KOREA ELECTRONICS CO.,LTD.

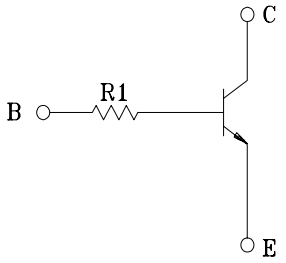
SEMICONDUCTOR
TECHNICAL DATA

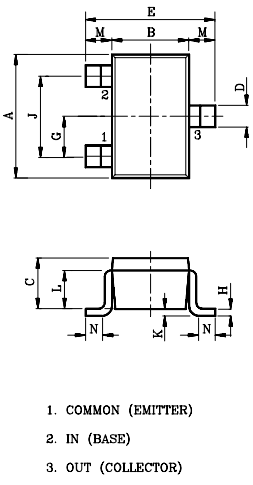
KRC410~ KRC414
EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.
- High Packing Density.

EQUIVALENT CIRCUIT





DIM	MILLIMETERS
A	2.00±0.20
B	1.25+0.15 −0.15
C	0.90±0.10
D	0.35+0.10 −0.05
E	2.10±0.20
G	0.65
H	0.15±0.10 −0.06
J	1.30
K	0.00−0.10
L	0.70
M	0.42±0.10
N	0.10 MIN

USM

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

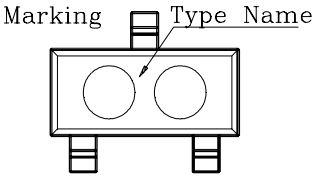
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=50V, I_E=0	-	-	100	nA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	100	nA
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=1mA	120	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	-	0.1	0.3	V
Transition Frequency		f_T *	V_{CE}=10V, I_C=5mA	-	250	-	MHz
Input Resistor	KRC410	R_1		-	4.7	-	kΩ
	KRC411			-	10	-	
	KRC412			-	100	-	
	KRC413			-	22	-	
	KRC414			-	47	-	

Note : * Characteristic of Transistor Only

MARK SPEC

TYPE	KRC410	KRC411	KRC412	KRC413	KRC414
MARK	NK	NM	NN	NO	NP



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Switching Time	Rise Time	KRC410	t_r	V_O=5V V_{IN}=5V R_L=1kΩ	-	0.025	-	μS
		KRC411			-	0.03	-	
		KRC412			-	0.3	-	
		KRC413			-	0.06	-	
		KRC414			-	0.11		
	Storage Time	KRC410	t_{stg}		-	3.0	-	
		KRC411			-	2.0	-	
		KRC412			-	6.0	-	
		KRC413			-	4.0	-	
		KRC414			-	5.0	-	
	Fall Time	KRC410	t_f		-	0.2	-	
		KRC411			-	0.12	-	
		KRC412			-	2.0	-	
		KRC413			-	0.9	-	
		KRC414			-	1.4	-	