

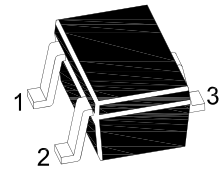
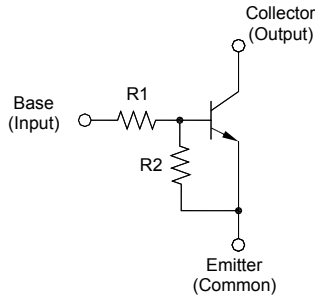
MMBTRC401E...MMBTRC406E

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



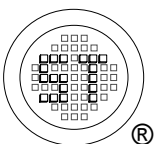
1.Base 2.Emmitter 3.Collector
SOT-523 Plastic Package

Resistor Values

Type	R1 (K Ω)	R2 (K Ω)
MMBTRC401E	4.7	4.7
MMBTRC402E	10	10
MMBTRC403E	22	22
MMBTRC404E	47	47
MMBTRC405E	2.2	47
MMBTRC406E	4.7	47

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

Parameter	Symbol	Value	Unit
Output Voltage	V_o	50	V
Input Voltage	V_i	MMBTRC401E	20, -10
		MMBTRC402E	30, -10
		MMBTRC403E	40, -10
		MMBTRC404E	40, -10
		MMBTRC405E	12, -5
		MMBTRC406E	20, -5
Output Current	I_o	100	mA
Total Power Dissipation	P_{tot}	100	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$



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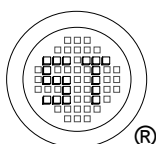


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Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_O = 5\text{ V}$, $I_O = 10\text{ mA}$	MMBTRC401E MMBTRC402E MMBTRC403E MMBTRC404E MMBTRC405E MMBTRC406E	30 50 70 80 80 80	- - - - - -	- - - - - -	- - - - - -
Output Cutoff Current at $V_O = 50\text{ V}$		$I_{O(OFF)}$	-	-	500 nA
Input Current at $V_I = 5\text{ V}$	MMBTRC401E MMBTRC402E MMBTRC403E MMBTRC404E MMBTRC405E MMBTRC406E	I_I	- - - - - -	- - - - - -	1.8 0.88 0.36 0.18 3.6 1.8 mA
Output Voltage at $I_O = 10\text{ mA}$, $I_I = 0.5\text{ mA}$		$V_{O(ON)}$	-	-	0.3 V
Input Voltage (ON) at $V_O = 0.2\text{ V}$, $I_O = 5\text{ mA}$	MMBTRC401E MMBTRC402E MMBTRC403E MMBTRC404E MMBTRC405E MMBTRC406E	$V_{I(ON)}$	- - - - - -	- - - - - -	2 2.4 3 5 1.1 1.3 V
Input Voltage (OFF) at $V_O = 5\text{ V}$, $I_O = 0.1\text{ mA}$	MMBTRC401E~404E MMBTRC405E~406E	$V_{I(OFF)}$	1 0.5	- -	- - V
Transition Frequency at $V_O = 10\text{ V}$, $I_O = 5\text{ mA}$		$f_T^{1)}$	-	200	- MHz

¹⁾ Characteristic of transistor only.

