

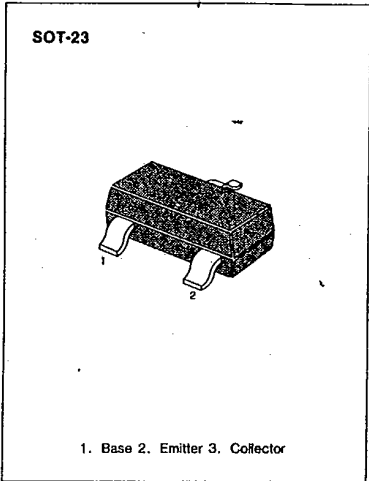
**KSR1105 NPN EPITAXIAL SILICON TRANSISTOR**

**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

**ABSOLUTE MAXIMUM RATINGS** ( $T_a=25^{\circ}C$ )

| Characteristic            | Symbol    | Rating    | Unit        |
|---------------------------|-----------|-----------|-------------|
| Collector-Base Voltage    | $V_{CBO}$ | 50        | V           |
| Collector-Emitter Voltage | $V_{CEO}$ | 50        | V           |
| Emitter-Base Voltage      | $V_{EBO}$ | 10        | V           |
| Collector Current (max)   | $I_C$     | 100       | mA          |
| Collector Dissipation     | $P_C$     | 200       | mW          |
| Junction Temperature      | $T_J$     | 150       | $^{\circ}C$ |
| Storage Temperature       | $T_{stg}$ | -55 ~ 150 | $^{\circ}C$ |

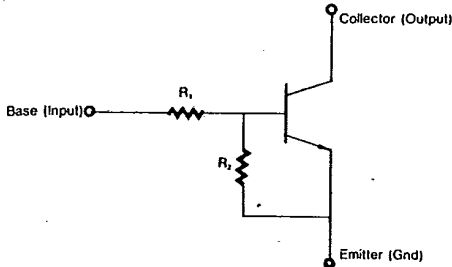


3

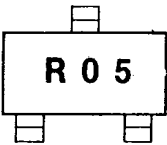
**ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}C$ )

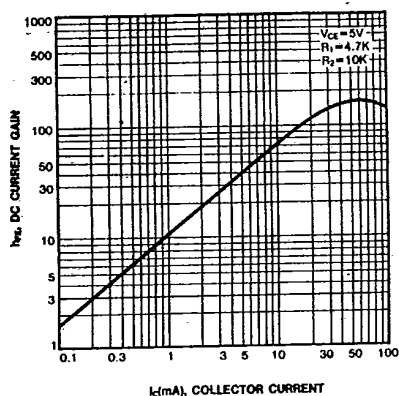
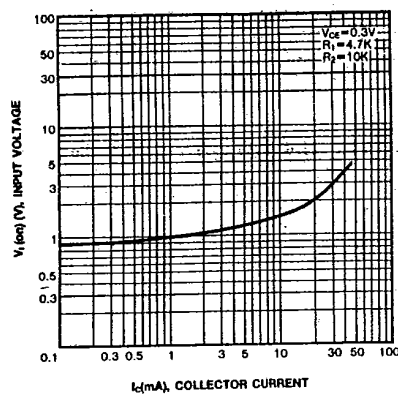
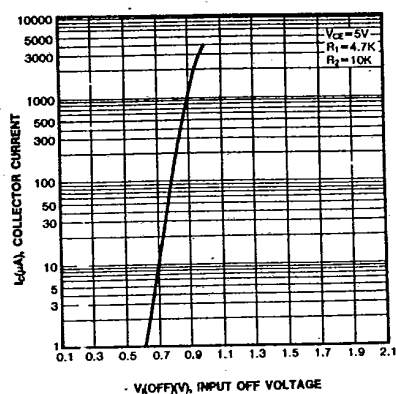
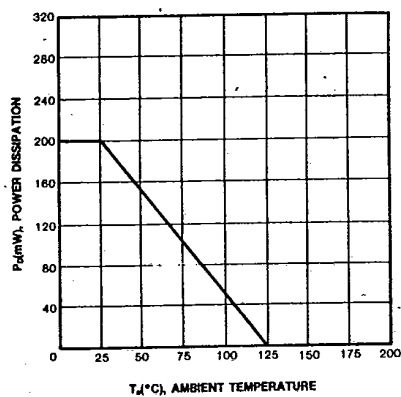
| Characteristic                       | Symbol        | Test Condition                  | Min  | Typ  | Max  | Unit       |
|--------------------------------------|---------------|---------------------------------|------|------|------|------------|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | $I_C=10\mu A, I_E=0$            | 50   |      |      | V          |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C=100\mu A, I_B=0$           | 50   |      |      | V          |
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB}=40V, I_E=0$             |      |      | 0.1  | $\mu A$    |
| DC Current Gain                      | $h_{FE}$      | $V_{CE}=5V, I_C=5mA$            | 30   |      |      |            |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=0.5mA$           |      |      | 0.3  | V          |
| Output Capacitance                   | $C_{ob}$      | $V_{CB}=10V, I_E=0$<br>$f=1MHz$ |      | 3.7  |      | pF         |
| Current Gain-Bandwidth Product       | $f_T$         | $V_{CE}=10V, I_C=5mA$           |      | 250  |      | MHz        |
| Input Off Voltage                    | $V_{I(off)}$  | $V_{CE}=5V, I_C=100\mu A$       | 0.3  |      |      | V          |
| Input On Voltage                     | $V_{I(on)}$   | $V_{CE}=0.3V, I_C=20mA$         |      |      | 2.5  | V          |
| Input Resistor                       | $R_1$         |                                 | 32   | 4.7  | 6.2  | K $\Omega$ |
| Resistor Ratio                       | $R_1/R_2$     |                                 | 0.42 | 0.47 | 0.52 |            |

Equivalent Circuit



Marking



**KSR1105****NPN EPITAXIAL SILICON TRANSISTOR****DC CURRENT GAIN****INPUT ON VOLTAGE****INPUT OFF VOLTAGE****POWER DERATING**

SAMSUNG SEMICONDUCTOR