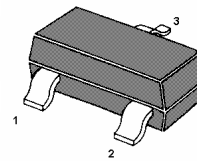


# MMBTRA221SS...MMBTRA226SS

## PNP Silicon Epitaxial Planar Transistor

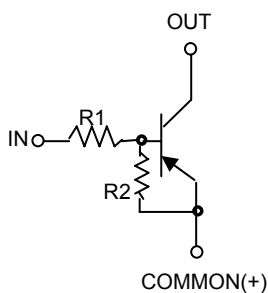
for high current switching, interface circuit and driver circuit application.

- With Built-in Bias Resistor
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- High Output Current: -300mA



1. In 2. Common 3. Out

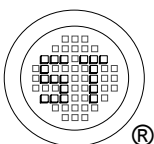
SOT-23 Plastic Package



TYPE NO.	R1(KΩ)	R2(KΩ)
MMBTRA221SS	1	1
MMBTRA222SS	2.2	2.2
MMBTRA223SS	4.7	4.7
MMBTRA224S	10	10
MMBTRA225SS	1	10
MMBTRA226SS	2.2	10

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

		Symbol	Rating	Unit
Output Voltage	MMBTRA221SS~226SS	$V_o$	-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	MMBTRA221SS~226SS	$I_o$	-300	mA
Power Dissipation		$P_{tot}$	200	mW
Junction Temperature		$T_J$	150	$^\circ\text{C}$
Storage Temperature Range		$T_s$	-55~+150	$^\circ\text{C}$



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Certificate No. 71116



ISO 9001:2000  
Certificate No. 0506098

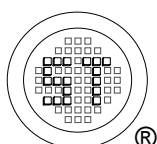
Dated : 20/10/2005

# MMBTRA221SS...MMBTRA226SS

## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

		Symbol	Min.	TYP	Max.	Unit
Output Cut-off Current at $-V_O=30\text{V}$	MMBTRA221SS~226SS	$-I_{O(OFF)}$	-	-	10	$\mu\text{A}$
DC Current Gain at $-V_O=5\text{V}$ , $-I_O=50\text{mA}$	MMBTRA221SS	$G_I$	33	-	-	
	MMBTRA222SS		39	-	-	
	MMBTRA223SS		47	-	-	
	MMBTRA224SS		56	-	-	
	MMBTRA225SS		56	-	-	
	MMBTRA226SS		56	-	-	
Output Voltage at $-I_O=10\text{mA}$ , $-I_I=0.5\text{mA}$	MMBTRA221SS~226SS	$-V_{O(ON)}$	-	-	0.6	V
Input Voltage (ON) at $-V_O=0.3\text{V}$ , $-I_O=20\text{mA}$	MMBTRA221SS	$-V_{I(ON)}$	-	-	3	V
	MMBTRA222SS		-	-	3	
	MMBTRA223SS		-	-	3	
	MMBTRA224SS		-	-	3	
	MMBTRA225SS		-	-	3	
	MMBTRA226SS		-	-	3	
Input Voltage (OFF) at $-V_O=5\text{V}$ , $-I_O=0.1\text{mA}$	MMBTRA221SS~224SS	$-V_{I(OFF)}$	0.5	-	-	V
	MMBTRA225SS~226SS		0.3	-	-	
Transition Frequency at $-V_O=10\text{V}$ , $-I_O=5\text{mA}$ ,	MMBTRA221SS~226SS	$f_T$ <sup>1)</sup>	-	200	-	MHz
Input Current at $-V_I=5\text{V}$	MMBTRA221SS	$-I_I$	-	-	7.2	mA
	MMBTRA222SS		-	-	3.8	
	MMBTRA223SS		-	-	1.8	
	MMBTRA224SS		-	-	0.88	
	MMBTRA225SS		-	-	7.2	
	MMBTRA226SS		-	-	3.6	

