

# SEMICONDUCTOR TECHNICAL DATA

## KRC101S~KRC106S

#### EPITAXIAL PLANAR NPN TRANSISTOR

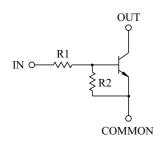
### SWITCHING APPLICATION.

INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

#### **FEATURES**

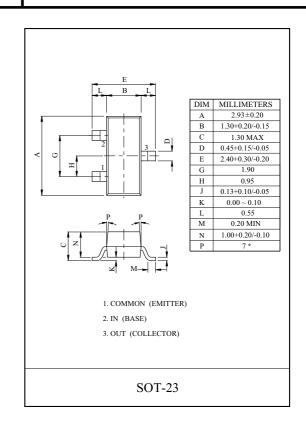
- · With Built-in Bias Resistors.
- · Simplify Circuit Design.
- · Reduce a Quantity of Parts and Manufacturing Process.

#### **EQUIVALENT CIRCUIT**



#### **BIAS RESISTOR VALUES**

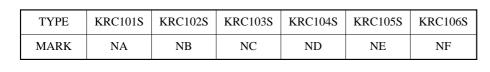
TYPE NO.	R1(k Ω)	R2(k Ω)					
KRC101S	4.7	4.7					
KRC102S	10	10					
KRC103S	22	22					
KRC104S	47	47					
KRC105S	2.2	47					
KRC106S	4.7	47					

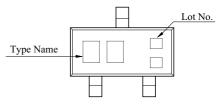


#### MAXIMUM RATING (Ta=25 ℃)

CHARACTE	RISTIC	SYMBOL	RATING	UNIT	
Output Voltage	KRC101S ~ 106S	Vo	50	V	
Input Voltage	KRC101S	V <sub>I</sub>	20, -10		
	KRC102S		30, -10	V	
	KRC103S		40, -10		
	KRC104S		40, -10	V	
	KRC105S		12, -5		
	KRC106S		20, -5		
Output Current		I <sub>O</sub>	100	mA	
Power Dissipation	WD G101G 104G	$P_{\mathrm{D}}$	200	mW	
Junction Temperature	KRC101S ~ 106S	T <sub>j</sub>	150	°C	
Storage Temperature Range		$T_{\mathrm{stg}}$	-55 ~150	$^{\circ}$	

#### Marking





#### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

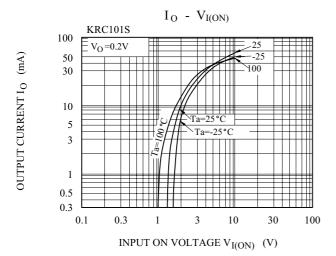
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Cut-off Current	KRC101S ~106S	I <sub>O(OFF)</sub>	V <sub>O</sub> =50V, V <sub>I</sub> =0	-	-	500	nA
DC Current Gain	KRC101S	- G <sub>I</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =10mA	30	55	-	
	KRC102S			50	80	-	
	KRC103S			70	120	-	
	KRC104S			80	200	-	
	KRC105S			80	200	-	
	KRC106S	-		80	200	-	
Output Voltage	KRC101S ~106S	V <sub>O(ON)</sub>	I <sub>O</sub> =10mA, I <sub>I</sub> =0.5mA	-	0.1	0.3	V
	KRC101S	V <sub>I(ON)</sub>	V <sub>O</sub> =0.2V, I <sub>O</sub> =5mA	-	1.5	2.0	. V
	KRC102S			-	1.8	2.4	
Input Voltage (ON)	KRC103S			-	2.1	3.0	
input voitage (ON)	KRC104S			-	2.8	5.0	
	KRC105S			-	0.8	1.1	
	KRC106S			-	0.9	1.3	
Input Votlage (OFF)	KRC101S ~104S	V <sub>I(OFF)</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =0.1mA	1.0	1.2	-	- V
input vottage (OFT)	KRC105S ~106S			0.5	0.65	-	
Transition Frequency	KRC101S ~106S	f <sub>T</sub> *	V <sub>O</sub> =10V, I <sub>O</sub> =5mA	-	200	-	MHz
	KRC101S	- I <sub>I</sub>	V <sub>I</sub> =5V	-	-	1.8	- mA
Input Current	KRC102S			-	-	0.88	
	KRC103S			-	-	0.36	
	KRC104S			-	-	0.18	
	KRC105S			-	-	3.6	
	KRC106S			-	-	1.8	

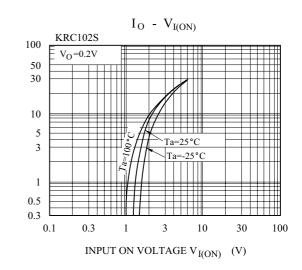
Note: \* Characteristic of Transistor Only.

