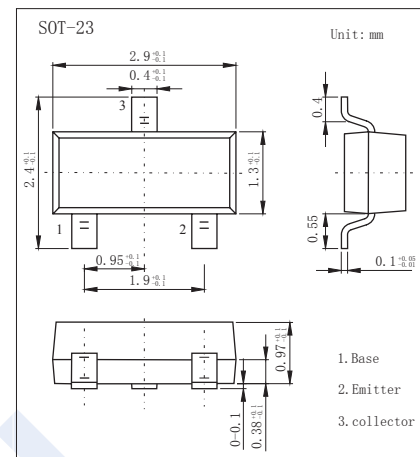
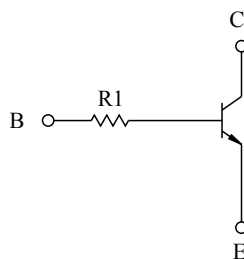


NPN Transistors

KRC110S ~ KRC114S

■ Features

- With Built in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Digital Transistors



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	50	V
Collector - Emitter Voltage	V_{CE0}	50	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

NPN Transistors

KRC110S ~ KRC114S

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage		V _{CBO}	I _C = 100 μA, I _E = 0	50			V
Collector- emitter breakdown voltage		V _{CEO}	I _C = 1 mA, I _B = 0	50			
Emitter - base breakdown voltage		V _{EBO}	I _E = 100 μ A, I _C = 0	5			
Collector-base cut-off current		I _{CBO}	V _{CB} = 50 V , I _E = 0			100	nA
Emitter cut-off current		I _{EBO}	V _{EB} = 5V , I _C =0			100	
Collector-emitter saturation voltage		V _{CE(sat)}	I _C =10 mA, I _B =0.5mA			0.3	V
Base - emitter saturation voltage		V _{BE(sat)}	I _C =10 mA, I _B =0.5mA			1.2	
DC current gain		h _{FE}	V _{CE} = 5V, I _C = 1mA	120			
Input Resistor	KRC110S	R1			4.7		KΩ
	KRC111S				10		
	KRC112S				100		
	KRC113S				22		
	KRC114S				47		
Rise Time	KRC110S	t _{rr}	V _O =5V,V _{IN} =5V,R _L =1KΩ		0.025		us
	KRC111S				0.03		
	KRC112S				0.3		
	KRC113S				0.06		
	KRC114S				0.11		
Storage Time	KRC110S	t _{stg}			3		
	KRC111S				2		
	KRC112S				6		
	KRC113S				4		
	KRC114S				5		
Fall Time	KRC110S	t _f			0.2		
	KRC111S				0.12		
	KRC112S				2		
	KRC113S				0.9		
	KRC114S				1.4		
Transition frequency		f _T	V _{CE} = 10V, I _C = 5mA		250		MHz

■ Marking

NO	KRC110S	KRC111S	KRC112S	KRC113S	KRC114S
Marking	NK	NM	NN	NO	NP