<sup>1)</sup> Characteristic of Transistor Only



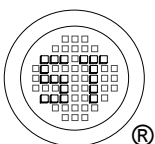
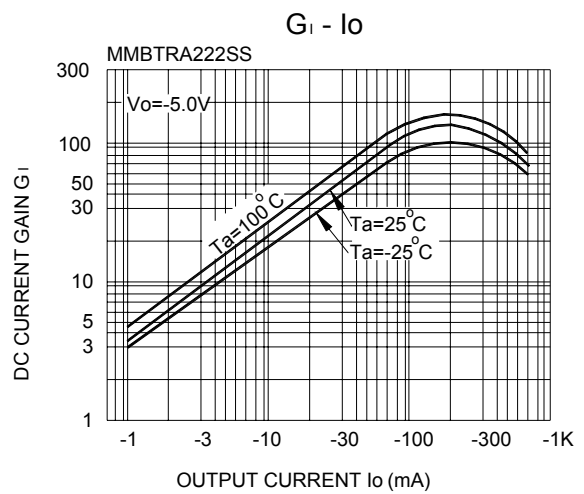
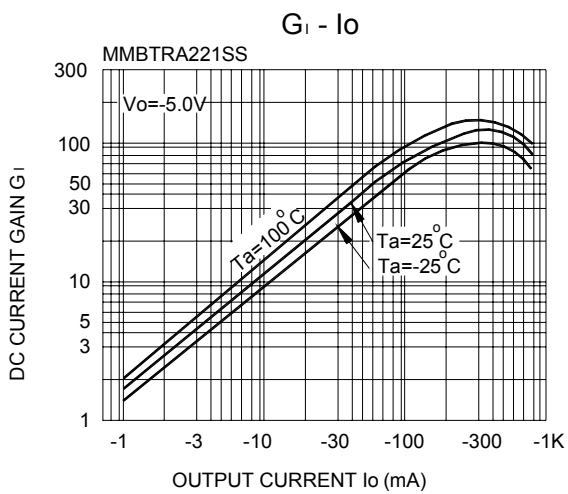
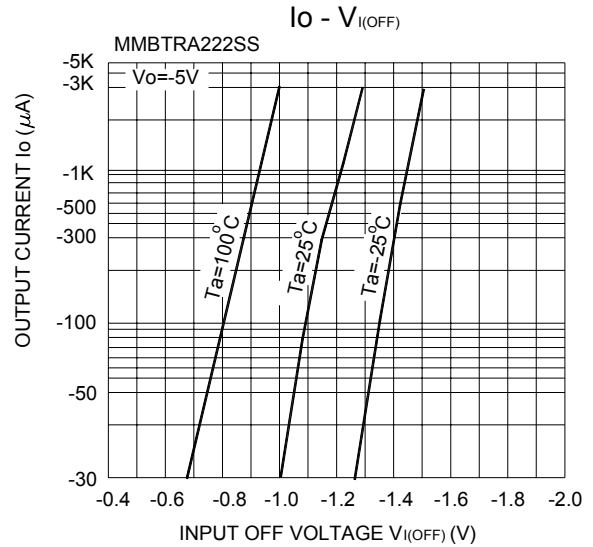
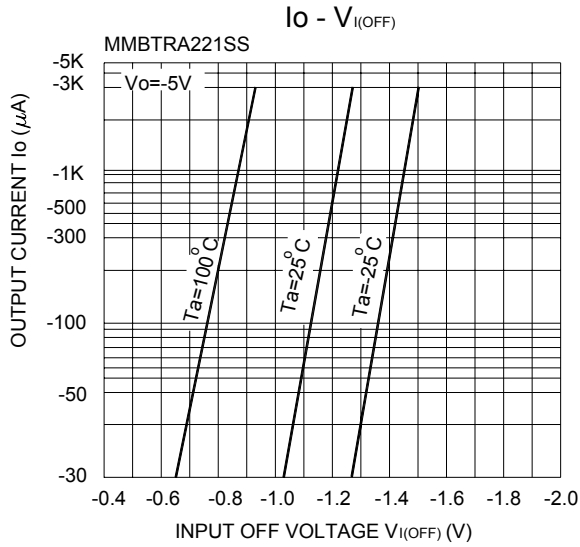
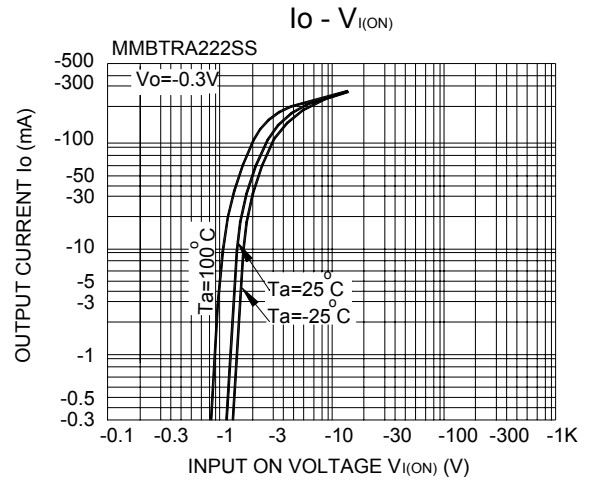
