

**NPN Silicon Epitaxial Planar Transistor**

■ Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

■ Applications

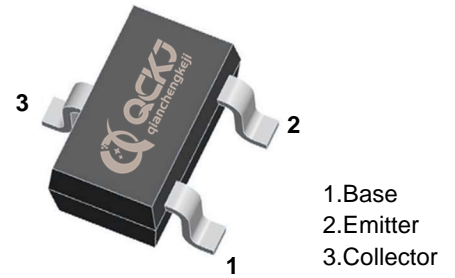
- for switching and interface circuit and drive circuit

■ Resistor Values

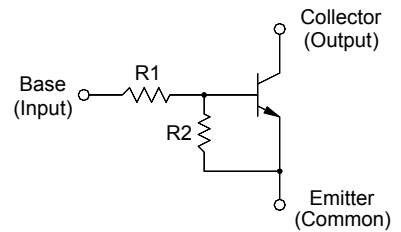
Type	R1 (KΩ)	R2 (KΩ)
KRC101S	4.7	4.7
KRC102S	10	10
KRC103S	22	22
KRC104S	47	47
KRC105S	2.2	47
KRC106S	4.7	47

■ Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	Value	Unit
Output Voltage		$V_o$	50	V
Input Voltage	KRC101S	$V_i$	20, -10	V
	KRC102S		30, -10	
	KRC103S		40, -10	
	KRC104S		40, -10	
	KRC105S		12, -5	
	KRC106S		20, -5	
Output Current		$I_o$	100	mA
Total Power Dissipation		$P_{tot}$	200	mW
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	- 55 to + 150	°C



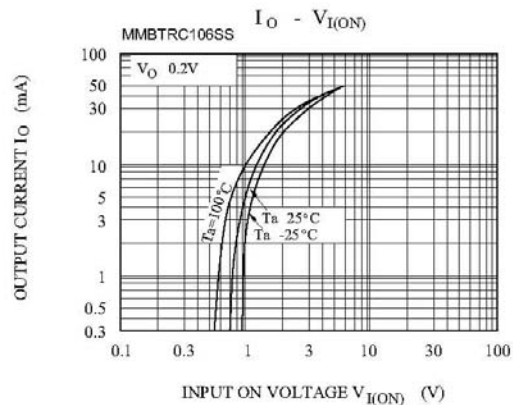
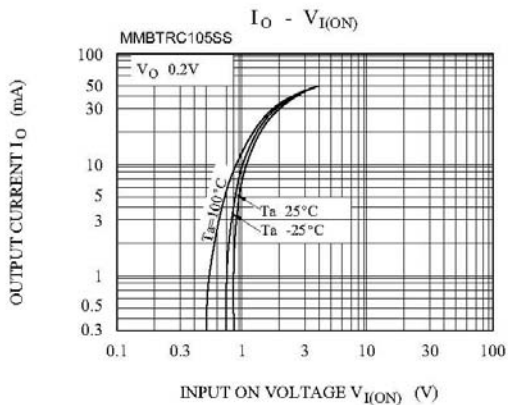
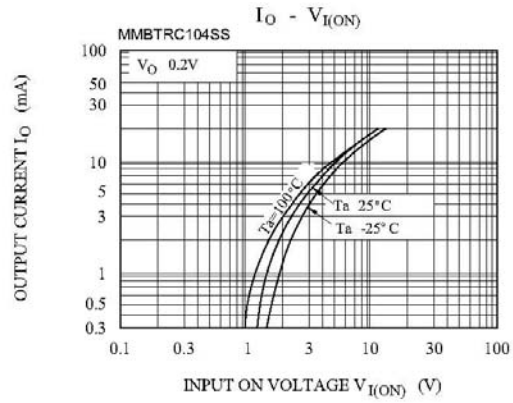
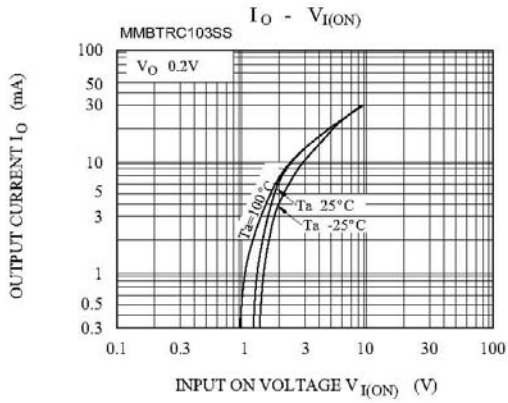
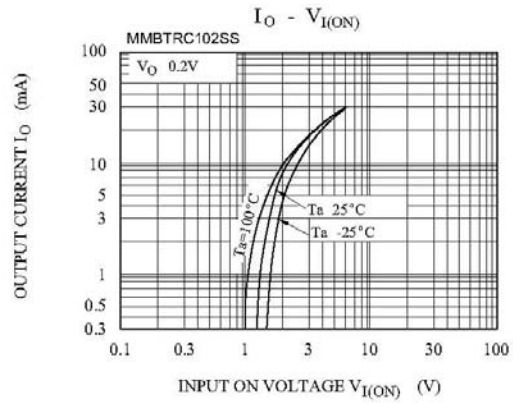
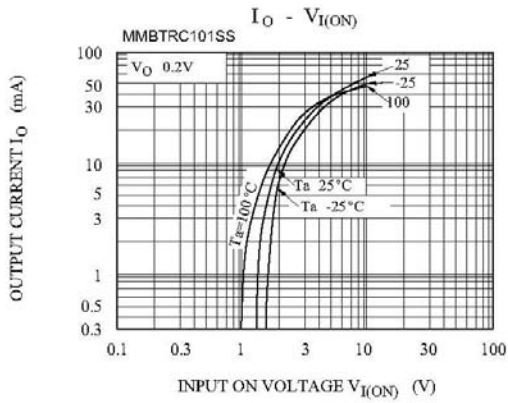
■ Simplified outline(SOT-23)

