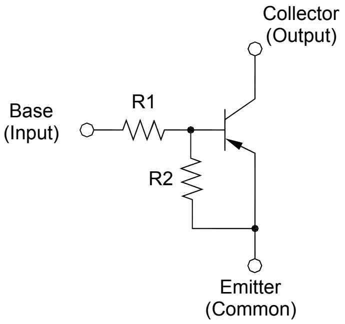
MMBTRA221SS...MMBTRA226SS

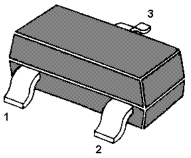
PNP Silicon Epitaxial Planar Transistor

for high current switching, interface circuit and driver circuit application.

Feature

- With built-in bias resistor
- 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 (KΩ)	R2 (KΩ)
MMBTRA221SS	1	1
MMBTRA222SS	2.2	2.2
MMBTRA223SS	4.7	4.7
MMBTRA224SS	10	10
MMBTRA225SS	1	10
MMBTRA226SS	2.2	10

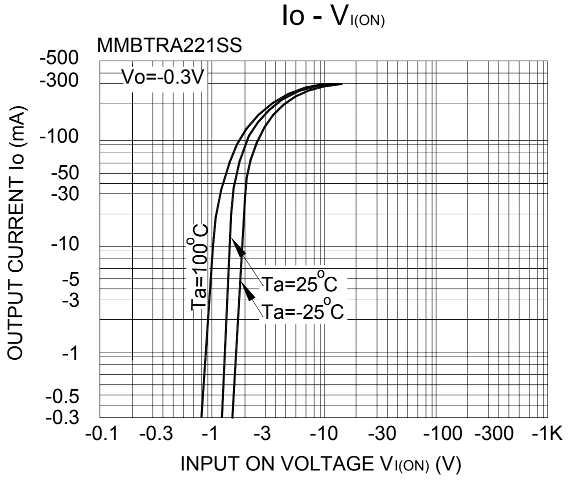
Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Output Voltage		-V_O	50	V
Input Voltage	MMBTRA221SS	-V_I	10, -10	V
	MMBTRA222SS		12, -10	
	MMBTRA223SS		20, -10	
	MMBTRA224SS		30, -10	
	MMBTRA225SS		10, -5	
	MMBTRA226SS		12, -6	
Output Current		-I_O	300	mA
Total Power Dissipation		P_{tot}	200	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 55 to + 150	°C