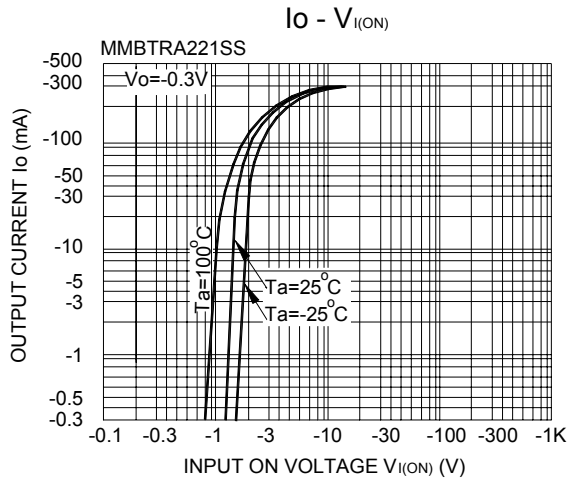
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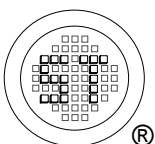
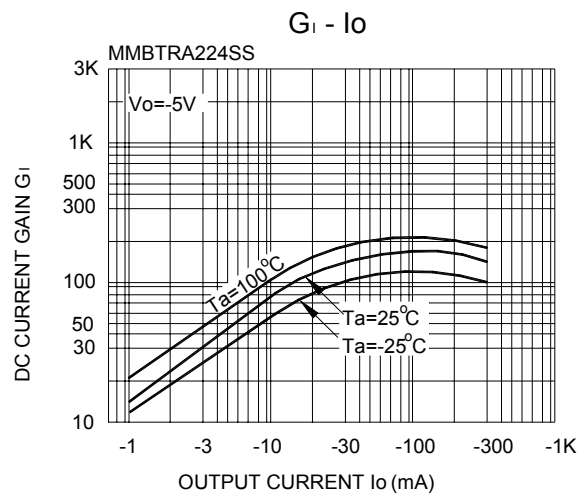
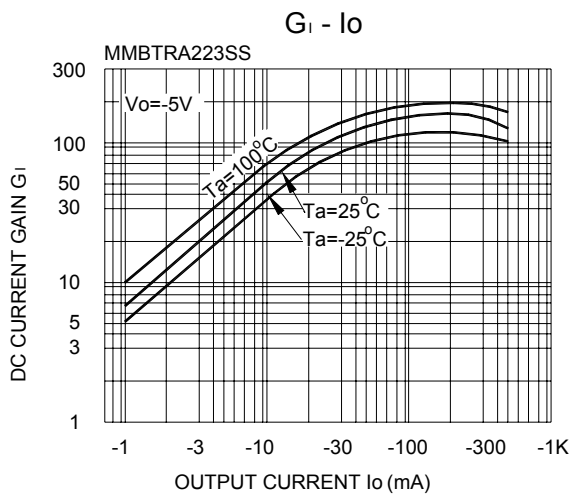
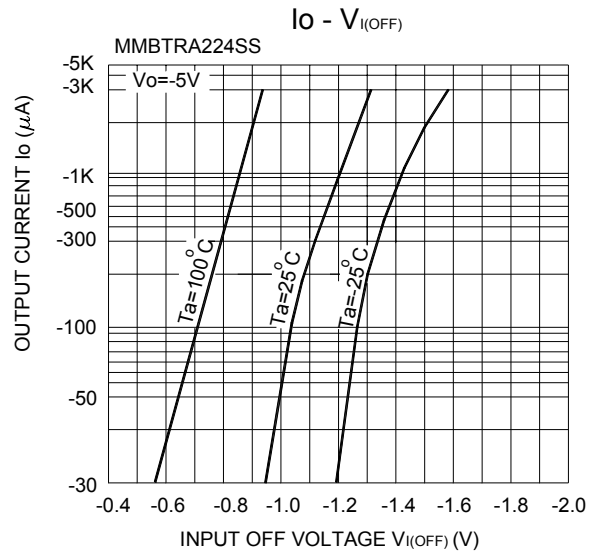