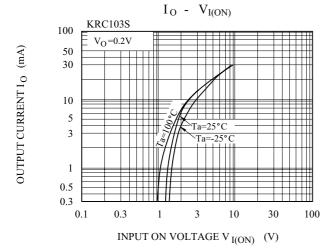
## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

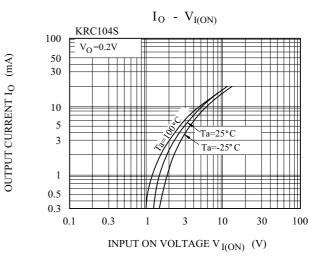
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Switching Time	Rise Time	KRC101S	- t <sub>r</sub>	$V_0=5V$ $V_{IN}=5V$ $R_L=1k\Omega$	-	0.03	-	
		KRC102S			-	0.05	-	
		KRC103S			-	0.12	-	
		KRC104S			-	0.22	-	, us
		KRC105S			-	0.01	-	
		KRC106S			-	0.03	-	
	Storage Time	KRC101S	t <sub>stg</sub>		-	2.0	-	
		KRC102S			-	2.0	-	
		KRC103S			-	2.0	-	
		KRC104S			-	2.0	-	כמון
		KRC105S			-	2.0	-	
		KRC106S			-	2.0	-	
	Fall Time	KRC101S	t <sub>f</sub>		-	0.12	-	
		KRC102S			-	0.36	-	
		KRC103S			-	0.35	-	
		KRC104S			-	0.6	-	
		KRC105S			-	0.1	-	
		KRC106S			-	0.19	-	

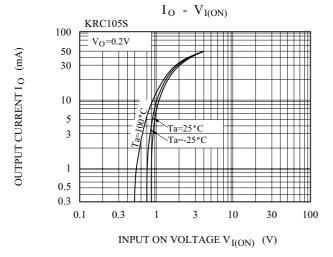
OUTPUT CURRENT IO (mA)

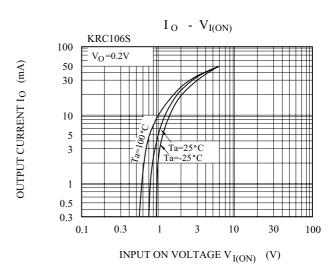


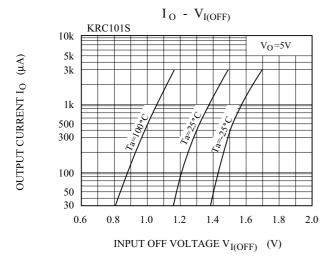


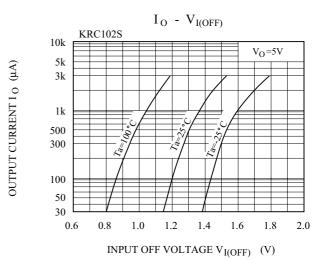


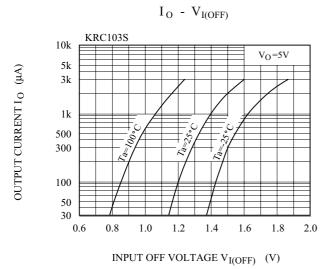


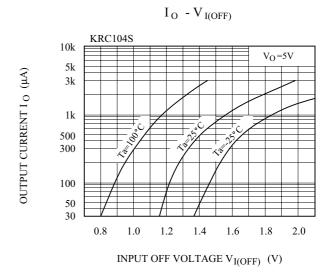


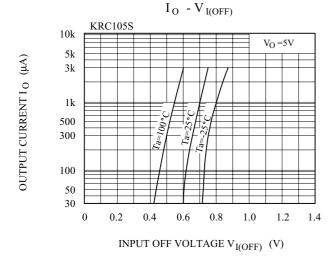


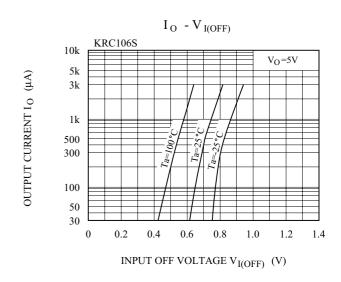












DC CURRENT GAIN GI

