

# AN6721

## IGBT Drive IC

### ■ Overview

The AN6721 is an IC with driver which drives the IGBT of large power element and various protective functions. It is suitable for drive of IH jar rice cooker or electromagnetic cooker.

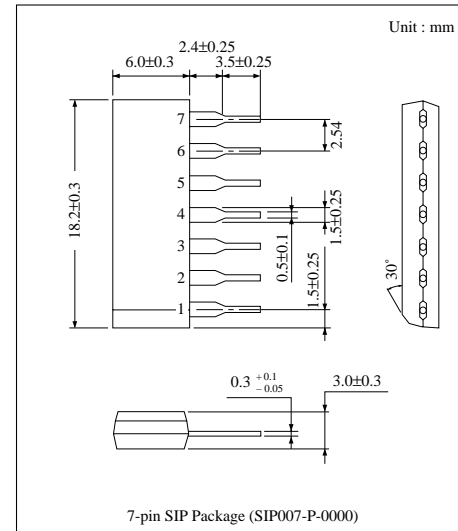
### ■ Features

- Turning-on and -off driving capabilities of power element able to be set separately
- Shunt regulator circuit built-in
- Low  $V_{CC}$  protection function built-in
- Power-on protective function built-in.

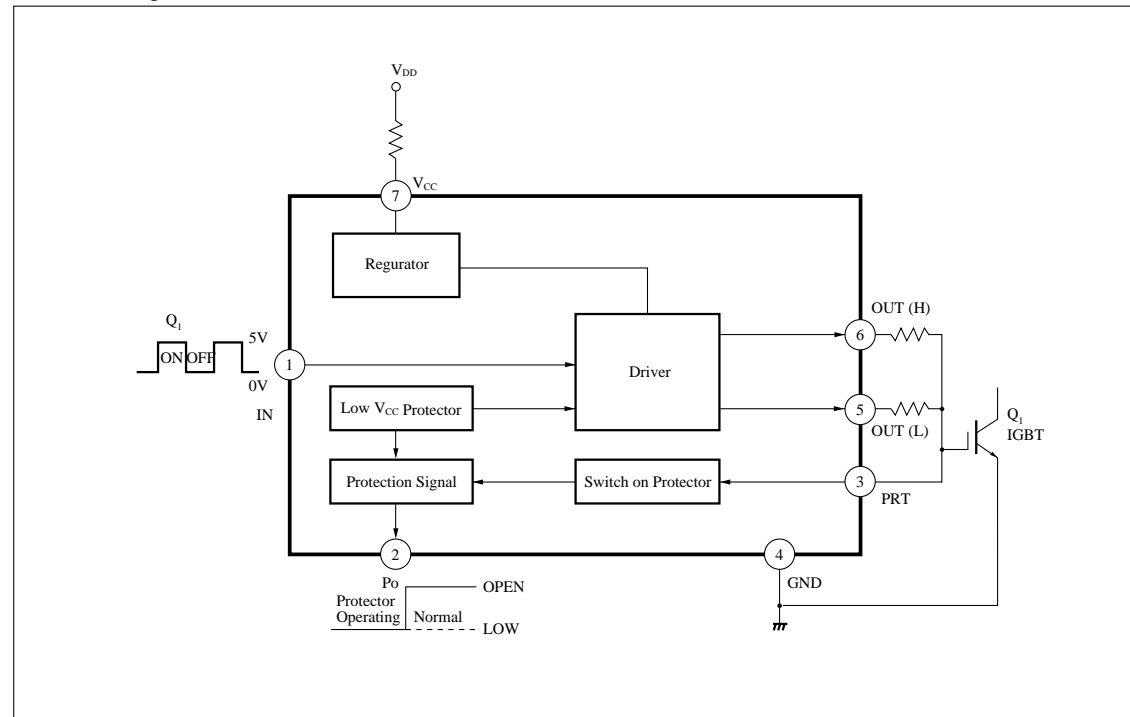
At power-on, the output is fixed to "Low" until the  $V_{CC}$  rises to protect the power element from mis-conduction.

