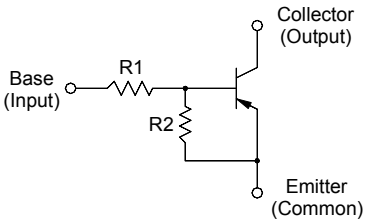
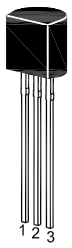
RA101S…RA106S

PNP Silicon Epitaxial Planar Transistor

for switching and interface circuit and drive circuit applications





1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
RA101S	4.7	4.7
RA102S	10	10
RA103S	22	22
RA104S	47	47
RA105S	2.2	47
RA106S	4.7	47

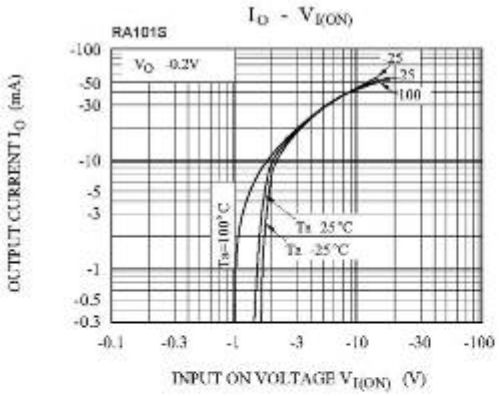
Absolute Maximum Ratings (T_a = 25 °C)

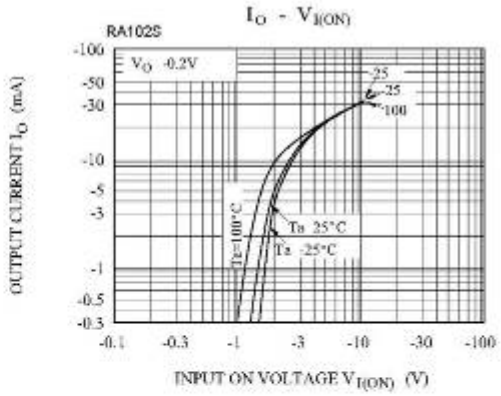
Parameter		Symbol	Value	Unit
Output Voltage		$-V_O$	50	V
Input Voltage	RA101S	$-V_I$	20, -10	V
	RA102S		30, -10	
	RA103S		40, -10	
	RA104S		40, -10	
	RA105S		12, -5	
	RA106S		20, -5	
Output Current		$-I_O$	100	mA
Total Power Dissipation		P_{tot}	200	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 55 to + 150	°C