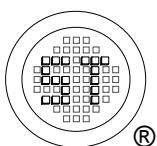
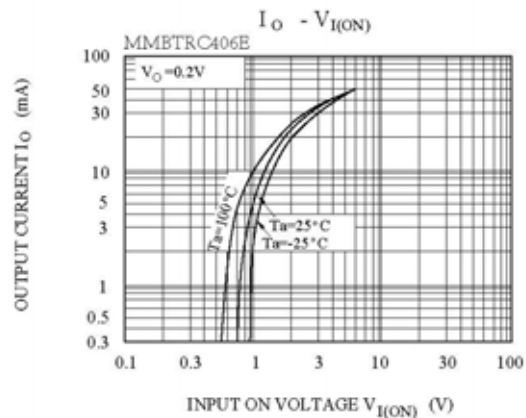
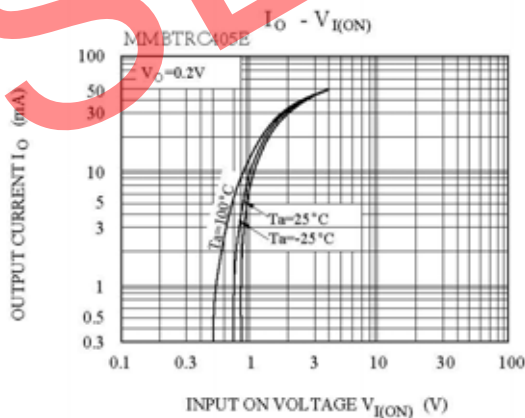
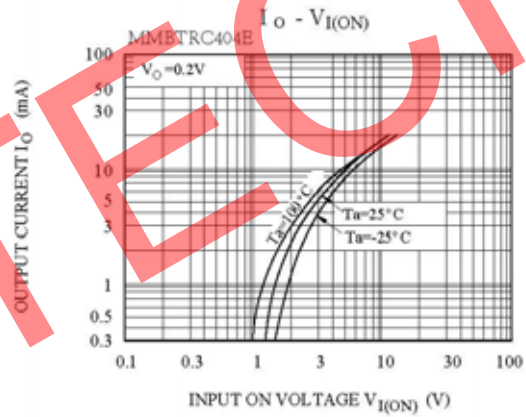
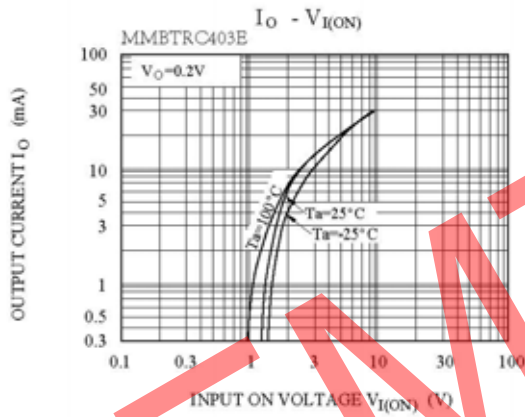
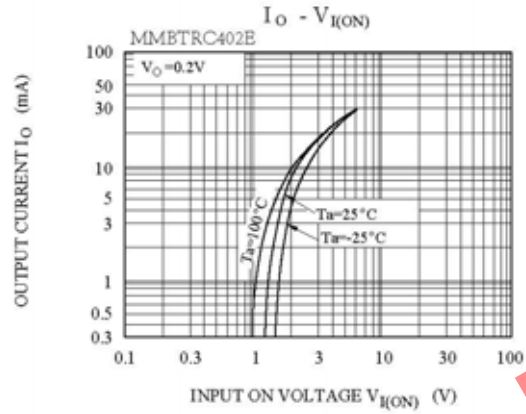
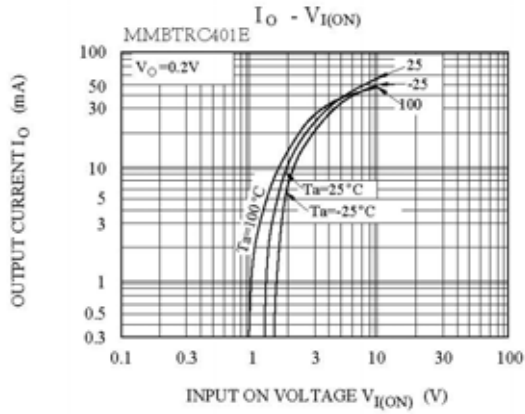