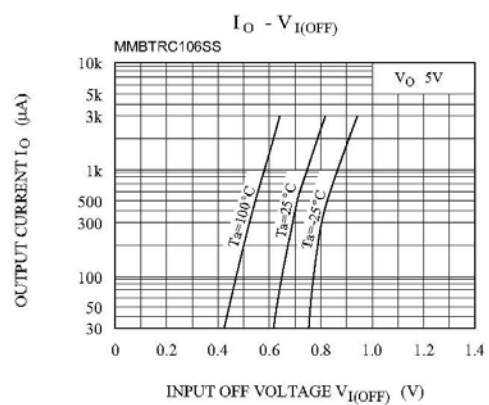
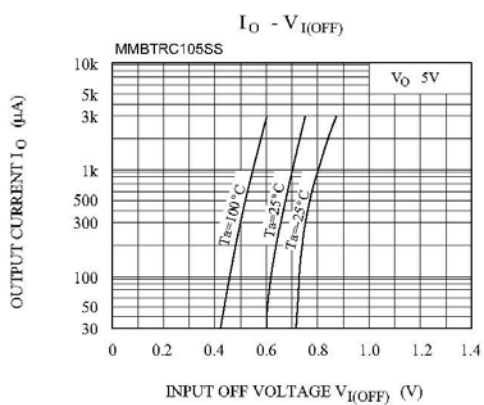
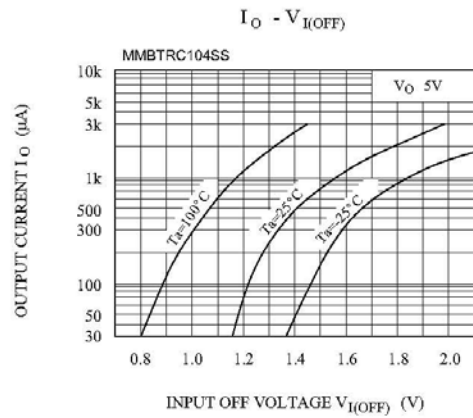
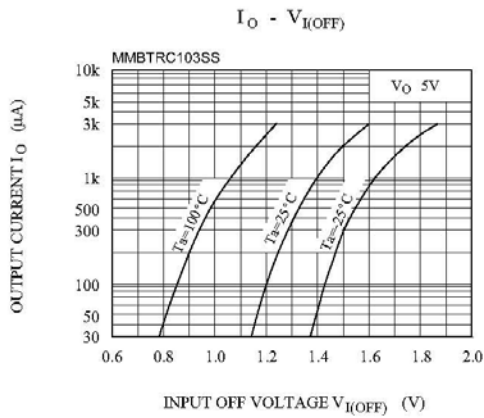
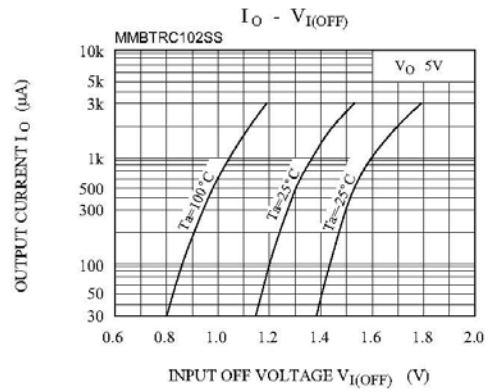
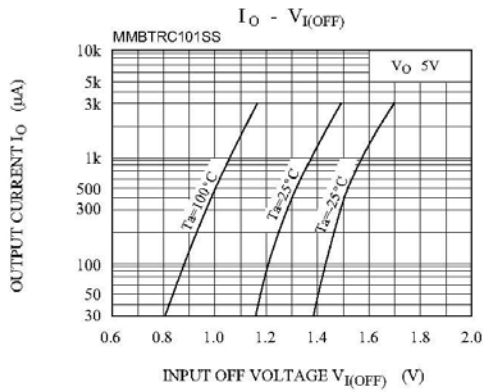


