

**KSR1009**

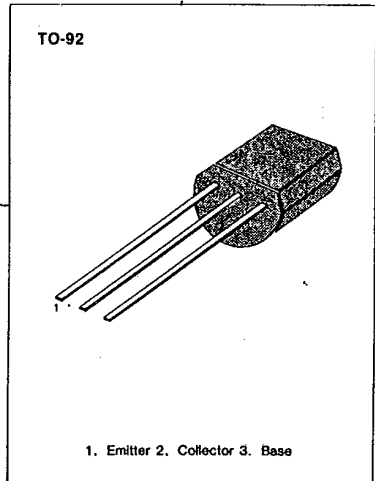
**NPN EPITAXIAL SILICON TRANSISTOR**

**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 ( $T_a=25^\circ C$ )**

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	$^\circ C$
Storage Temperature	$T_{stg}$	-55 ~ 150	$^\circ C$

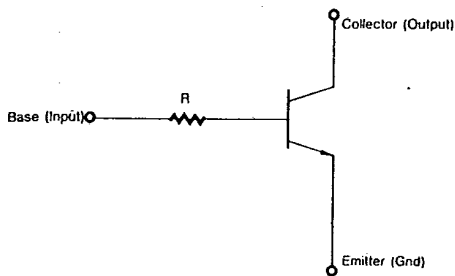


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**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )**

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

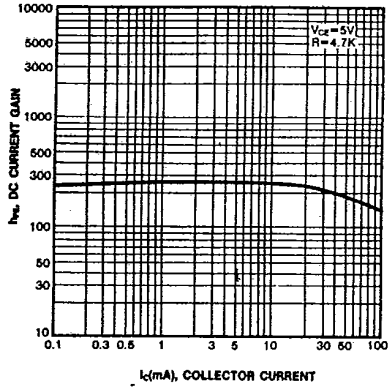
**Equivalent Circuit**



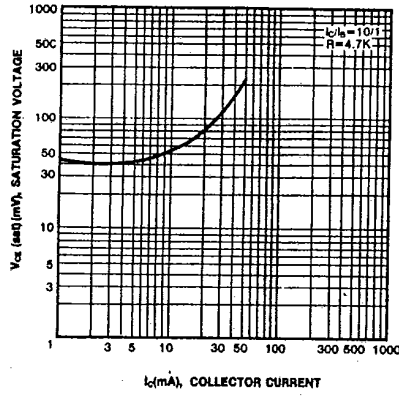
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**NPN EPITAXIAL SILICON TRANSISTOR**

**DC CURRENT GAIN**



**COLLECTOR-EMITTER SATURATION VOLTAGE**



**POWER DERATING**

