

KSR1002

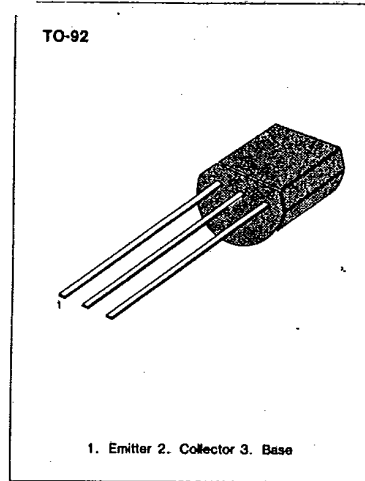
NPN EPITAXIAL SILICON TRANSISTOR

SWITCHING APPLICATION (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit Driver circuit
- Built in bias Resistor ($R_1=10K\Omega$, $R_2=10K\Omega$)
- Complement to KSR2002

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	10	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	$^\circ C$

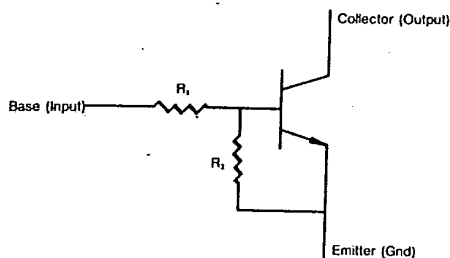


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ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\mu A, I_E=0$	50			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu A, I_B=0$	50			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=5mA$	30			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$			0.3	V
Current Gain-Bandwidth Product	f_T	$V_{CE}=5mA, I_C=10V$		250		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0$ $f=1.0MHz$		3.7		pF
Input Off Voltage	$V_{i(off)}$	$V_{CE}=5V, I_C=100\mu A$	0.5			V
Input On Voltage	$V_{i(on)}$	$V_{CE}=0.3V, I_C=10mA$			3	V
Input Resistor	R_1		7	10	13	$K\Omega$
Resistor Ratio	R_1/R_2		0.9	1	1.1	

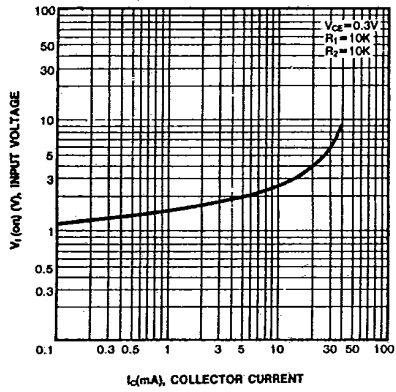
Equivalent Circuit



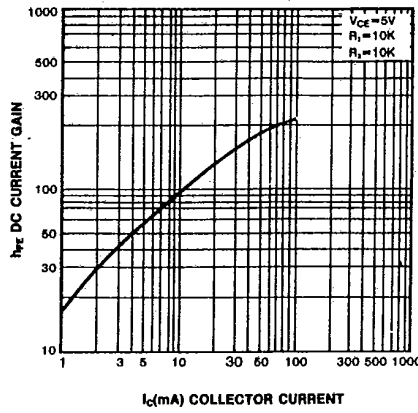
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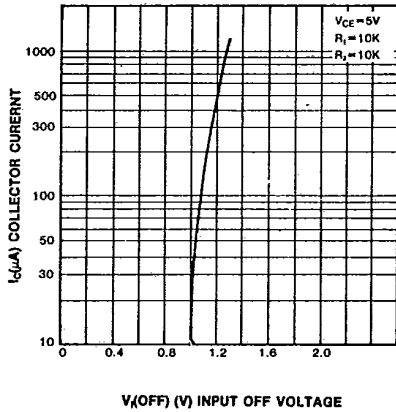
INPUT ON VOLTAGE



DC CURRENT GAIN



INPUT OFF VOLTAGE



POWER DERATING