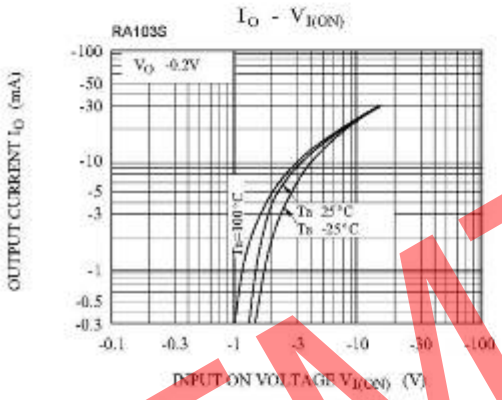
Characteristics at T_a = 25 °C

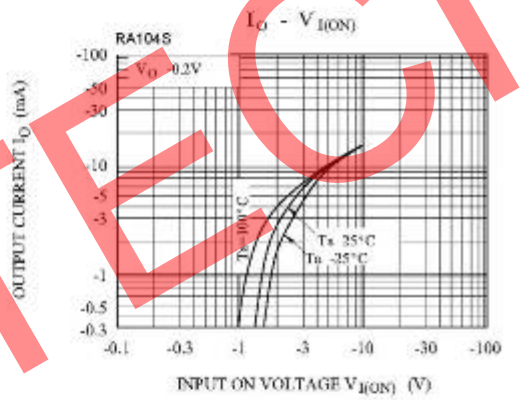
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_O$ = 5 V, $-I_O$ = 10 mA	RA101S	G_I	30	-	-	-
	RA102S		50	-	-	-
	RA103S		70	-	-	-
	RA104S		80	-	-	-
	RA105S		80	-	-	-
	RA106S		80	-	-	-
Output Cutoff Current at $-V_O$ = 50 V		$-I_{O(OFF)}$	-	-	500	nA
Input Current at $-V_I$ = 5 V	RA101S	$-I_I$	-	-	1.8	mA
	RA102S		-	-	0.88	
	RA103S		-	-	0.36	
	RA104S		-	-	0.18	
	RA105S		-	-	3.6	
	RA106S		-	-	1.8	
Output Voltage at $-I_O$ = 10 mA, $-I_I$ = 0.5 mA		$-V_{O(ON)}$	-	-	0.3	V
Input Voltage (ON) at $-V_O$ = 0.2 V, $-I_O$ = 5 mA	RA101S	$-V_{I(ON)}$	-	-	2	V
	RA102S		-	-	2.4	
	RA103S		-	-	3	
	RA104S		-	-	5	
	RA105S		-	-	1.1	
	RA106S		-	-	1.3	
Input Voltage (OFF) at $-V_O$ = 5 V, $-I_O$ = 0.1 mA	RA101S~104S	$-V_{I(OFF)}$	1	-	-	V
	RA105S~106S		0.5	-	-	
Transition Frequency at $-V_O$ = 10 V, $-I_O$ = 5 mA		f_T [1)]	-	200	-	MHz

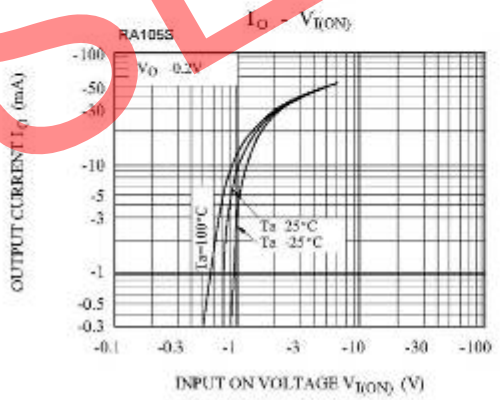
[1)] Characteristic of transistor only.


RA101S
I_O - $V_{I(ON)}$
V_O -0.2V
25
25
100
Ta=100°C
Ta 25°C
Ta -25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


RA102S
I_O - $V_{I(ON)}$
V_O -0.2V
25
25
100
Ta=100°C
Ta 25°C
Ta -25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


RA103S
I_O - $V_{I(ON)}$
V_O -0.2V
Ta=100°C
Ta 25°C
Ta -25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


RA104S
I_O - $V_{I(ON)}$
V_O -0.2V
Ta=100°C
Ta 25°C
Ta -25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)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I_O - $V_{I(ON)}$
V_O -0.2V
Ta=100°C
Ta 25°C
Ta -25°C
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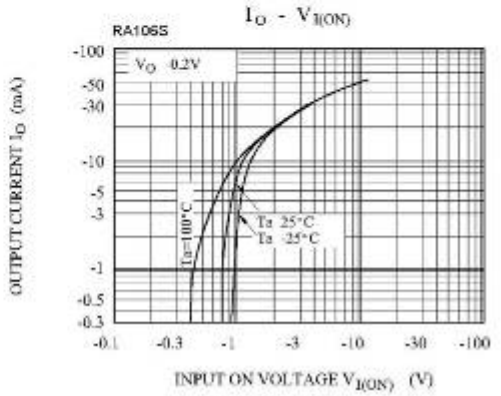
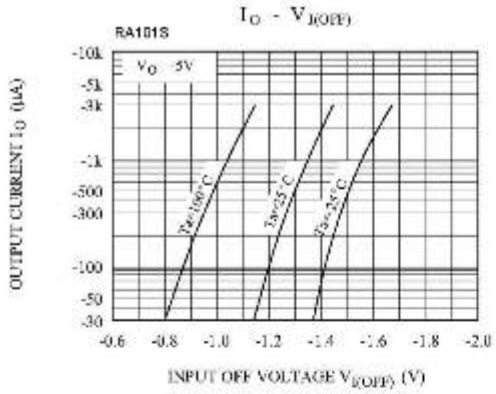
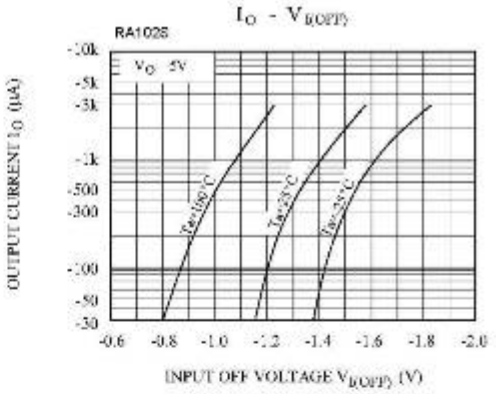

