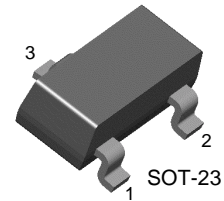


KSR1105

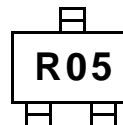
Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ($R_1 = 4.7K\Omega$, $R_2 = 10K\Omega$)
- Complement to KSR2105

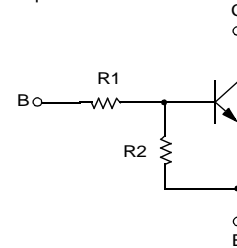


1. Base 2. Emitter 3. Collector

Marking



Equivalent Circuit



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ 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 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 ~ 150 | $^\circ\text{C}$ |

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---------------|--------------------------------------|--|------|------|------|---------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C = 10\mu\text{A}$, $I_E = 0$ | 50 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 100\mu\text{A}$, $I_B = 0$ | 50 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 40\text{V}$, $I_E = 0$ | | | 0.1 | μA |
| h_{FE} | DC Current Gain | $V_{CE} = 5\text{V}$, $I_C = 5\text{mA}$ | 30 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 10\text{mA}$, $I_B = 0.5\text{mA}$ | | | 0.3 | V |
| C_{ob} | Output Capacitance | $V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1.0\text{MHz}$ | | 3.7 | | pF |
| f_T | Current Gain-Bandwidth Product | $V_{CE} = 10\text{V}$, $I_C = 5\text{mA}$ | | 250 | | MHz |
| $V_I(off)$ | Input Off Voltage | $V_{CE} = 5\text{V}$, $I_C = 100\mu\text{A}$ | 0.3 | | | V |
| $V_I(on)$ | Input On Voltage | $V_{CE} = 0.3\text{V}$, $I_C = 20\text{mA}$ | | | 2.5 | V |
| R_1 | Input Resistor | | 3.2 | 4.7 | 6.2 | $K\Omega$ |
| R_1/R_2 | Resistor Ratio | | 0.42 | 0.47 | 0.52 | |

Typical Characteristics

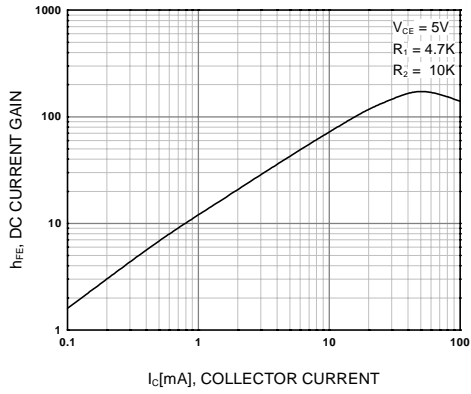


Figure 1. DC current Gain

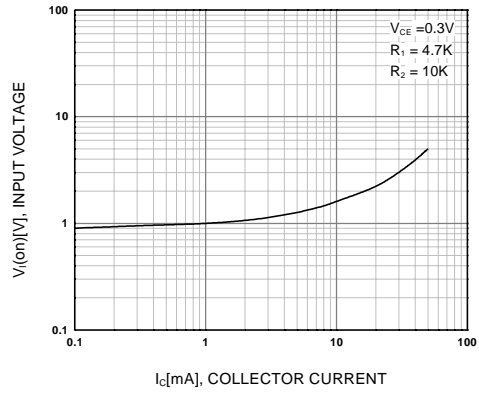


Figure 2. Input On Voltage

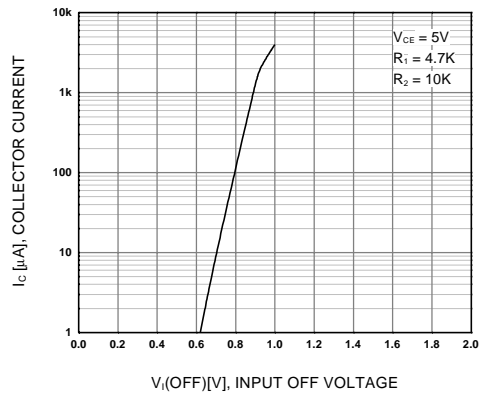


Figure 3. Input Off Voltage

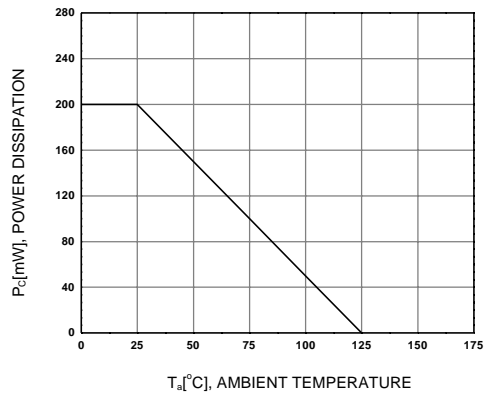


Figure 4. Power Derating

Package Dimensions

SOT-23



Dimensions in Millimeters

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