

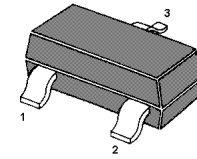
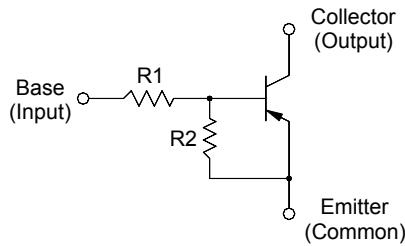
MMBTRA101SS...MMBTRA106SS

PNP Silicon Epitaxial Planar Transistor

for switching and interface circuit and drive circuit applications

Features

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



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Resistor Values

Type	R1 (K Ω)	R2 (K Ω)
MMBTRA101SS	4.7	4.7
MMBTRA102SS	10	10
MMBTRA103SS	22	22
MMBTRA104SS	47	47
MMBTRA105SS	2.2	47
MMBTRA106SS	4.7	47

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

Parameter		Symbol	Value	Unit
Output Voltage		$-V_o$	50	V
Input Voltage	MMBTRA101SS	$-V_i$	20, -10	V
	MMBTRA102SS		30, -10	
	MMBTRA103SS		40, -10	
	MMBTRA104SS		40, -10	
	MMBTRA105SS		12, -5	
	MMBTRA106SS		20, -5	
Output Current		$-I_o$	100	mA
Total Power Dissipation		P_{tot}	200	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	- 55 to + 150	$^\circ\text{C}$

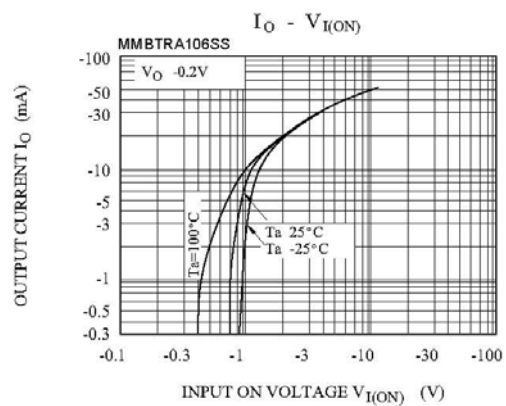
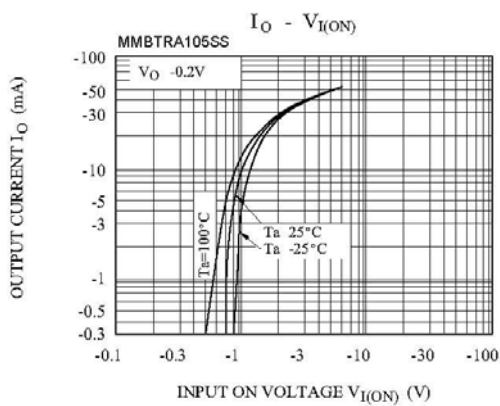
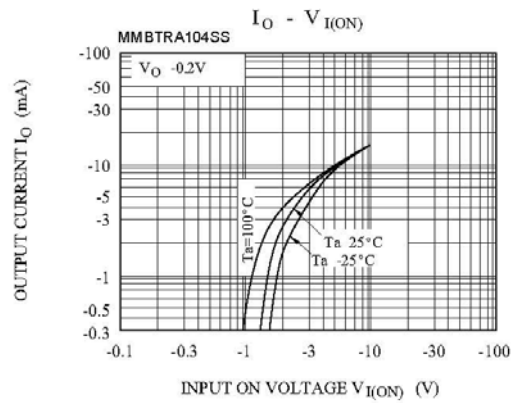
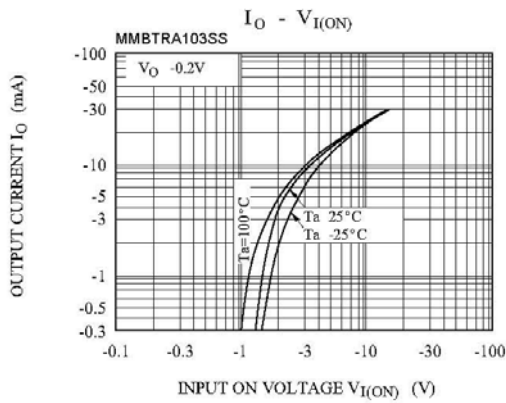
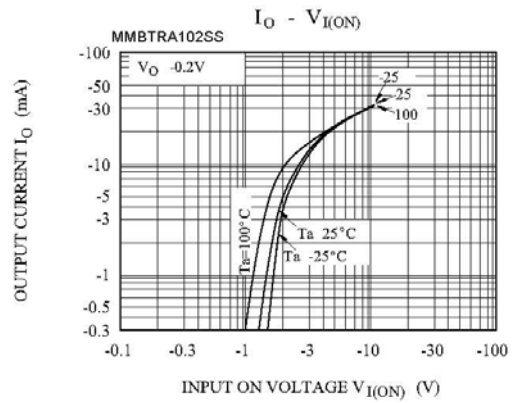
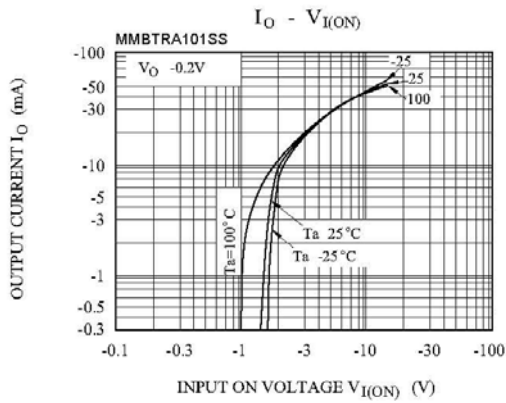
MMBTRA101SS...MMBTRA106SS