RA106S
I_O - $V_{I(ON)}$
V_O -0.2V
Ta=100°C
Ta 25°C
Ta -25°C
OUTPUT CURRENT I_O (mA)
INPUT ON VOLTAGE $V_{I(ON)}$ (V)


I_O - $V_{I(OFF)}$
RA101S
V_O -5V
Ta=100°C
Ta=25°C
Ta=-25°C
OUTPUT CURRENT I_O (μA)
INPUT OFF VOLTAGE $V_{I(OFF)}$ (V)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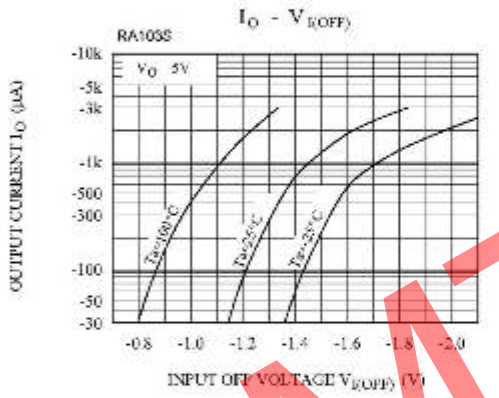
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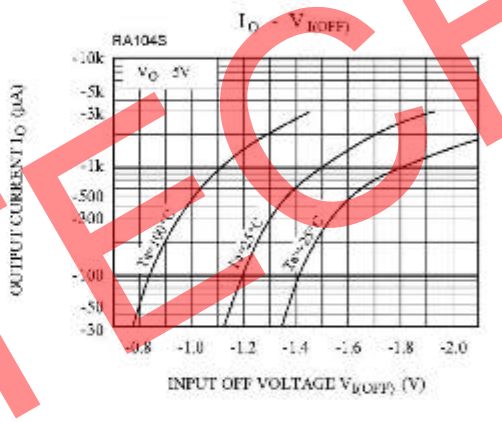
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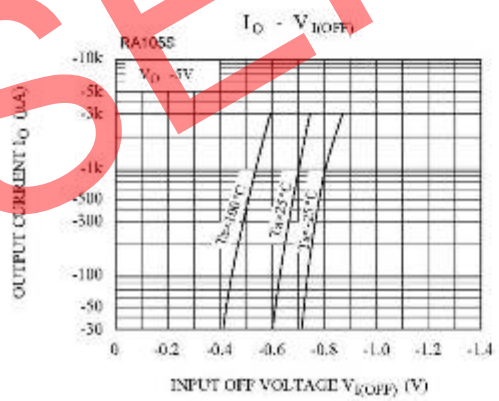
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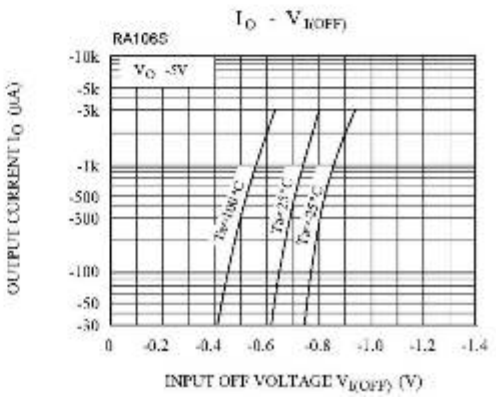
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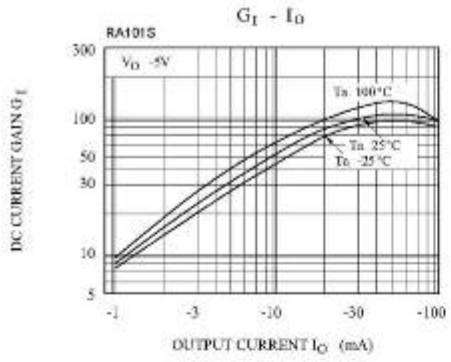

