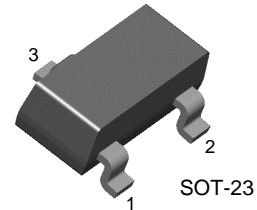


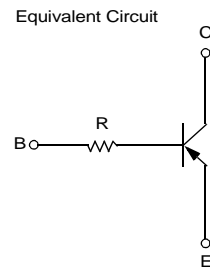
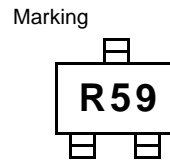
# KSR2109

## Switching Application (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ( $R=4.7K\Omega$ )
- Complement to KSR1109



1. Base 2. Emitter 3. Collector



## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector-Base Voltage	-40	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-5	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
$BV_{CB0}$	Collector-Base Breakdown Voltage	$I_C = -100\mu\text{A}, I_E = 0$	-40			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	-40			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -30\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	100		600	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-0.3	V
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}, I_E = 0$ $f = 1\text{MHz}$		5.5		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}, I_C = -5\text{mA}$		200		MHz
R	Input Resistor		3.2	4.7	6.2	$K\Omega$

# Typical Characteristics

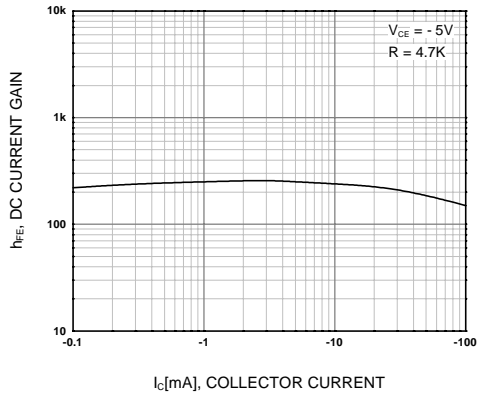


Figure 1. DC current Gain

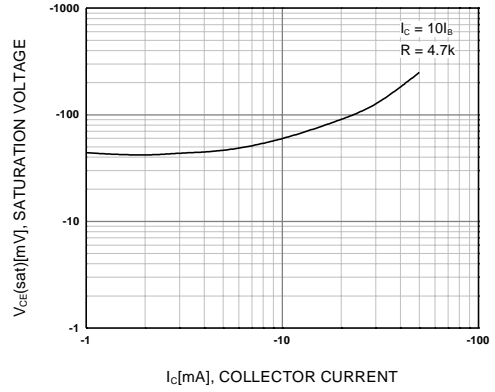


Figure 2. Collector-Emitter Saturation Voltage

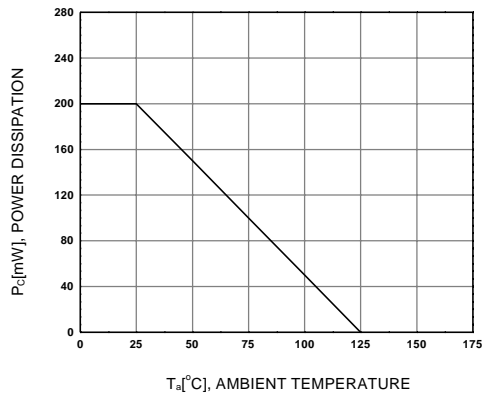
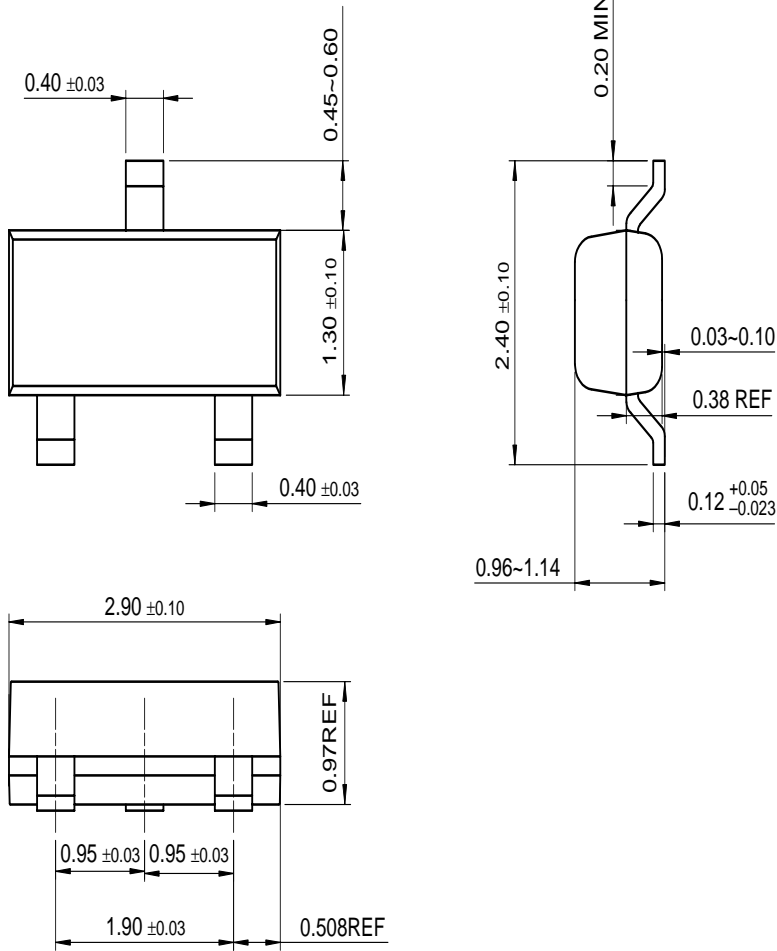


Figure 3. Power Derating

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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