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

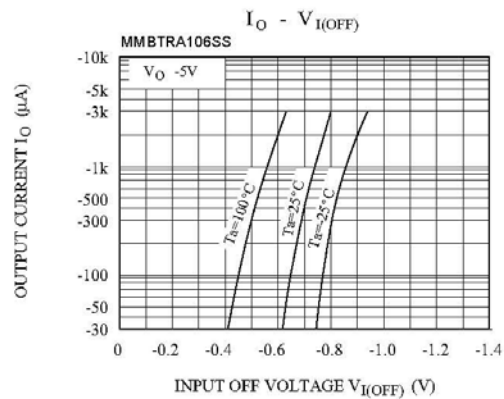
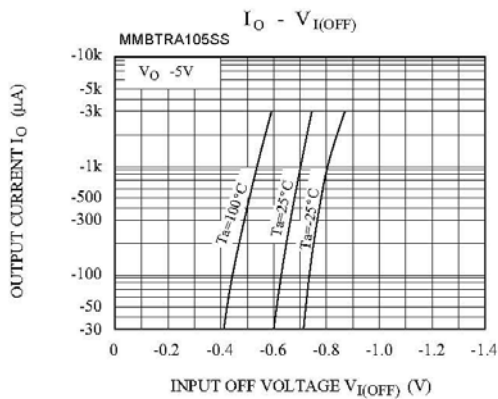
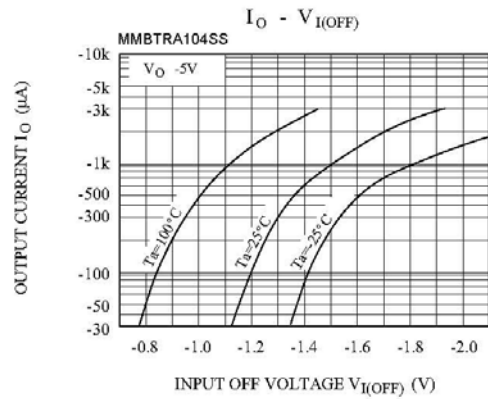
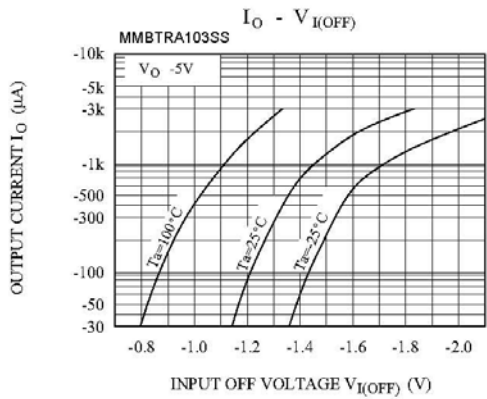
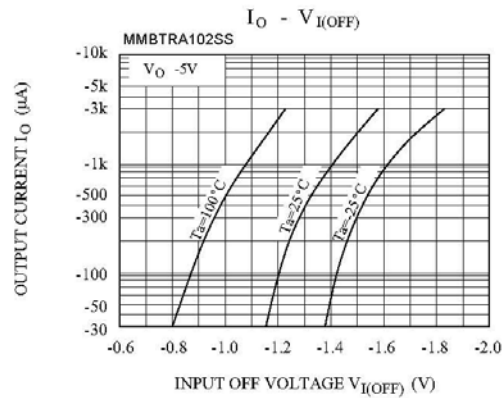
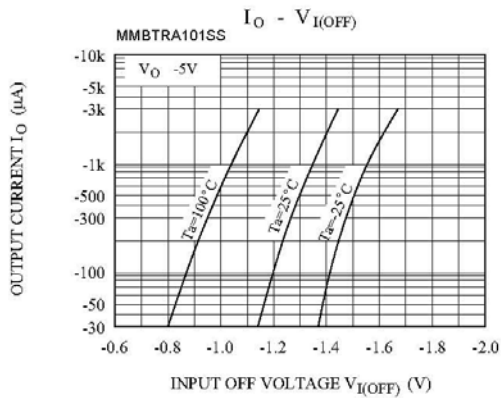
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_o = 5\text{ V}$, $-I_o = 10\text{ mA}$	MMBTRA101SS	30	-	-	-
	MMBTRA102SS	50	-	-	-
	MMBTRA103SS	70	-	-	-
	MMBTRA104SS	80	-	-	-
	MMBTRA105SS	80	-	-	-
	MMBTRA106SS	80	-	-	-
Output Cutoff Current at $-V_o = 50\text{ V}$	$-I_{O(OFF)}$	-	-	500	nA
Input Current at $-V_i = 5\text{ V}$	MMBTRA101SS	-	-	1.8	mA
	MMBTRA102SS	-	-	0.88	
	MMBTRA103SS	-	-	0.36	
	MMBTRA104SS	-	-	0.18	
	MMBTRA105SS	-	-	3.6	
	MMBTRA106SS	-	-	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 $-V_o = 0.2\text{ V}$, $-I_o = 5\text{ mA}$	MMBTRA101SS	-	-	2	V
	MMBTRA102SS	-	-	2.4	
	MMBTRA103SS	-	-	3	
	MMBTRA104SS	-	-	5	
	MMBTRA105SS	-	-	1.1	
	MMBTRA106SS	-	-	1.3	
Input Voltage (OFF) at $-V_o = 5\text{ V}$, $-I_o = 0.1\text{ mA}$	MMBTRA101SS~104SS	$-V_{I(OFF)}$	1	-	V
	MMBTRA105SS~106SS		0.5	-	
Transition Frequency at $-V_o = 10\text{ V}$, $-I_o = 5\text{ mA}$	f_T ¹⁾	-	200	-	MHz

¹⁾ Characteristic of transistor only.

MMBTRA101SS...MMBTRA106SS



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