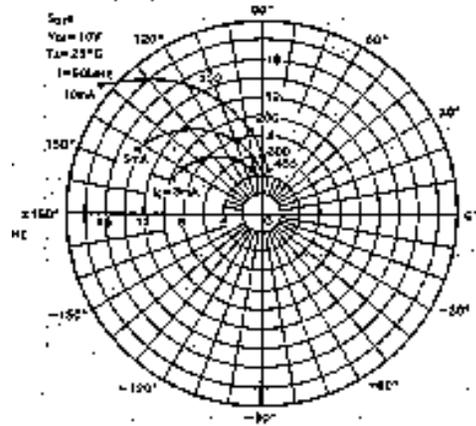
Figure 8.
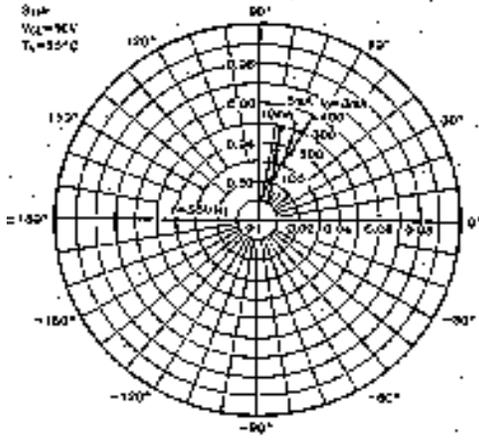
Figure 9.

Package Dimensions

SOT-23

0.40 ±0.03

0.45~0.60

0.20 MIN

1.30 ±0.10

2.40 ±0.10

0.03~0.10

0.38 REF

0.40 ±0.03

0.12 $^{+0.05}_{-0.023}$

0.96~1.14

2.90 ±0.10

0.97REF

0.95 ±0.03 0.95 ±0.03

1.90 ±0.03

0.508REF
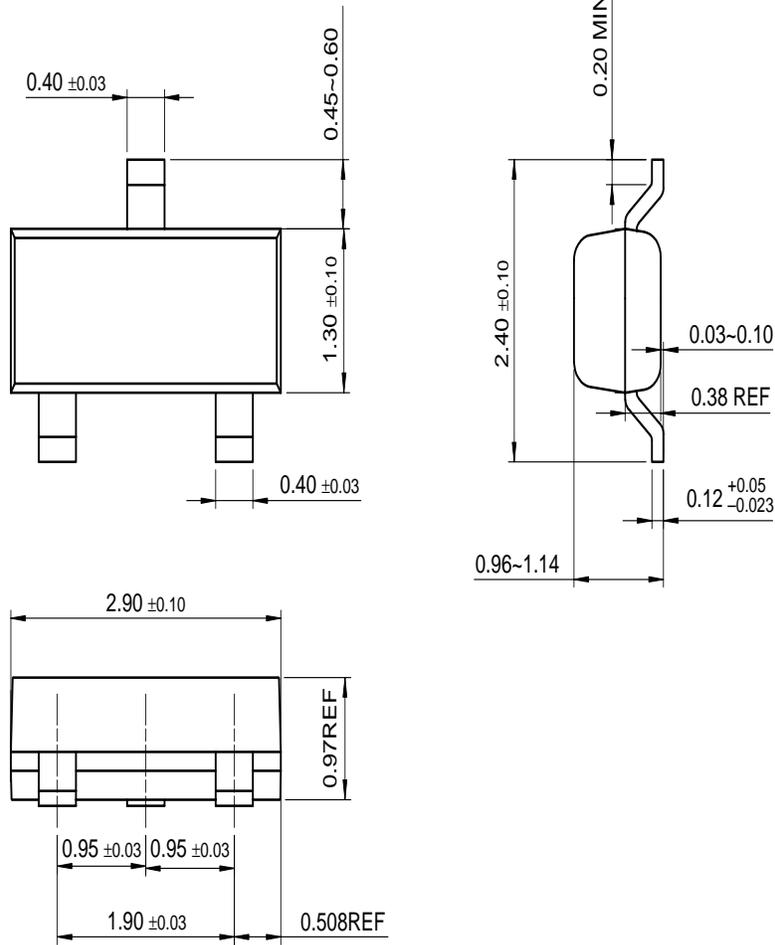
Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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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KSC3123
NPN Epitaxial Silicon Transistor

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Features
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- C_{RE}=0.4pF

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Product status/pricing/packaging

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- Quality and reliability
- Design center

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSC3123OMTF	Full Production	Full Production	$0.0296	SOT-23	3	TAPE REEL	Line 1: HAO
KSC3123RMTF	Full Production	Full Production	$0.0296	SOT-23	3	TAPE REEL	Line 1: HAR

| KSC3123YMTF | Full Production | Full Production | $0.0296 | SOT-23 | 3 | TAPE REEL | Line 1: HAY |

* 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 KSC3123 is available. Click here for more information .

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Qualification Support

Click on a product for detailed qualification data

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