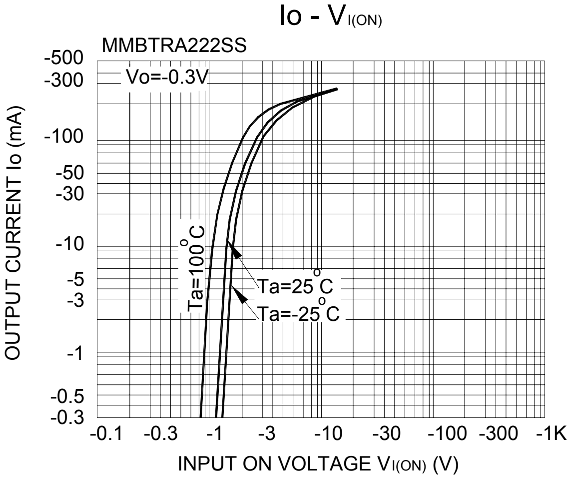
Characteristics at $T_a = 25\ ^{o}C$

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_O = 5$ V, $-I_O = 50$ mA	MMBTRA221SS	G_I	33	-	-	-
	MMBTRA222SS		39	-	-	-
	MMBTRA223SS		47	-	-	-
	MMBTRA224SS		56	-	-	-
	MMBTRA225SS		56	-	-	-
	MMBTRA226SS		56	-	-	-
Output Cutoff Current at $-V_O = 30$ V		$-I_{O(OFF)}$	-	-	10	µA
Input Current at $-V_I = 5$ V	MMBTRA221SS	$-I_I$	-	-	7.2	mA
	MMBTRA222SS		-	-	3.8	
	MMBTRA223SS		-	-	1.8	
	MMBTRA224SS		-	-	0.88	
	MMBTRA225SS		-	-	7.2	
	MMBTRA226SS		-	-	3.6	
Output Voltage at $-I_O = 10$ mA, $-I_I = 0.5$ mA		$-V_{O(ON)}$	-	-	0.6	V
Input Voltage (ON) at $-V_O = 0.3$ V, $-I_O = 20$ mA	MMBTRA221SS	$-V_{I(ON)}$	-	-	3	V
	MMBTRA222SS		-	-	3	
	MMBTRA223SS		-	-	3	
	MMBTRA224SS		-	-	3	
	MMBTRA225SS		-	-	3	
	MMBTRA226SS		-	-	2	
Input Voltage (OFF) at $-V_O = 5$ V, $-I_O = 0.1$ mA	MMBTRA221SS~224SS	$-V_{I(OFF)}$	0.5	-	-	V
	MMBTRA225SS~226SS		0.3	-	-	
Transition Frequency at $-V_O = 10$ V, $-I_O = 5$ mA, f = 100 MHz		f_T [1]	-	200	-	MHz

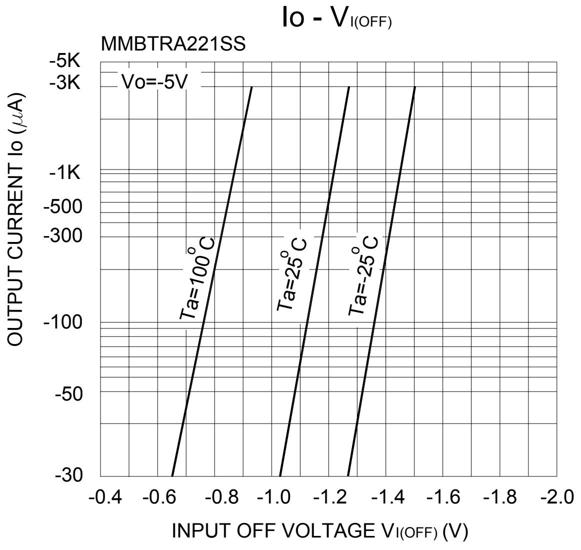
[1] Characteristic of transistor only.



