

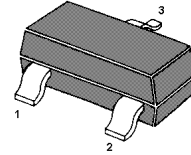
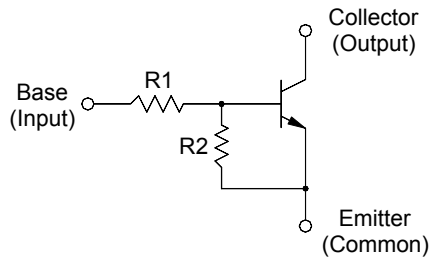
MMBTRC101SS...MMBTRC106SS

NPN 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



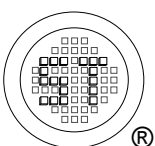
1. Base 2. Emitter 3. Collector
TO-236 Plastic Package

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
MMBTRC101SS	4.7	4.7
MMBTRC102SS	10	10
MMBTRC103SS	22	22
MMBTRC104SS	47	47
MMBTRC105SS	2.2	47
MMBTRC106SS	4.7	47

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

Parameter		Symbol	Value	Unit
Output Voltage		V_o	50	V
Input Voltage	MMBTRC101SS	V_i	20, -10	V
	MMBTRC102SS		30, -10	
	MMBTRC103SS		40, -10	
	MMBTRC104SS		40, -10	
	MMBTRC105SS		12, -5	
	MMBTRC106SS		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	$^\circ\text{C}$



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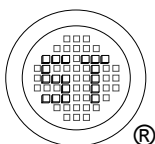
ISO/TS 16949 : 2009 Certificate No. 160713000
 ISO14001 : 2004 Certificate No. 7116
 ISO 9001 : 2008 Certificate No. 60712410
 BS-OHSAS 18001 : 2007 Certificate No. 7116
 IECQ QC 080000 Certificate No. PRC-18294-148-1

MMBTRC101SS...MMBTRC106SS

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_O = 5\text{ V}$, $I_O = 10\text{ mA}$	MMBTRC101SS	30	-	-	-
	MMBTRC102SS	50	-	-	-
	MMBTRC103SS	70	-	-	-
	MMBTRC104SS	80	-	-	-
	MMBTRC105SS	80	-	-	-
	MMBTRC106SS	80	-	-	-
Output Cutoff Current at $V_O = 50\text{ V}$	$I_{O(OFF)}$	-	-	500	nA
Input Current at $V_I = 5\text{ V}$	MMBTRC101SS	-	-	1.8	mA
	MMBTRC102SS	-	-	0.88	
	MMBTRC103SS	-	-	0.36	
	MMBTRC104SS	-	-	0.18	
	MMBTRC105SS	-	-	3.6	
	MMBTRC106SS	-	-	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 $V_O = 0.2\text{ V}$, $I_O = 5\text{ mA}$	MMBTRC101SS	-	-	2	V
	MMBTRC102SS	-	-	2.4	
	MMBTRC103SS	-	-	3	
	MMBTRC104SS	-	-	5	
	MMBTRC105SS	-	-	1.1	
	MMBTRC106SS	-	-	1.3	
Input Voltage (OFF) at $V_O = 5\text{ V}$, $I_O = 0.1\text{ mA}$	MMBTRC101SS~104SS	$V_{I(OFF)}$	1	-	V
	MMBTRC105SS~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.

