

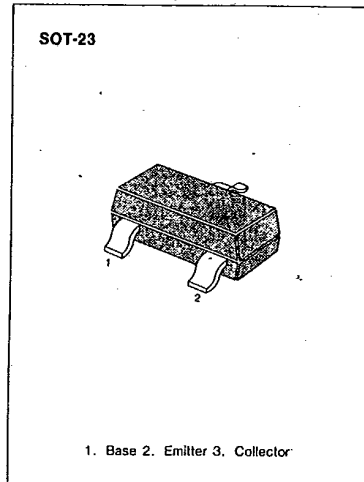
# KSR1109 NPN EPITAXIAL SILICON TRANSISTOR

## SWITCHING APPLICATION (Bias Resistor Built In)

- Switching Circuit, Inverter, Interface circuit Driver circuit
- Built in bias Resistor (R=4.7KΩ)
- Complement to KSR2109

## ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	40	V
Collector-Emitter Voltage	V <sub>CE0</sub>	40	V
Emitter-Base Voltage	V <sub>EB0</sub>	5	V
Collector Current	I <sub>c</sub>	100	mA
Collector Dissipation	P <sub>c</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ 150	°C

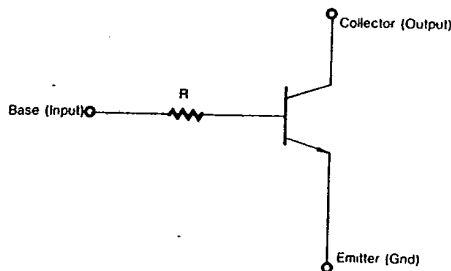


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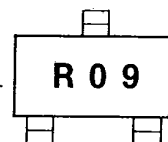
## ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>c</sub> = 100μA, I <sub>E</sub> = 0	40			V
Collector-Emitter Breakdown Voltage	BV <sub>CE0</sub>	I <sub>c</sub> = 1mA, I <sub>B</sub> = 0	40			V
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 1mA	100		600	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> = 10mA, I <sub>B</sub> = 1mA			0.3	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0 f = 1MHz		3.70		pF
Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA		250		MHz
Input Resistor	R		3.2	4.7	6.2	KΩ

### Equivalent Circuit



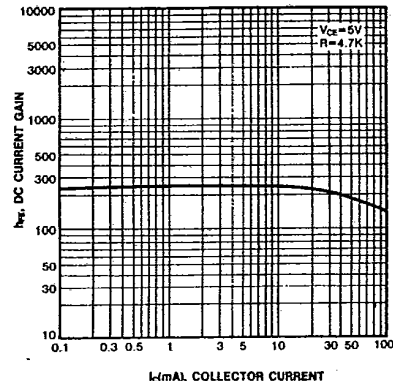
### Marking



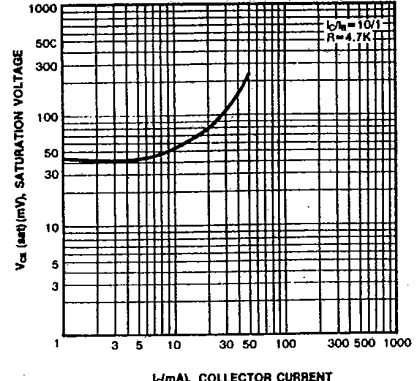
**KSR1109**

**NPN EPITAXIAL SILICON TRANSISTOR**

DC CURRENT GAIN



COLLECTOR-EMITTER SATURATION VOLTAGE



POWER DERATING

