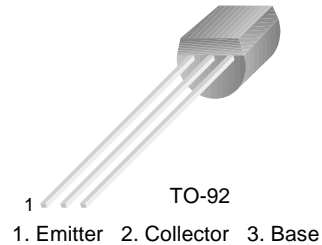


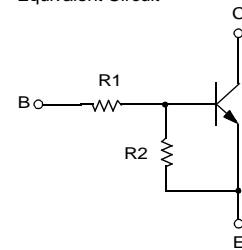
KSR1005

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 KSR2005



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	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	$V_{CE}=10\text{V}$, $I_C=5\text{mA}$ $f=1\text{MHz}$		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

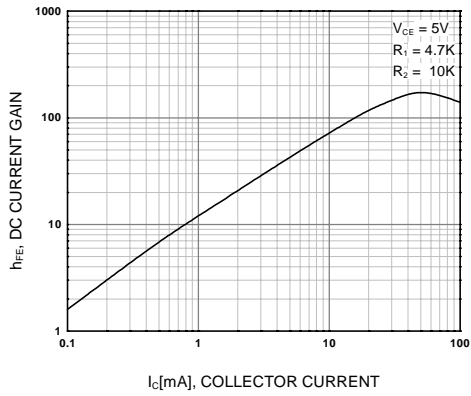


Figure 1. DC current Gain

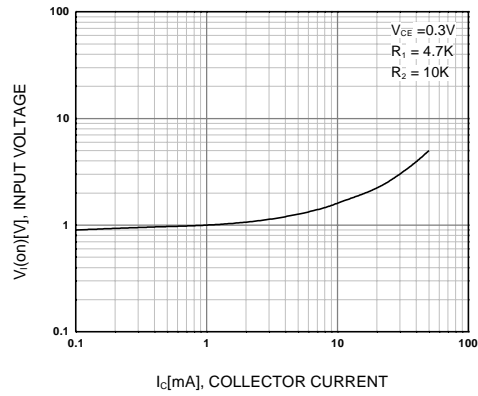


Figure 2. Input On Voltage

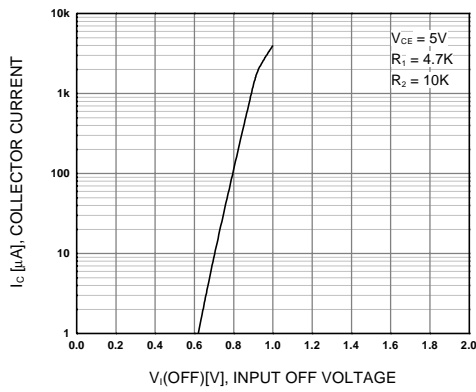


Figure 3. Input Off Voltage

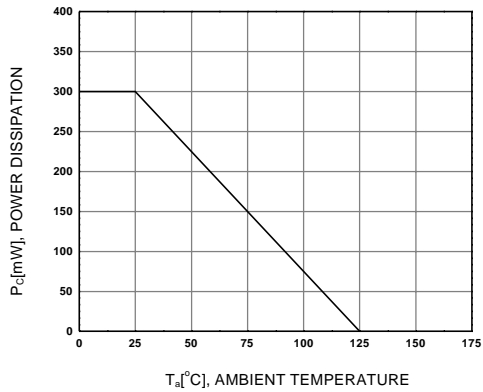
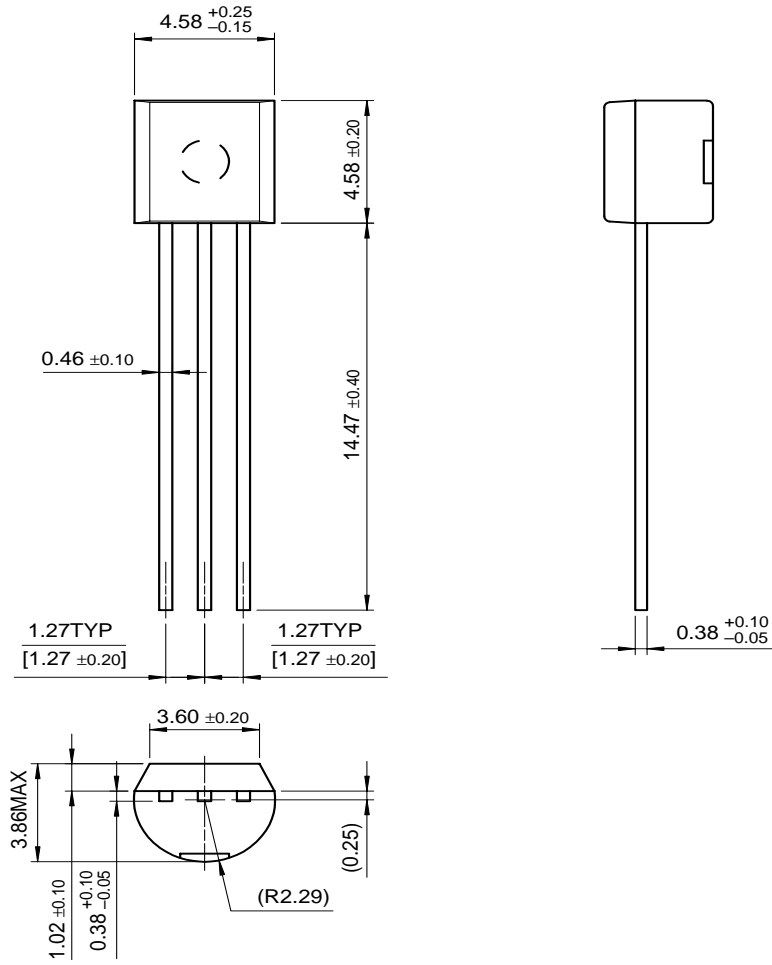


Figure 4. Power Derating

Package Dimensions

KSR1005

TO-92



Dimensions in Millimeters

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