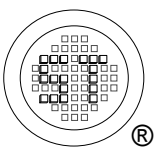
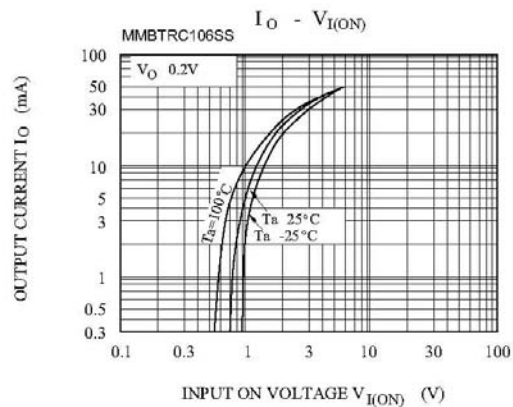
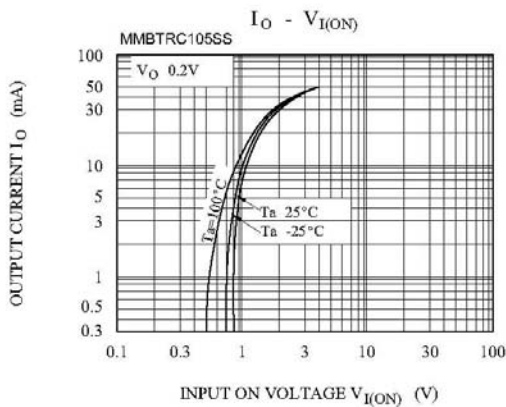
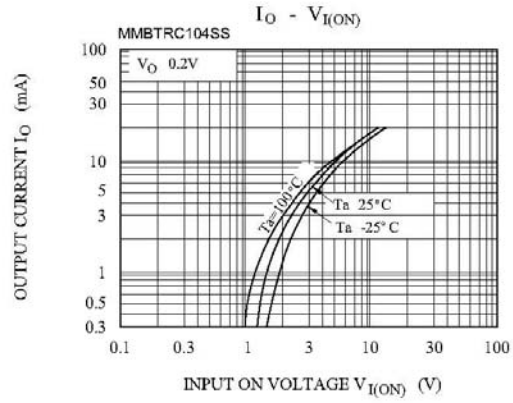
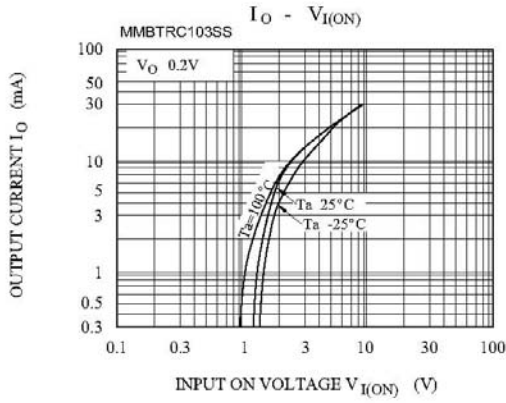
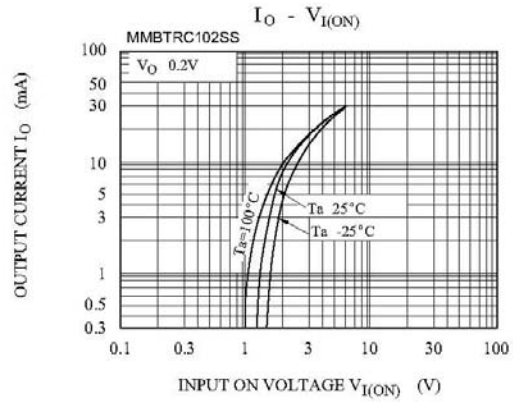
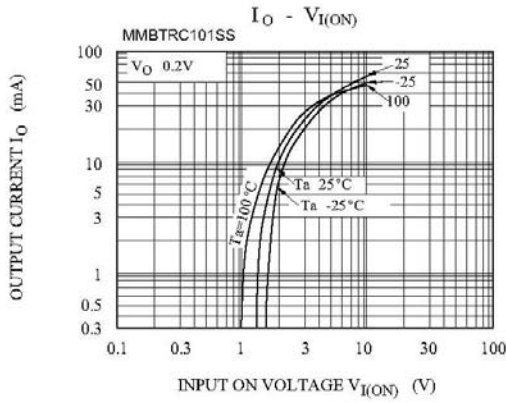