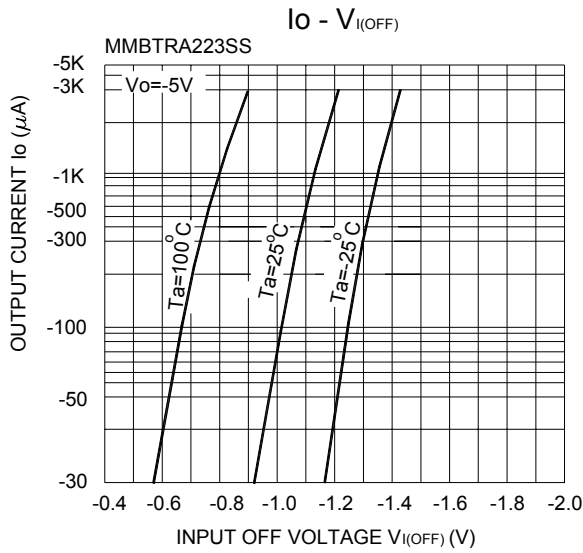
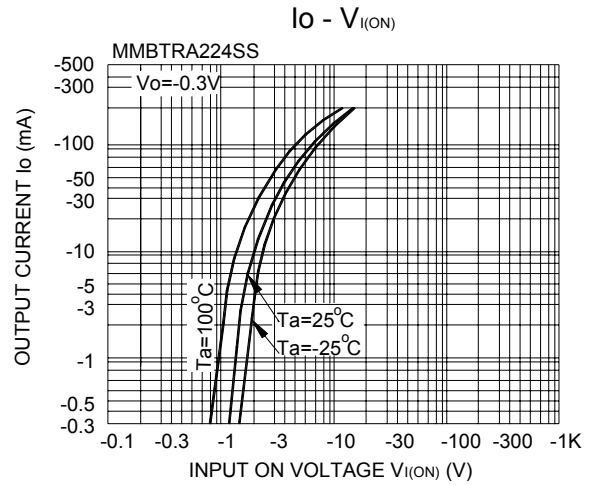
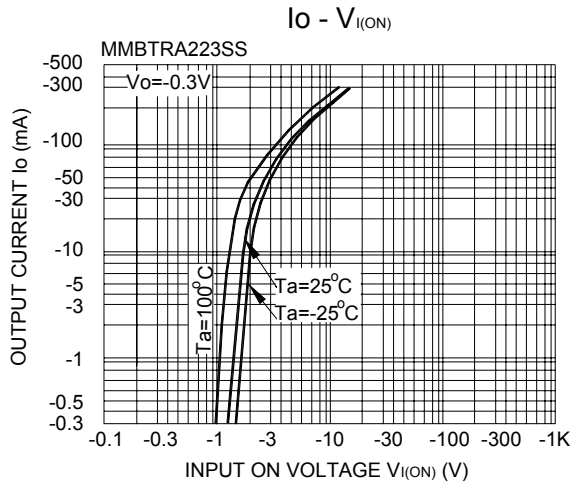
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ISO/TS 16949:2002 Certificate No. 05103 ISO 14001:2004 Certificate No. 7116 ISO 9001:2000 Certificate No. 050098

