

KSR1009

NPN EPITAXIAL SILICON TRANSISTOR

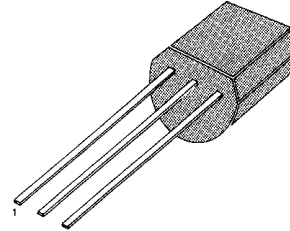
SWITCHING APPLICATION (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ($R=4.7k\Omega$)
- Complement to KSR2009

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ 150	$^\circ\text{C}$

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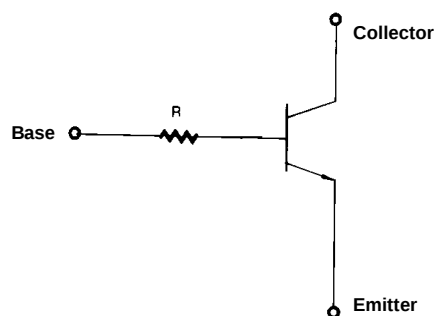


1. Emitter 2. Collector 3. Base

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	40			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_E=1\text{mA}$, $I_B=0$	40			V
Collector Cut-off Current	I_{CBO}	$V_{CB}=30\text{V}$, $I_E=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=1\text{mA}$	100		600	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$, $I_B=1\text{mA}$			0.3	V
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}$, $I_E=0$ $f=1\text{MHz}$		3.70		pF
Current Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=5\text{mA}$		250		MHz
Input Resistor	R		3.2	4.7	6.2	$k\Omega$

Equivalent Circuit



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