

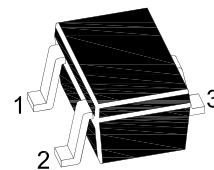
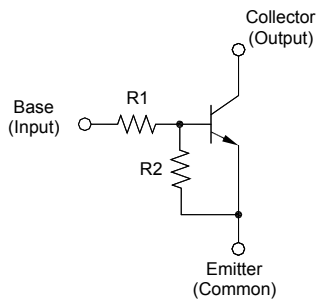
MMBTRC401E...MMBTRC406E

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



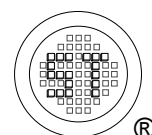
1.Base 2.Emitter 3.Collector
SOT-523 Plastic Package

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
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 °C)

Parameter		Symbol	Value	Unit
Output Voltage		V _O	50	V
Input Voltage	MMBTRC401E	V _I	20, -10	V
	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	°C
Storage Temperature Range		T _{stg}	- 55 to + 150	°C

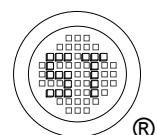


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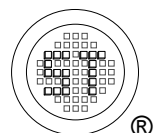
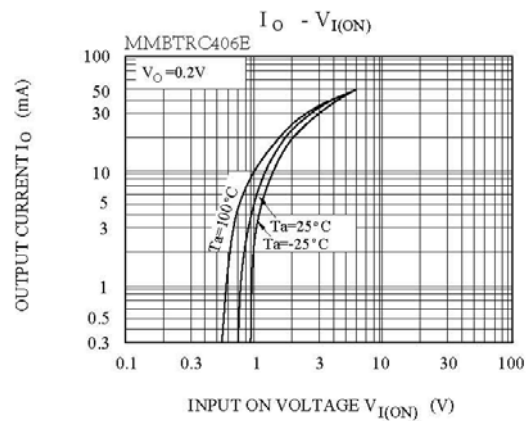
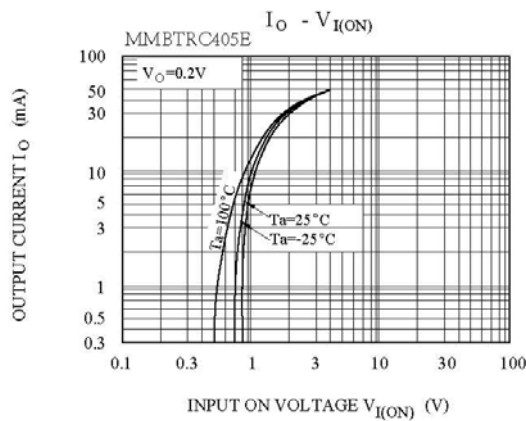
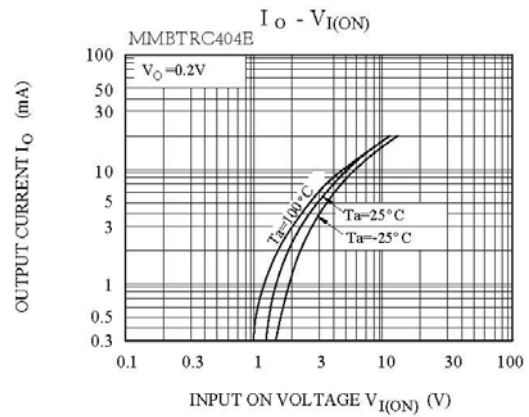
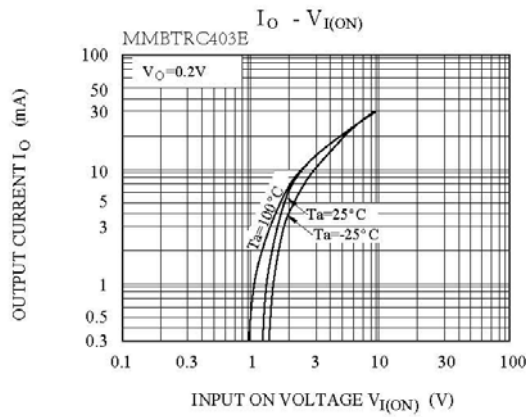
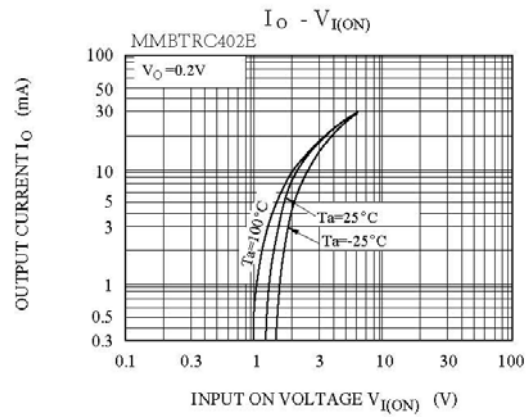
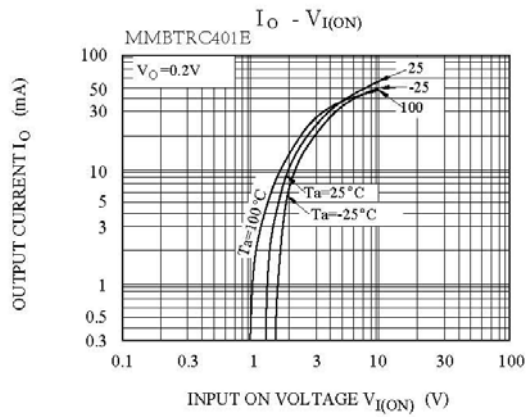
Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$