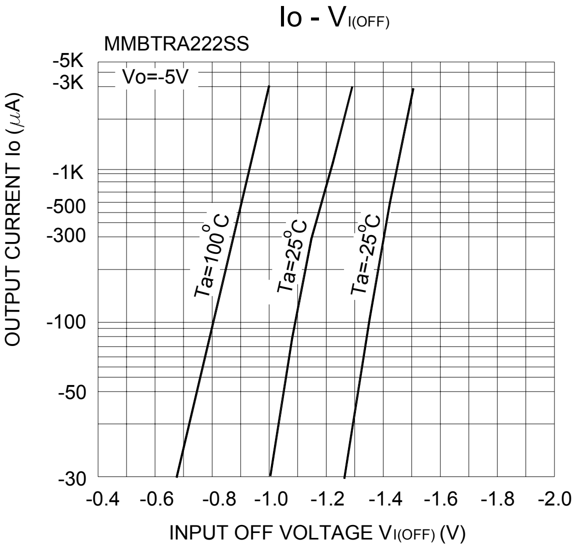
Io - $V_{I(ON)}$



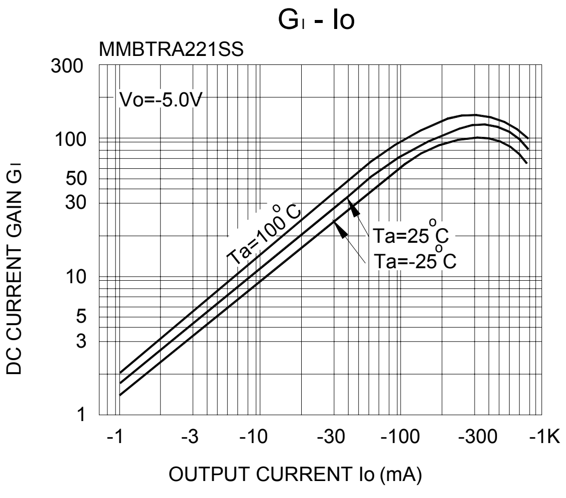
Io - $V_{I(ON)}$



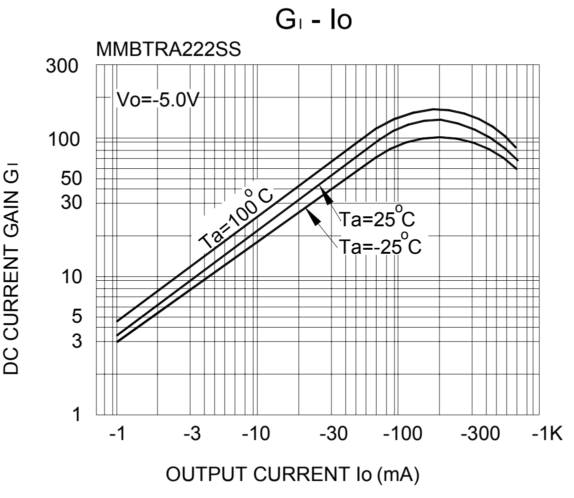
Io - $V_{I(OFF)}$



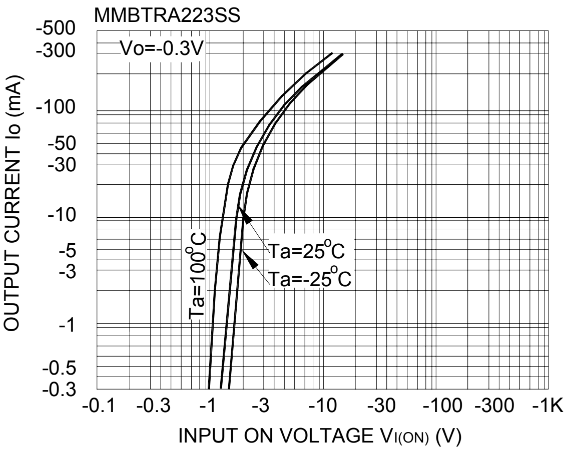
Io - $V_{I(OFF)}$



