

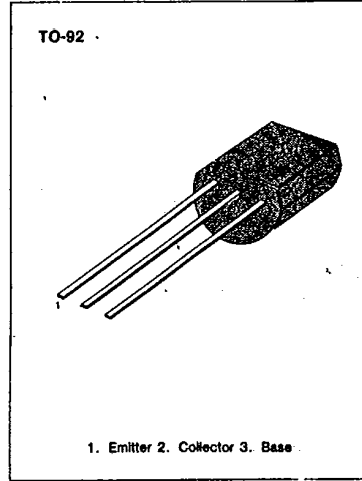
KSR1013 NPN EPITAXIAL SILICON TRANSISTOR

SWITCHING APPLICATION (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit Driver circuit
- Built in bias Resistor($R_1 = 2.2K\Omega$, $R_2 = 47K\Omega$)
- Complement to KSR2013

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBQ}	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}	$V_{CE} = 5V, I_C = 5mA$	68			
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	$V_I(on)$	$V_{CE} = 0.2V, I_C = 5mA$			1.1	V
Input Resistor	R_1		1.5	2.2	2.9	$K\Omega$
Resistor Ratio	R_1/R_2		0.042	0.047	0.052	

Equivalent Circuit