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Dated : 16/03/2015 Rev:02

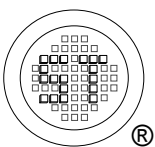
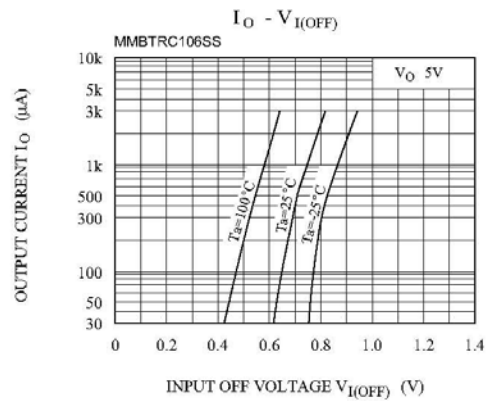
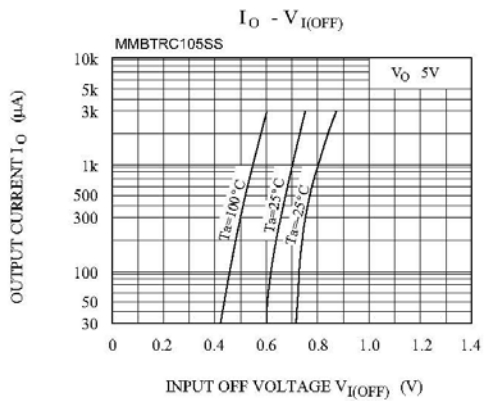
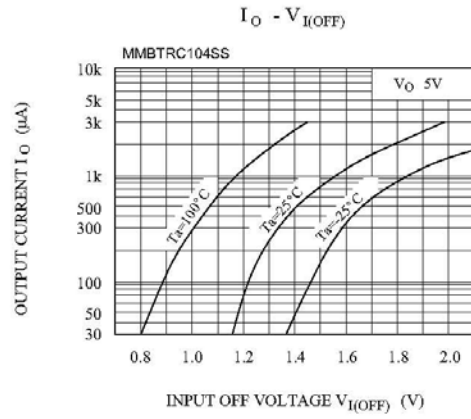
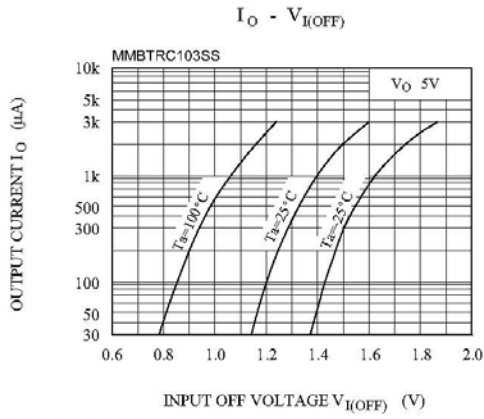
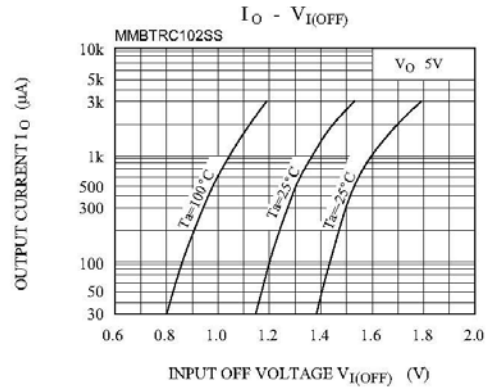
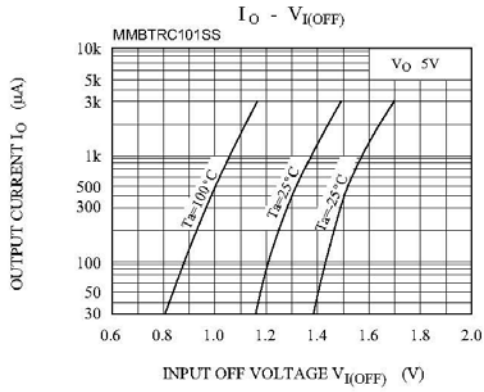
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ISO 9001:2008
Certificate No. 160713000

