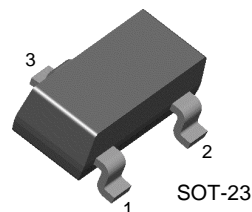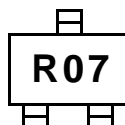**FAIRCHILD**

SEMICONDUCTOR®

# KSR1107

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
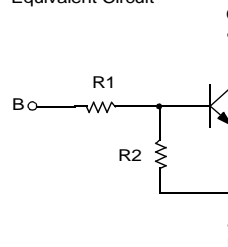- Built in bias Resistor ($R_1$ =22KΩ, $R_2$=47KΩ)
- Complement to KSR2107

SOT-23

1. Base   2. Emitter   3. Collector

Marking

**R07**

Equivalent Circuit

## NPN 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 Cut-off 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=1MHz | | 3.7 | | pF |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$=10V, $I_C$=5mA | | 250 | | 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
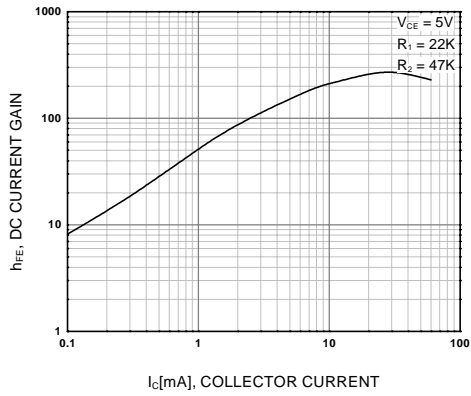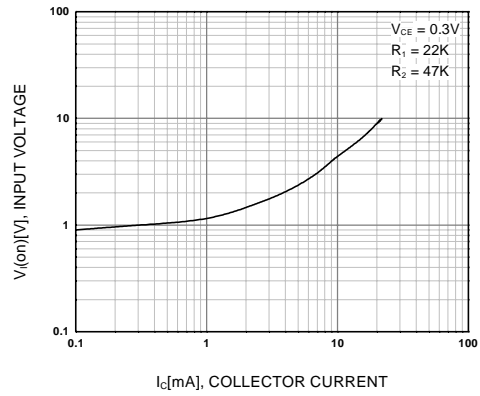


**Figure 1. DC current Gain**



**Figure 2. Input On Voltage**
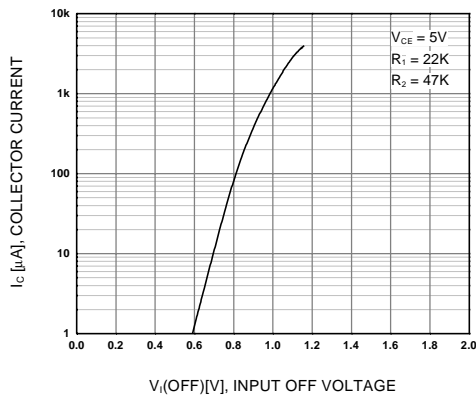


**Figure 3. Input Off Voltage**
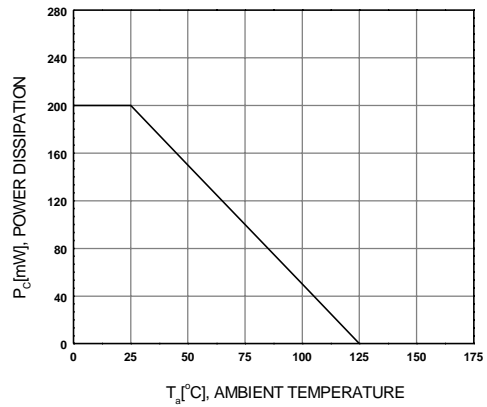


**Figure 4. Power Derating**

# 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

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

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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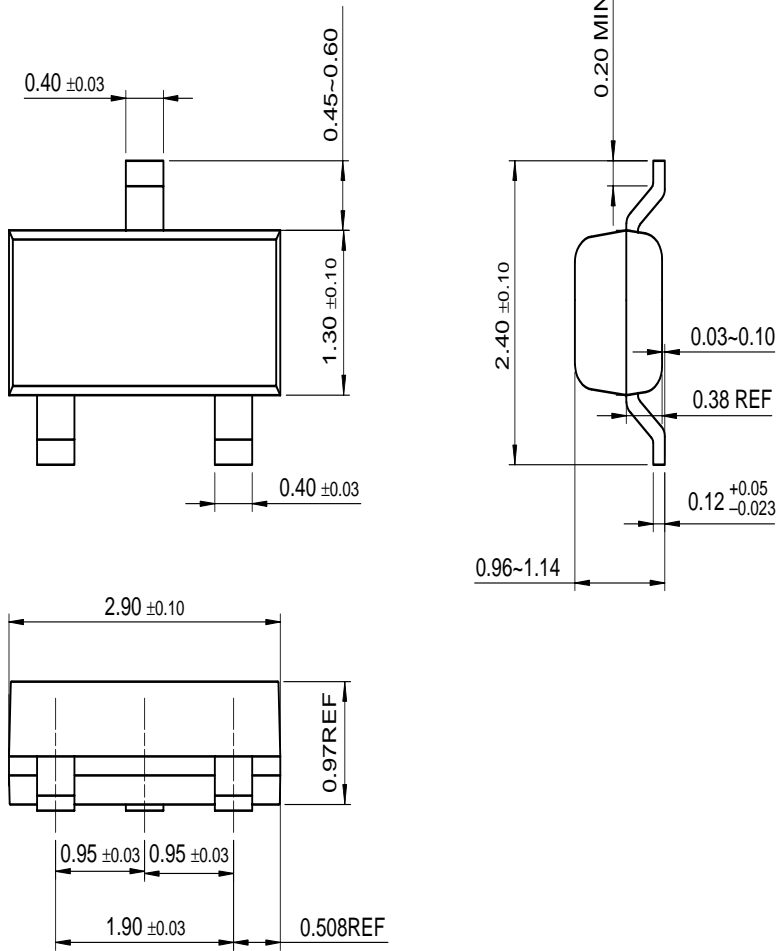| | | | |
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KSR1107
NPN Epitaxial Silicon Transistor

Contents

Features | Product status/pricing/packaging

Features

**Switching Application (Bias Resister Built In)**

- Switchng circuit, Inverter, Interface circuit, Driver Circuit
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- Complement to KSR2107

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Product status/pricing/packaging

| Product | Product status | Pricing* | Package type | Leads | Packing method |
|---|---|---|---|---|---|
| KSR1107MTF | Full Production | $0.053 | SOT-23 | 3 | TAPE REEL |

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