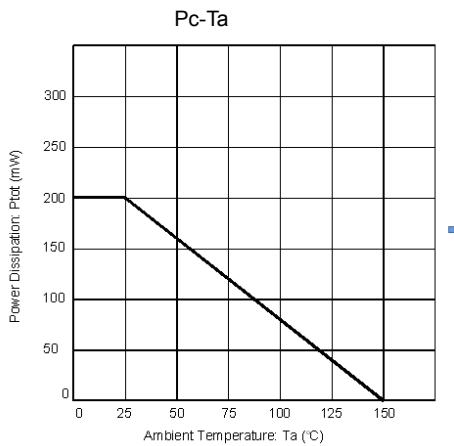
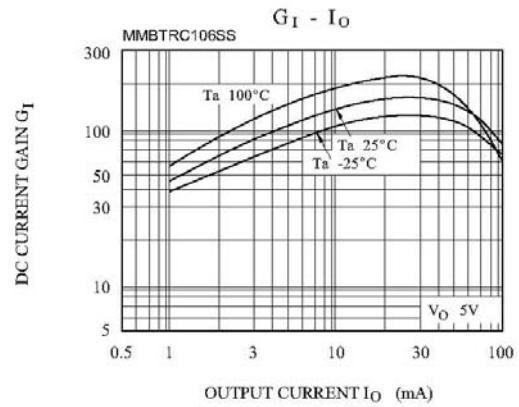
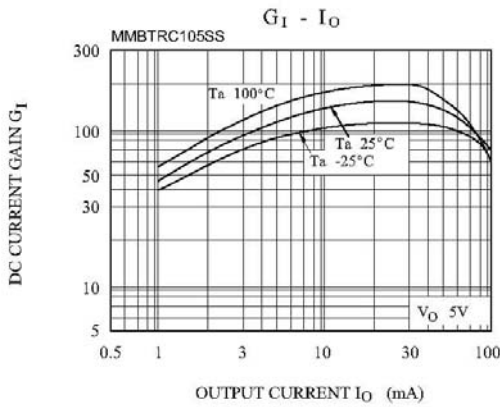
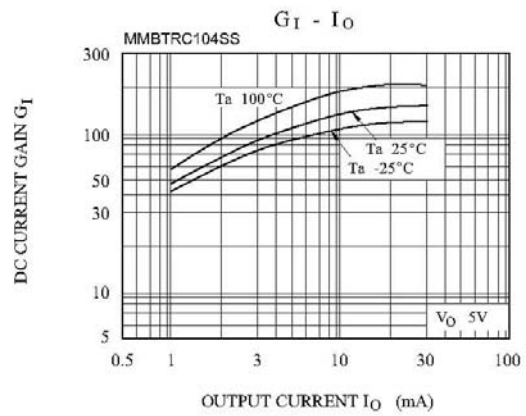
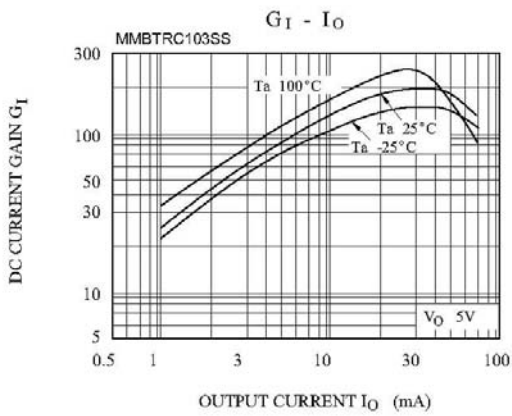
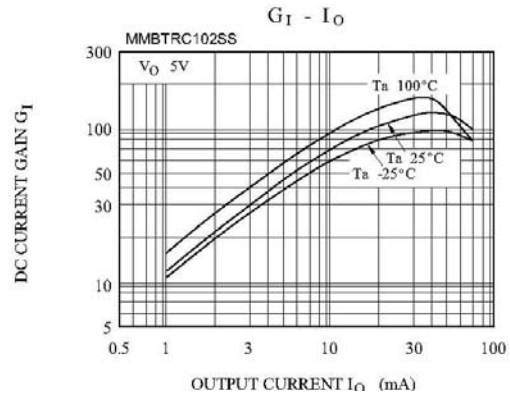
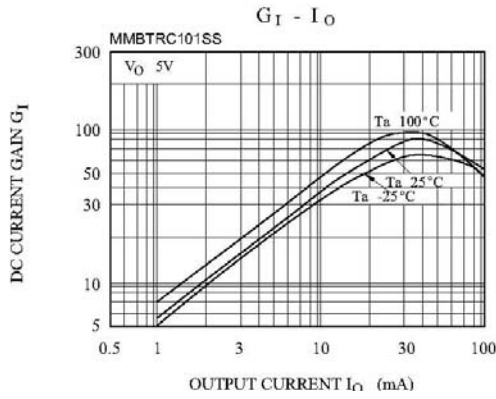
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_O = 5\text{ V}$ , $I_O = 10\text{ mA}$	$G_I$				
KRC101S		30	-	-	-
KRC102S		50	-	-	-
KRC103S		70	-	-	-
KRC104S		80	-	-	-
KRC105S		80	-	-	-
KRC106S		80	-	-	-
Output Cutoff Current at $V_O = 50\text{ V}$	$I_{O(OFF)}$	-	-	500	nA
Input Current at $V_I = 5\text{ V}$	$I_I$				
KRC101S		-	-	1.8	mA
KRC102S		-	-	0.88	
KRC103S		-	-	0.36	
KRC104S		-	-	0.18	
KRC105S		-	-	3.6	
KRC106S		-	-	1.8	
Output Voltage at $I_O = 10\text{ mA}$ , $I_I = 0.5\text{ mA}$	$V_{O(ON)}$	-	-	0.3	V
Input Voltage (ON) at $V_O = 0.2\text{ V}$ , $I_O = 5\text{ mA}$	$V_{I(ON)}$				
KRC101S		-	-	2	V
KRC102S		-	-	2.4	
KRC103S		-	-	3	
KRC104S		-	-	5	
KRC105S		-	-	1.1	
KRC106S		-	-	1.3	
Input Voltage (OFF) at $V_O = 5\text{ V}$ , $I_O = 0.1\text{ mA}$	$V_{I(OFF)}$	1 0.5	- -	- -	V
Transition Frequency at $V_O = 10\text{ V}$ , $I_O = 5\text{ mA}$	$f_T^{1)}$	-	200	-	MHz

