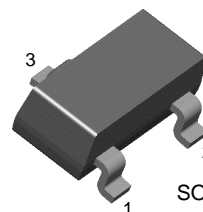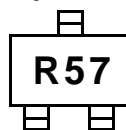**FAIRCHILD**

SEMICONDUCTOR®

KSR2107

Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R_1=22KΩ, R_2=47KΩ)
- Complement to KSR1107

3

2

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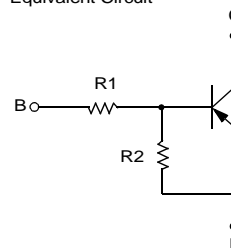
1. Base   2. Emitter   3. Collector

Marking

R57

Equivalent Circuit

C

B R1

R2

E

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-10	V
I_C	Collector Current	-100	mA
P_C	Collector Power Dissipation	200	mW
T_J	Junction Temperature	150	°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_{CBO}	Collector-Base Breakdown Voltage	I_C= -10µA, I_E=0	-50			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C= -100µA, I_B=0	-50			V
I_{CBO}	Collector Cutoff Current	V_{CB}= -40V, I_E=0			-0.1	µA
h_{FE}	DC Current Gain	V_{CE}= -5V, I_C= -5mA	68			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C= -10mA, I_B= -0.5mA			-0.3	V
C_{ob}	Output Capacitance	V_{CB}= -10V, I_E=0 f=1.0MHz		5.5		pF
f_T	Current Gain Bandwidth Product	V_{CE}= -10V, I_C= -5mA		200		MHz
V_I(off)	Input Off Voltage	V_{CE}= -5V, I_C= -100µA	-0.4			V
V_I(on)	Input On Voltage	V_{CE}= -0.3V, I_C= -2mA			-2.5	V
R_1	Input Resistor		15	22	29	KΩ
R_1/R_2	Resistor Ratio		0.42	0.47	0.52	

Typical Characteristics

V_{CE} = - 5V
R_1 = 22K
R_2 = 47K

h_{FE}, DC CURRENT GAIN

I_C[mA], COLLECTOR CURRENT

Figure 1. DC current Gain

V_{CE} =- 0.3V
R_1 = 22K
R_2 = 47K

V_i(on)[V], INPUT VOLTAGE

I_C[mA], COLLECTOR CURRENT
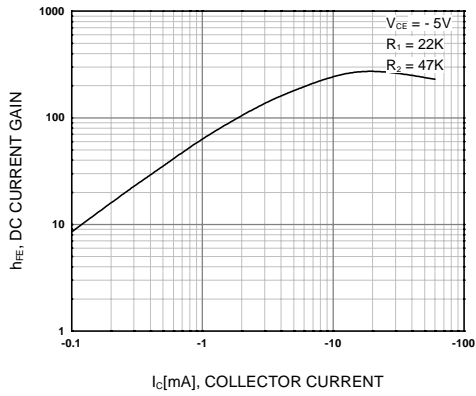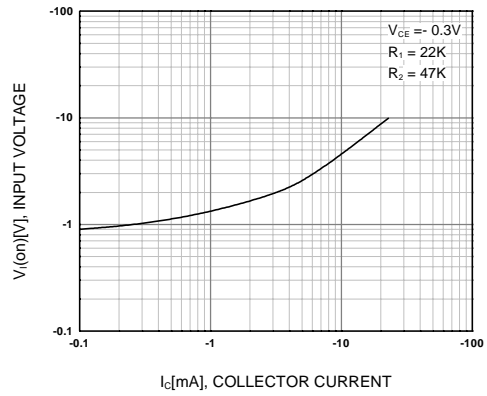
Figure 2. Input On Voltage

V_{CE} = - 5V
R_1 = 22K
R_2 = 47K

I_C [μA], COLLECTOR CURRENT

V_i(OFF)[V], INPUT OFF VOLTAGE
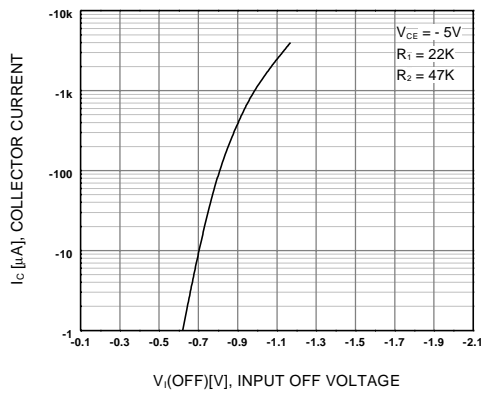
Figure 3. Input Off Voltage