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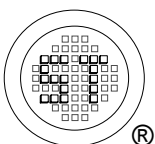
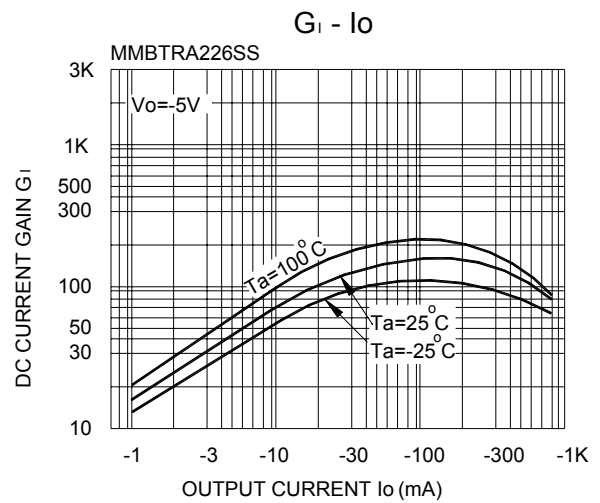
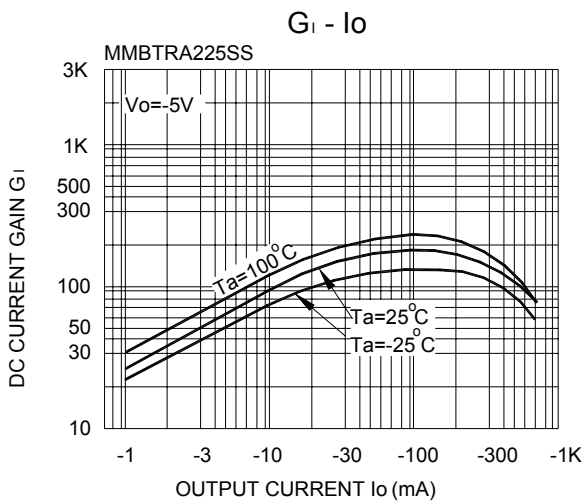
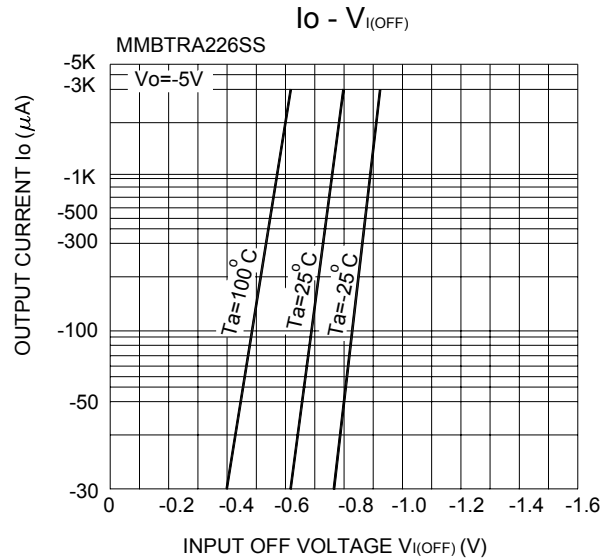
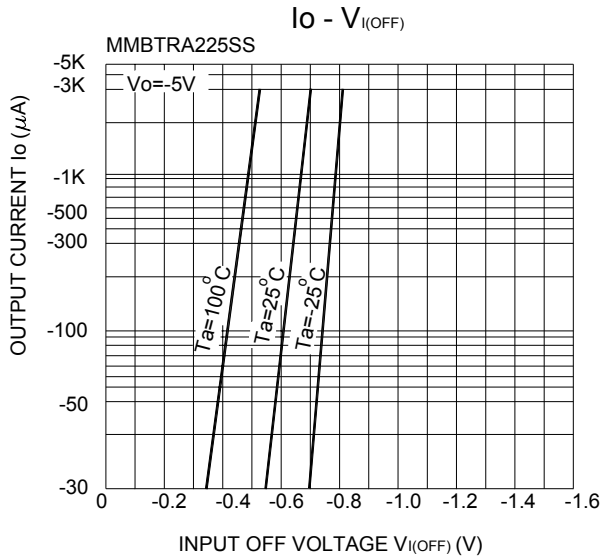
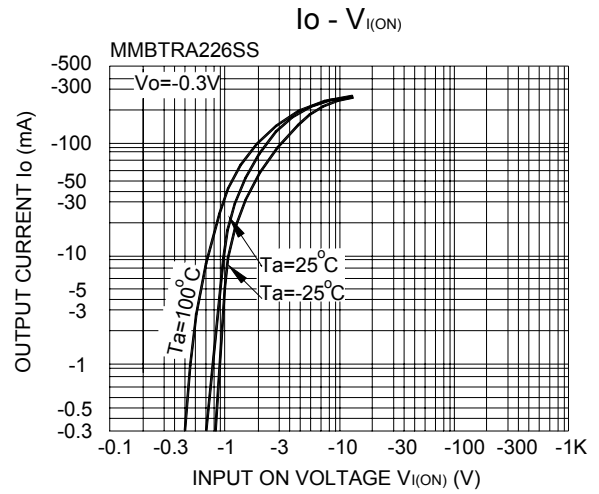
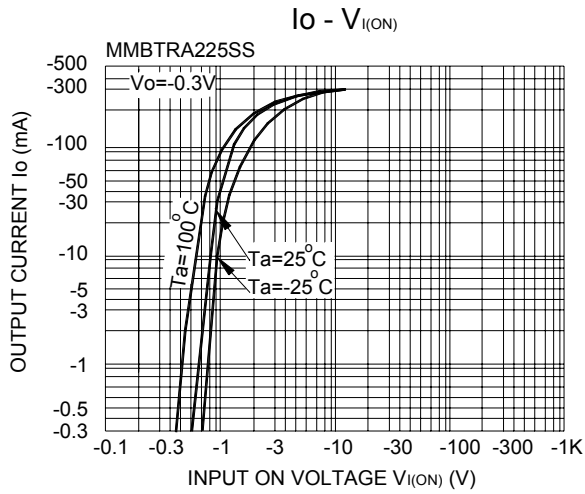
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