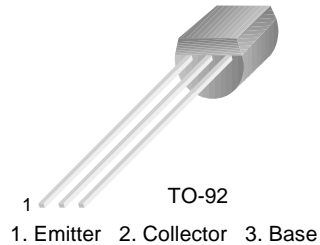


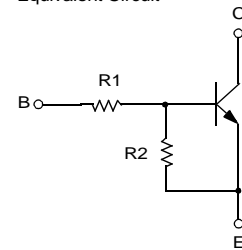
# KSR1001

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R1=4.7KΩ, R2=4.7KΩ)
- Complement to KSR2001



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	300	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	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE}=5\text{V}, I_C=10\text{mA}$	20			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=0.5\text{mA}$			0.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}, I_C=5\text{mA}$		250		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, I_E=0$ $f=1.0\text{MHz}$		3.7		pF
$V_{I(off)}$	Input Off Voltage	$V_{CE}=5\text{V}, I_C=100\mu\text{A}$	0.5			V
$V_{I(on)}$	Input On Voltage	$V_{CE}=0.3\text{V}, I_C=20\text{mA}$			3	V
$R_1$	Input Resistor		3.2	4.7	6.2	KΩ
$R_1/R_2$	Resistor Ratio		0.9	1	1.1	

# Typical Characteristics

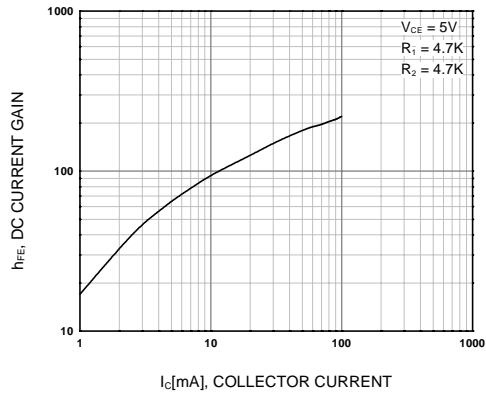


Figure 1. DC current Gain

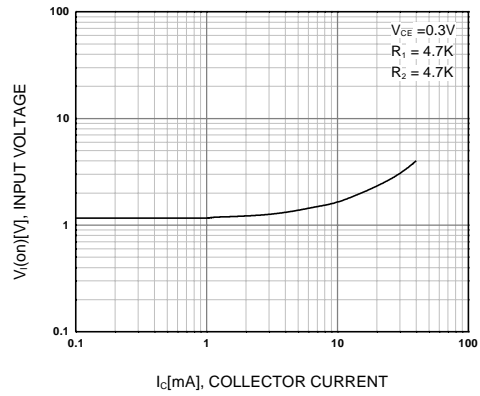


Figure 2. Input On Voltage

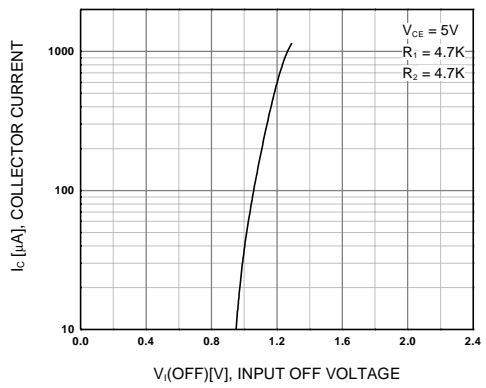


Figure 3. Input Off Voltage

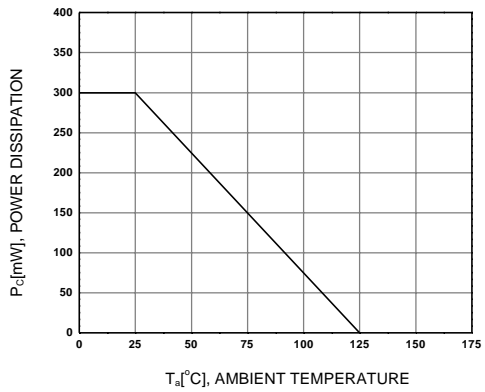


Figure 4. Power Derating

# Package Dimensions

KSR1001

## TO-92



Dimensions in Millimeters

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