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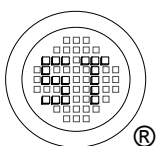
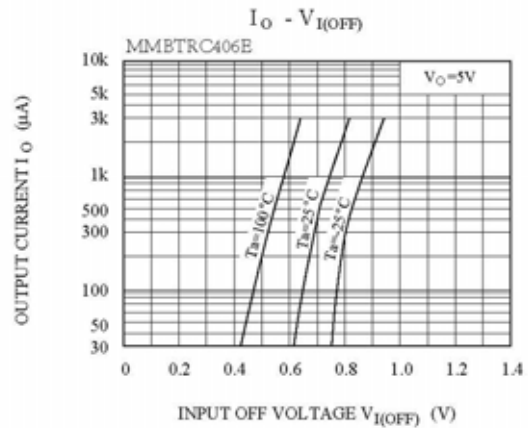
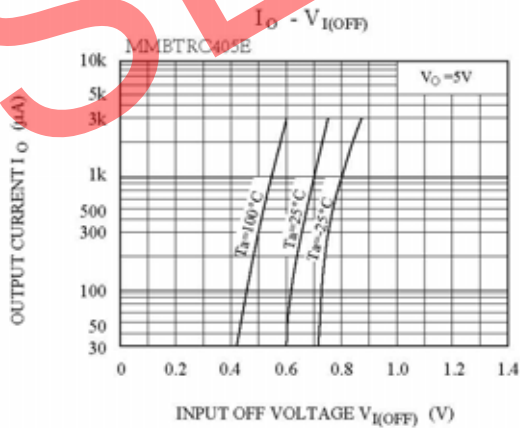
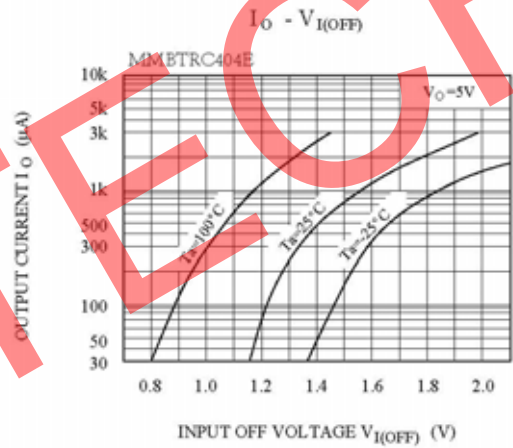
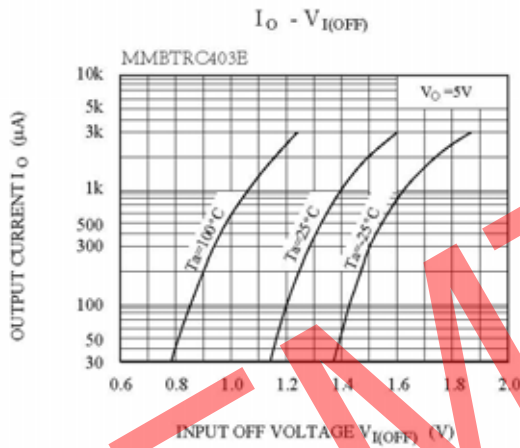
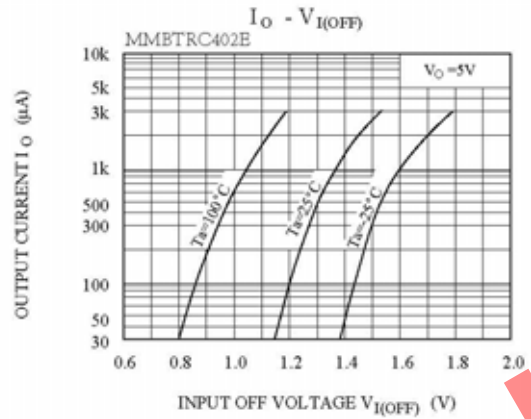
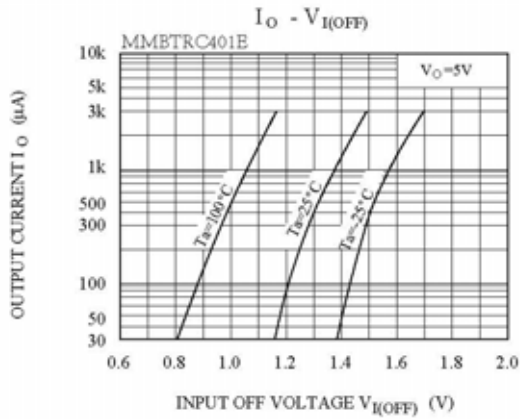