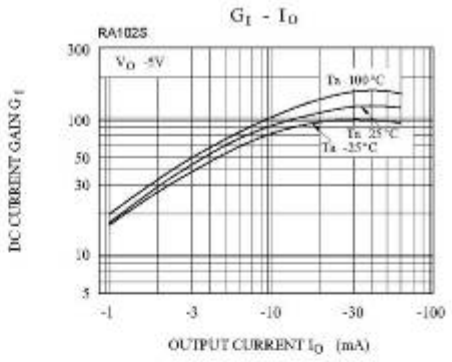

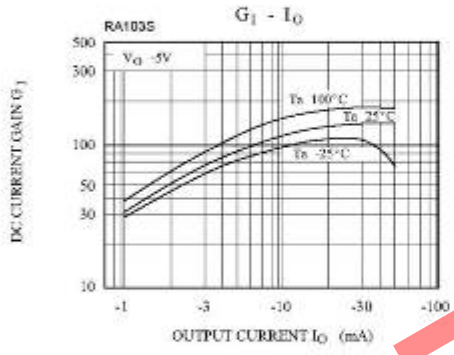

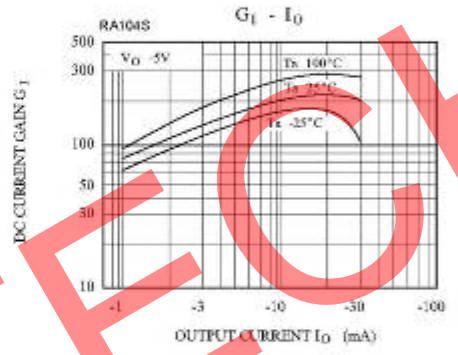

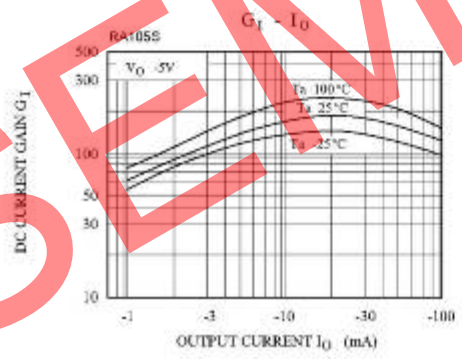

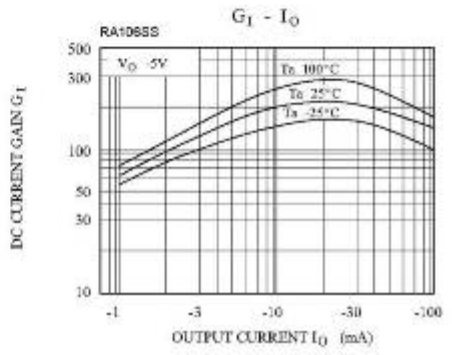

P_C-T_A