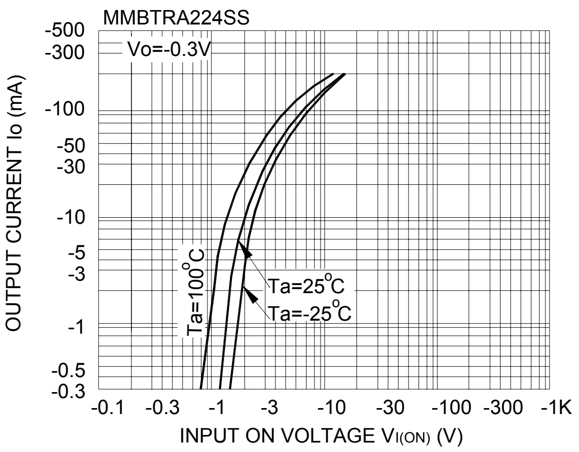
G_I - Io



G_I - Io



Io - $V_{I(ON)}$



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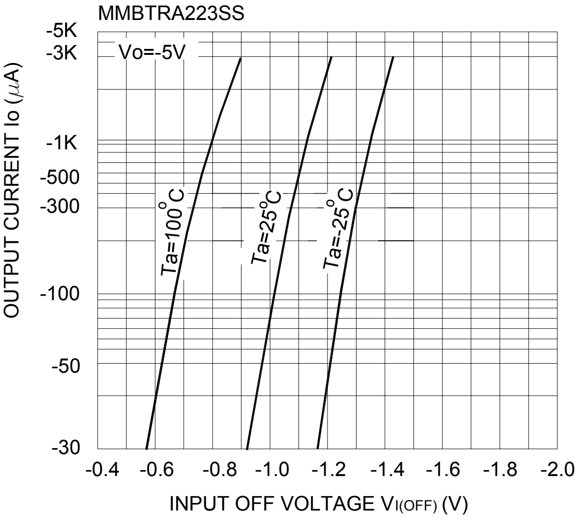
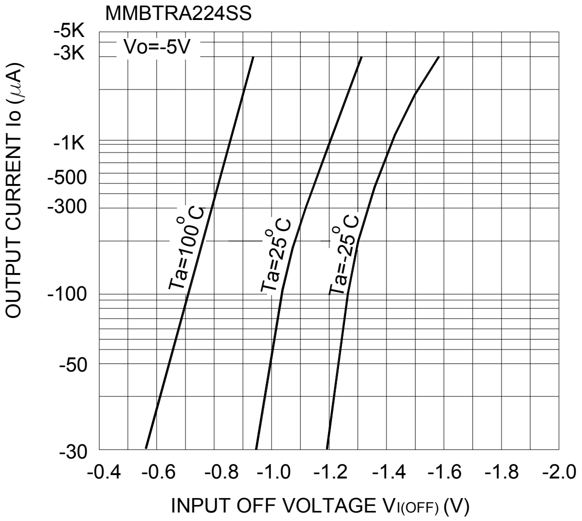
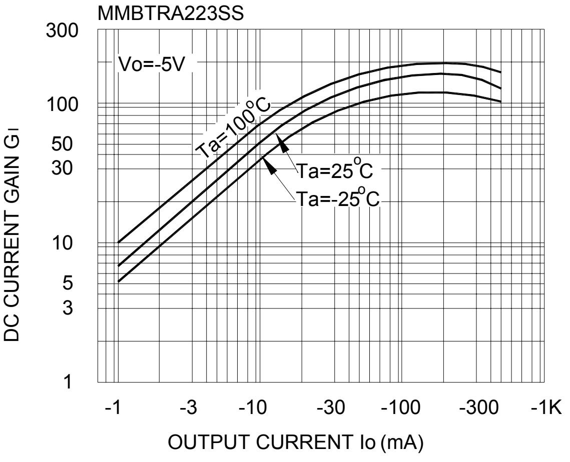