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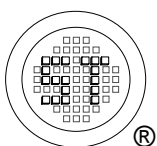
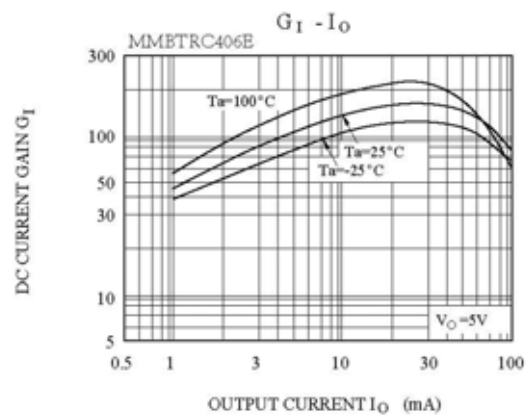
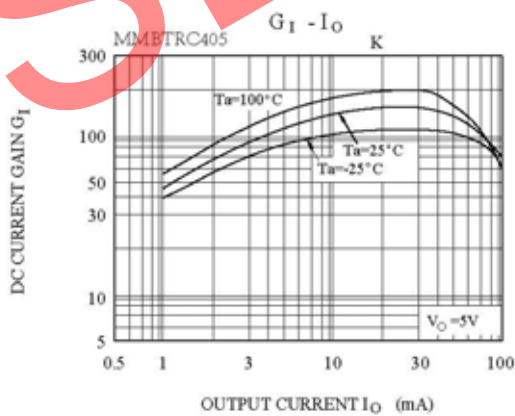
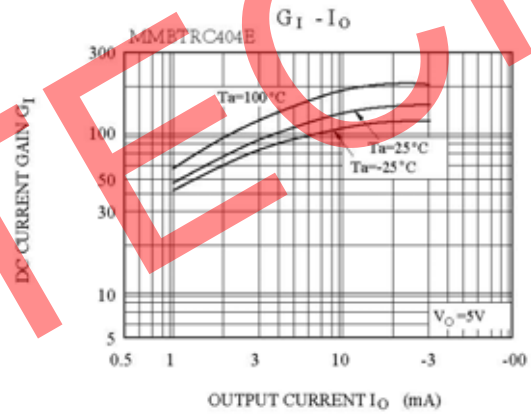
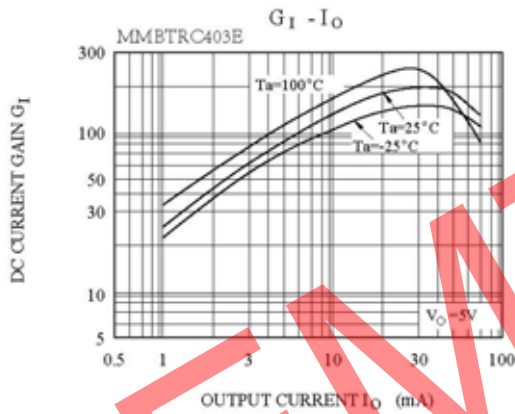
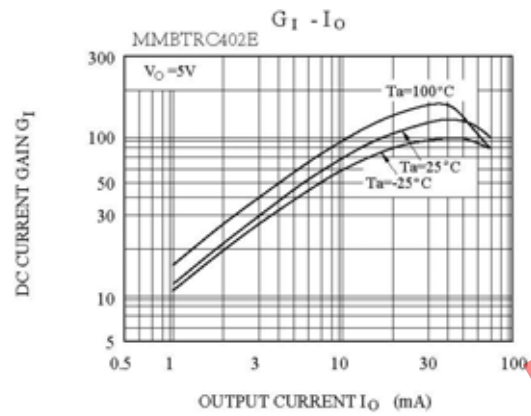
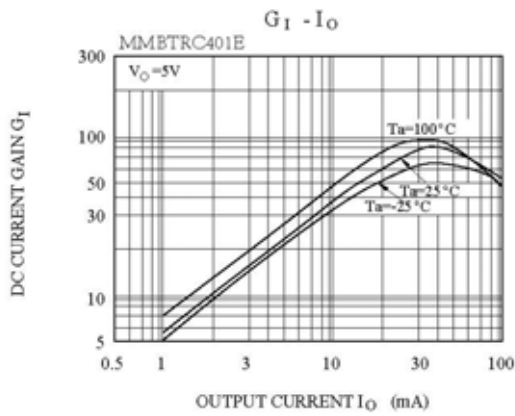
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