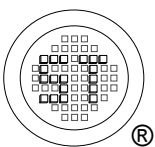
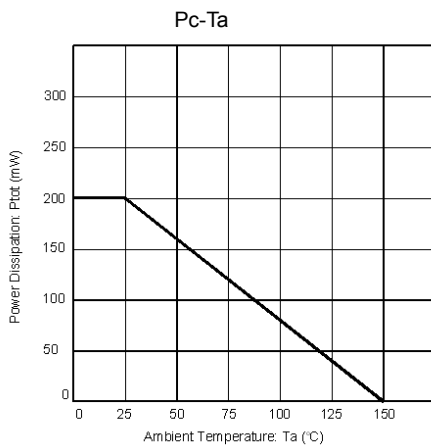
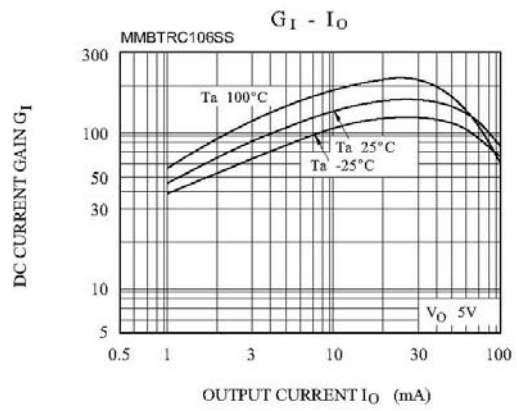
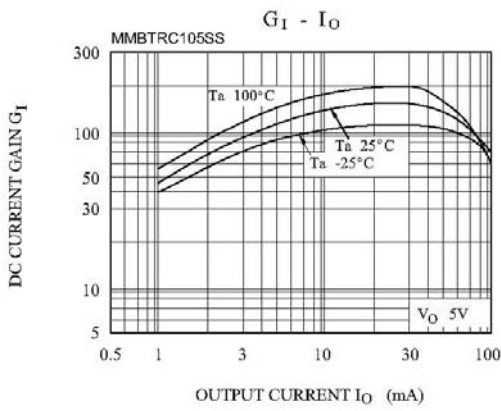
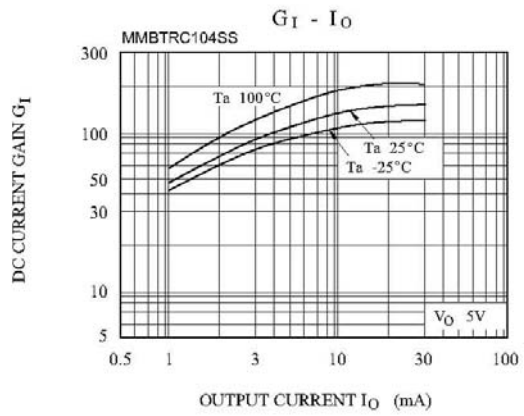
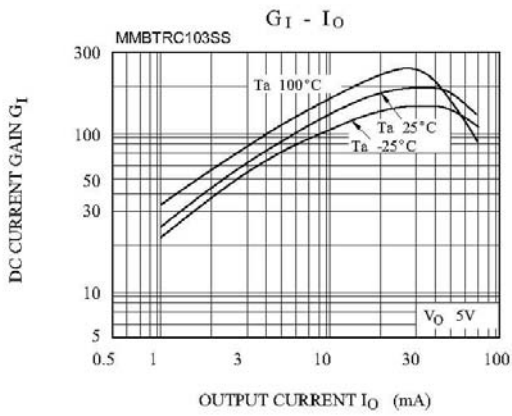
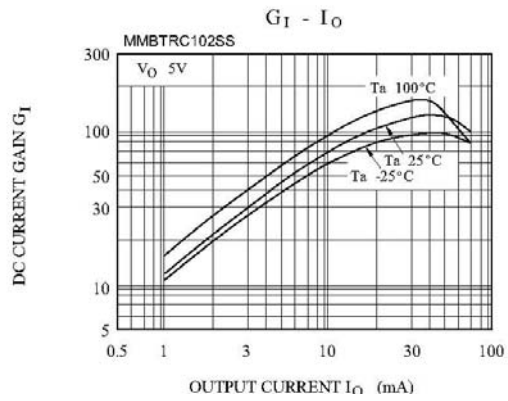
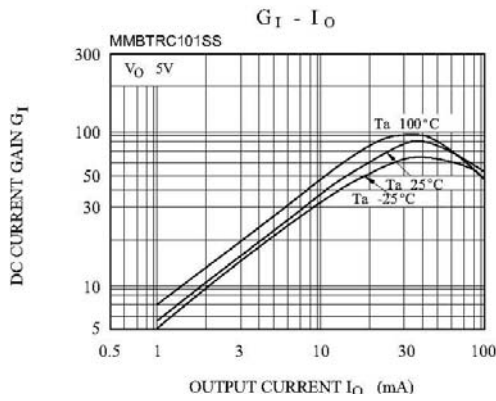
ISO 14001:2004
Certificate No. 7116

ISO 9001:2008
Certificate No. 6071940

BS-OHSAS 18001:2007
Certificate No. 7116

IECQ QC 080000
Certificate No. PRC-1876-148-1

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