

KSR1213

NPN EPITAXIAL SILICON TRANSISTOR

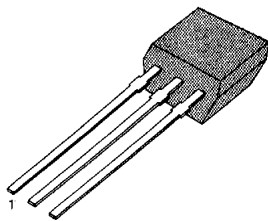
SWITCHING APPLICATION (Bias Resistor Built In)

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor ($R_1=2.2k\Omega$, $R_2=47k\Omega$)
- Complement to KSR2213

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	$^{\circ}C$

TO-92S



1. Emitter 2. Collector 3. Base

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

Characteristic	Symbol	Test Conditions	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 Cut-off 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