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

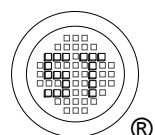
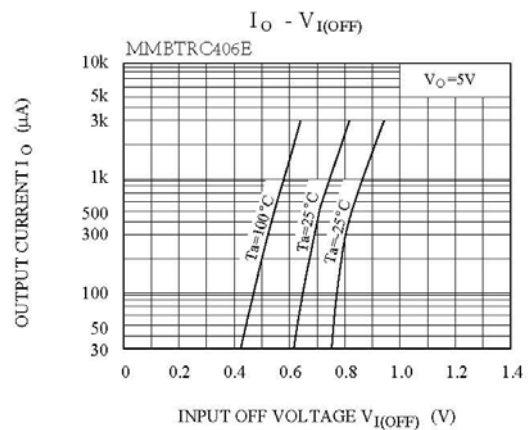
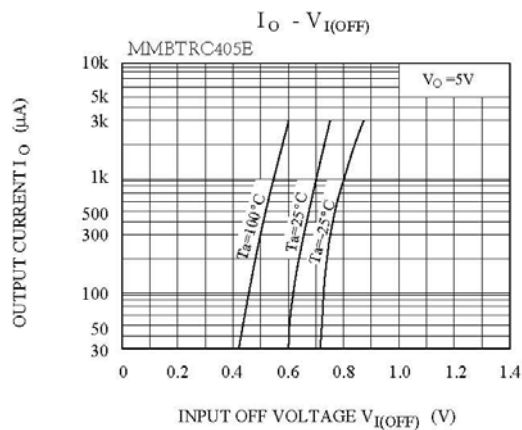
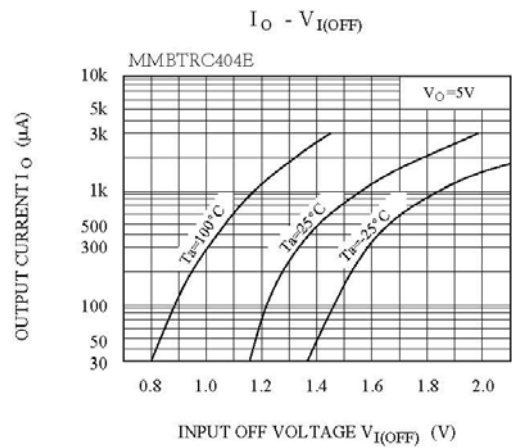
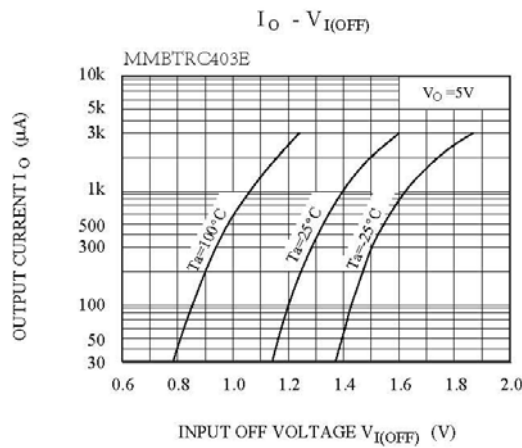
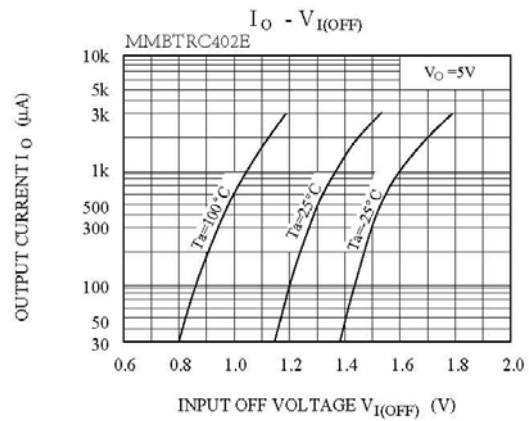
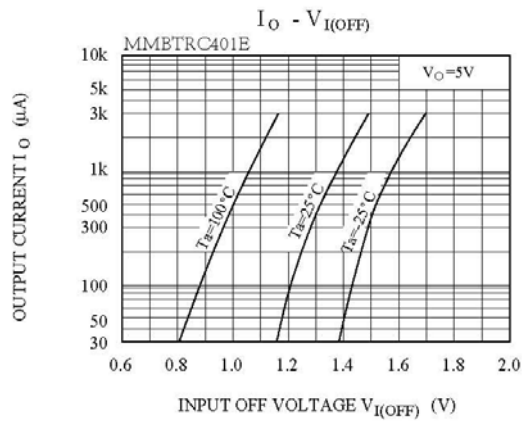
¹⁾ Characteristic of transistor only.



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