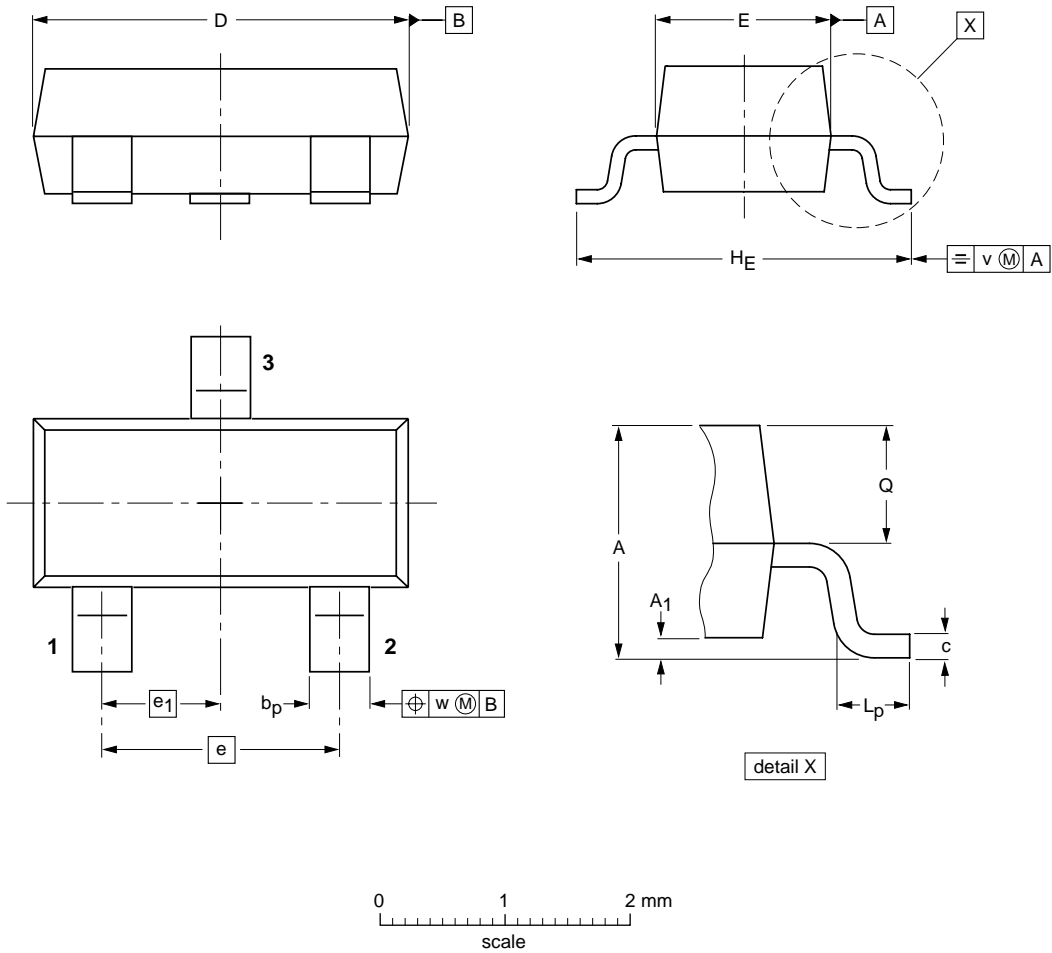
<sup>1)</sup> Characteristic of transistor only.







■ SOT-23



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1