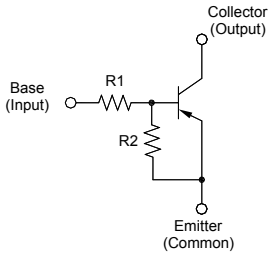
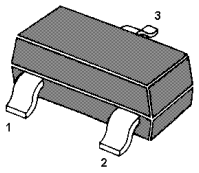
MMDTB431

PNP Silicon Epitaxial Planar Transistor

for switching and interface circuit and drive circuit applications





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

Features

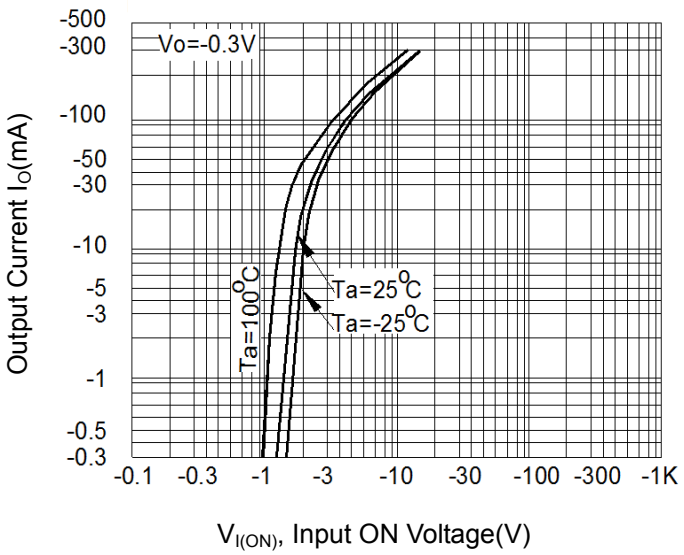
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

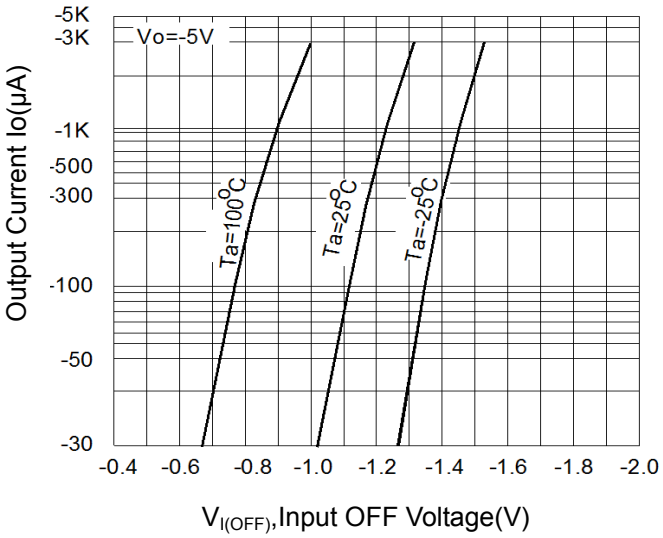
Absolute Maximum Ratings (T_a = 25 °C)

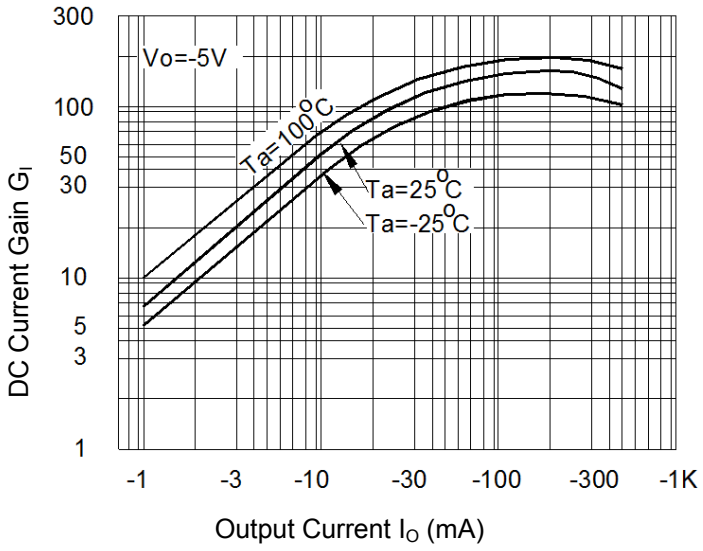
Parameter	Symbol	Value	Unit
Output Voltage	$-V_O$	50	V
Input Voltage	$-V_I$	- 10 to + 30	V
Output Current	$-I_O$	500	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 5 V, $-I_C$ = 50 mA	G_I	47	-	-	-
Output Cutoff Current at $-V_O$ = 50 V	$-I_{O(OFF)}$	-	-	0.5	µA
Input Current at $-V_I$ = 5 V	$-I_I$	-	-	1.8	mA
Output Voltage at $-I_O$ = 50 mA,$-I_I$ = 2.5 mA	$-V_{O(ON)}$	-	-	0.3	V
Input Voltage (on) at $-V_O$ = 0.3 V, $-I_O$ = 20 mA	$-V_{I(on)}$	-	-	3	V
Input Voltage (off) at $-V_O$ = 5 V, $-I_O$ = 100 µA	$-V_{I(off)}$	0.5	-	-	V
Transition Frequency at $-V_O$ = 10 V, $-I_O$ = 5 mA, f = 100 MHz	f_T	-	200	-	MHz
Input Resistance	R_1	3.29	4.7	6.11	KΩ
Resistance Ratio	R_2 / R_1	0.8	1	1.2	-