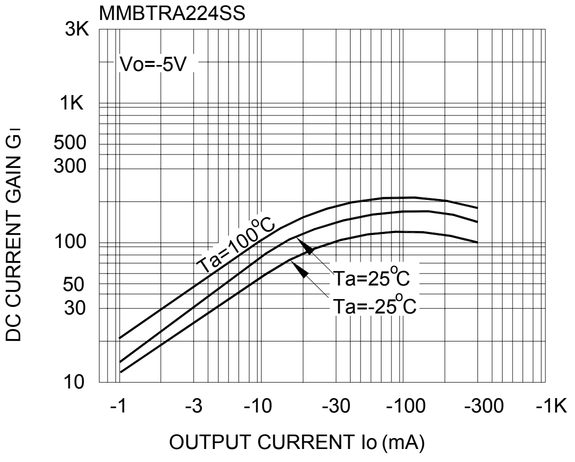
Io - $V_{I(OFF)}$



Io - $V_{I(OFF)}$

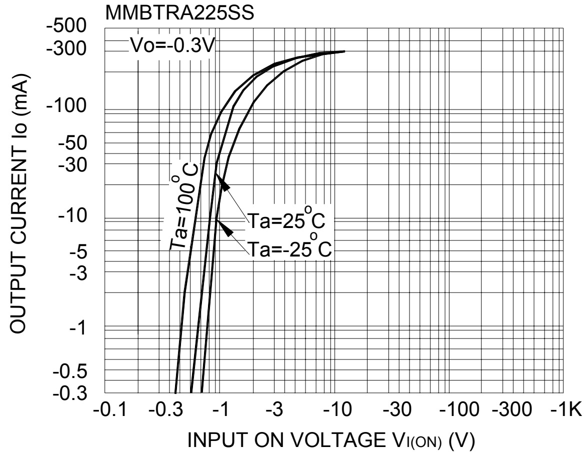


G_I - Io

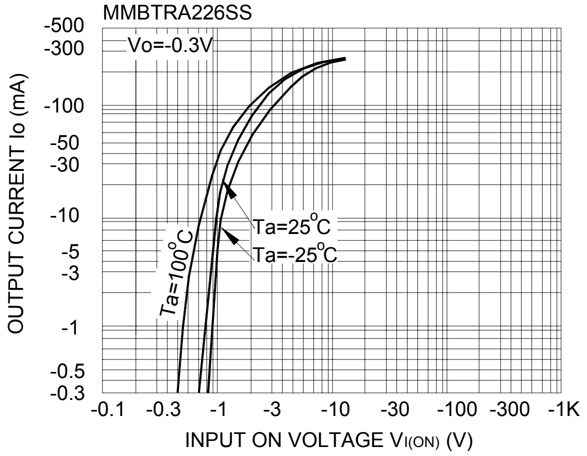


G_I - Io

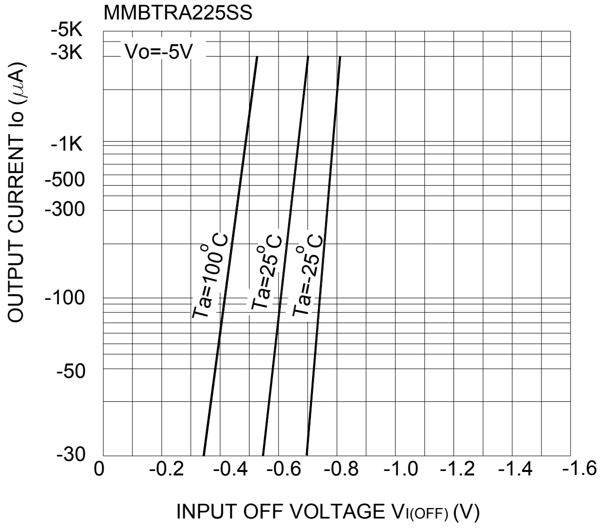
Io - $V_{I(ON)}$



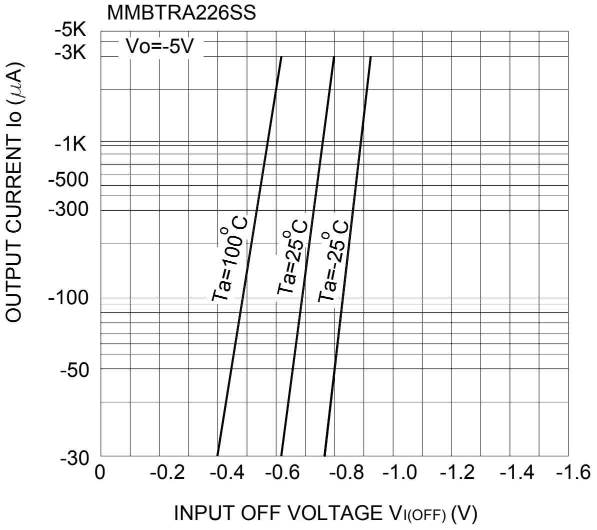
Io - $V_{I(ON)}$



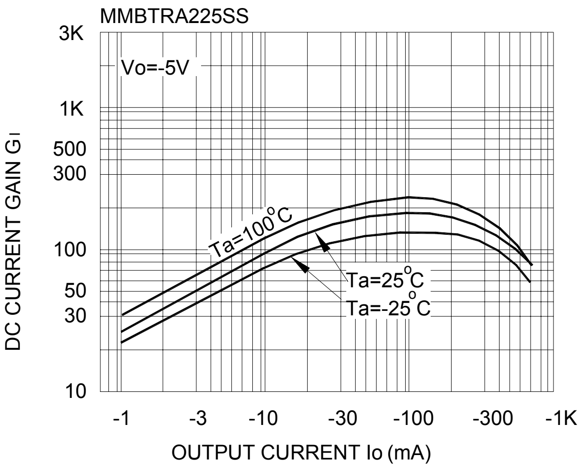
Io - $V_{I(OFF)}$



Io - $V_{I(OFF)}$



G_I - Io



G_I - Io