P_C[mW], POWER DISSIPATION

T_a[^{o}C], AMBIENT TEMPERATURE
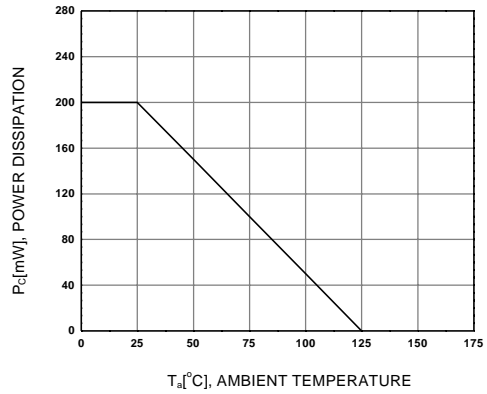
Figure 4. Power Derating

Package Demensions

SOT-23

0.40 ±0.03

0.45~0.60

1.30 ±0.10

0.40 ±0.03

0.20 MIN

2.40 ±0.10

0.03~0.10

0.38 REF

$0.12 \begin{smallmatrix} +0.05 \\ -0.023 \end{smallmatrix}$

0.96~1.14

2.90 ±0.10

0.97REF

0.95 ±0.03 0.95 ±0.03

1.90 ±0.03

0.508REF
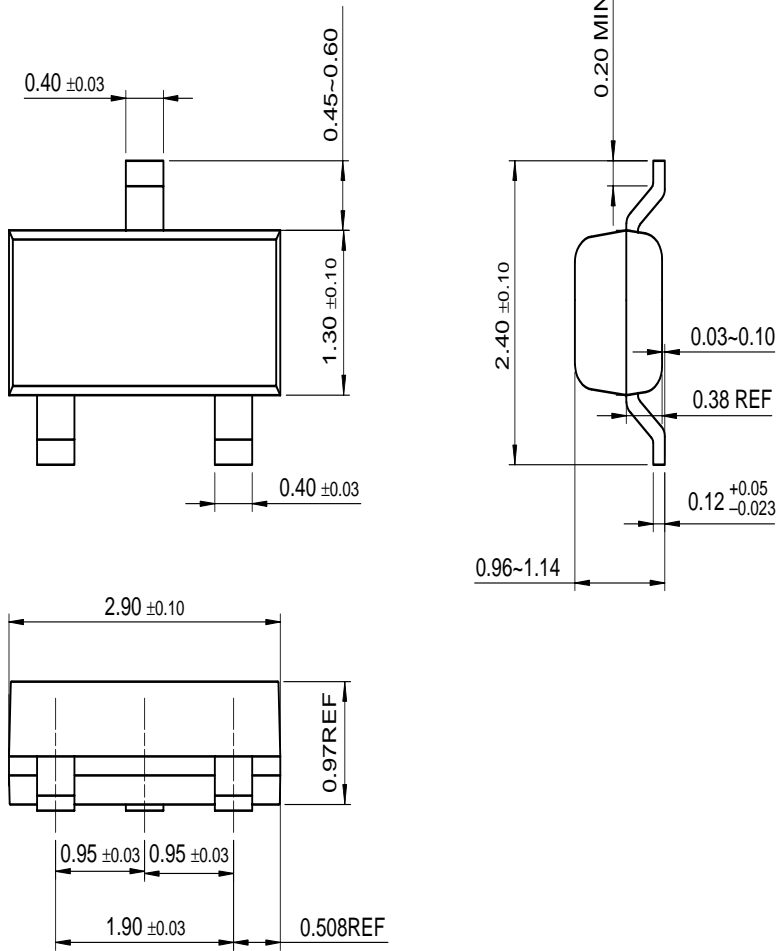
Dimensions in Millimeters

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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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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KSR2107
PNP Epitaxial Silicon Transistor

Contents
[Features](#) | [Product status/pricing/packaging](#)

Features

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- Built in bias Resistor (R_1=22KΩ, R_2=47KΩ)
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[back to top](#)

Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSR2107MTF	Full Production	$0.058	[SOT-23](#)	3	TAPE REEL

* 1,000 piece Budgetary Pricing

[back to top](#)

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