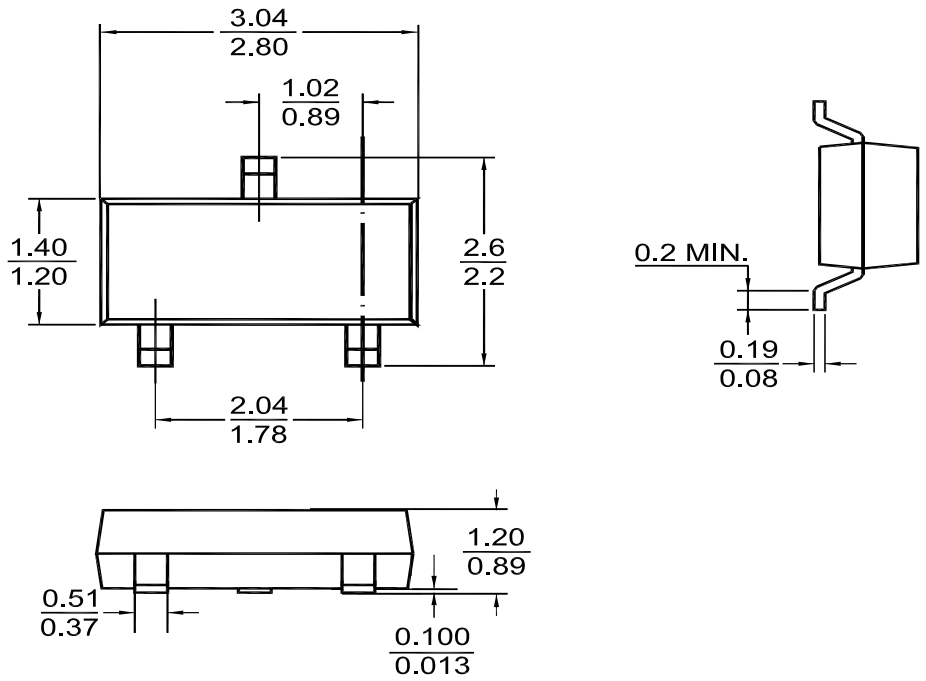

Vo=-0.3V
Output Current I_O(mA)
-500
-300
-100
-50
-30
-10
-5
-3
-1
-0.5
-0.3
-0.1
-0.3
-1
-3
-10
-30
-100
-300
-1K
Ta=100°C
Ta=25°C
Ta=-25°C
$V_{I(ON)}$, Input ON Voltage(V)


Vo=-5V
Output Current Io(μA)
-5K
-3K
-1K
-500
-300
-100
-50
-30
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6
-1.8
-2.0
Ta=100°C
Ta=25°C
Ta=-25°C
$V_{I(OFF)}$,Input OFF Voltage(V)

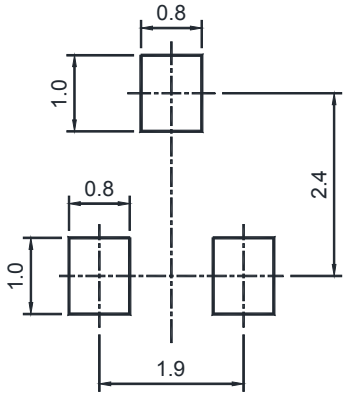

Vo=-5V
DC Current Gain G_I
300
100
50
30
10
5
3
1
-1
-3
-10
-30
-100
-300
-1K
Ta=100°C
Ta=25°C
Ta=-25°C
Output Current I_O (mA)

PACKAGE OUTLINE

Plastic surface mounted package (Dimensions in mm) TO-236



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-236	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000