- Protective operation signal output

It transmits the signal to the control side when any of the above protective functions are activated.



### ■ Block Diagram



## ■ Pin Name

Pin No.	Pin name
1	Input terminal (IN)
2	Protection operation signal output terminal (Po)
3	Power-on protection terminal (PRT)
4	GND
5	Output (L) terminal (OUT (L))
6	Output (H) terminal (OUT (H))
7	V <sub>CC</sub>

## ■ Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage <sup>Note 1)</sup>	V <sub>CC</sub>	—	V
Supply current <sup>Note 2)</sup>	I <sub>CC</sub>	21	mA
Power dissipation <sup>Note 2)</sup>	P <sub>D</sub>	525	mW
Operating ambient temperature	T <sub>opr</sub>	-20 to 85	°C
Storage temperature	T <sub>stg</sub>	-55 to 150	°C

Note 1) The supply voltage value is limited by shunt regulator.

Note 2) Under Ta=85°C

## ■ Electrical Characteristics (Ta=25±2°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Supply current (1)	I <sub>CC1</sub>	V <sub>CC</sub> =20V	2.1	3.3	4.5	mA
Supply current (2)	I <sub>CC2</sub>	V <sub>CC</sub> =20V	7	8.5	10	mA
Regulator voltage (1)	V <sub>CC(R)1</sub>	I <sub>CC</sub> =6mA	21.3	22.7	24.1	V
Regulator voltage (2)	V <sub>CC(R)2</sub>	I <sub>CC</sub> =21mA	21.4	22.8	24.2	V
Low V <sub>CC</sub> protection threshold	V <sub>VL</sub>	V <sub>I</sub> =5V	9.5	9.9	10.3	V
Low V <sub>CC</sub> protection threshold difference	DV <sub>V</sub>	V <sub>I</sub> =5V	0.55	0.61	0.67	V
Low V <sub>CC</sub> protection lower limit	V <sub>CC(L)</sub>	V <sub>I</sub> =5V	—	—	2.5	V
Low V <sub>CC</sub> protection upper limit	V <sub>OL</sub>	I <sub>O</sub> =30mA	—	0.1	0.3	V
Power-On protection threshold	V <sub>P</sub>	V <sub>3</sub> =4V	6.5	7.1	7.7	V
Power-On protection voltage	V <sub>PRT</sub>	I <sub>PRT</sub> =30mA V <sub>CC</sub> =1V	—	0.8	0.93	V
Protection operation signal output	V <sub>PO</sub>	I <sub>PO</sub> =0.5mA V <sub>CC</sub> =1V	—	0.8	0.93	V
Output voltage (H)	V <sub>OH</sub>	I <sub>O</sub> =-5mA	20.5	22	23.5	V
Output voltage (L)	V <sub>OL1</sub>	I <sub>O</sub> =100mA	—	0.4	0.7	V
Output voltage (L)	V <sub>OL2</sub>	I <sub>O</sub> =30mA	—	0.1	0.3	V
Input voltage threshold	V <sub>IL</sub>	V <sub>CC</sub> =38V	1.75	2.05	2.35	V
Input voltage threshold difference	DV <sub>I</sub>	V <sub>CC</sub> =38V	0.35	0.45	0.55	V
Sink current peak value	I <sub>f</sub>	R <sub>O</sub> =10Ω C <sub>O</sub> =18000pF	1.05	1.3	—	A
Source current peak value	I <sub>r</sub>	R <sub>O</sub> =10Ω C <sub>O</sub> =6800pF	0.45	0.6	—	A
Fall time lag	t <sub>df</sub>	R <sub>H</sub> =4.3kΩ R <sub>L</sub> =200Ω	0.05	0.25	0.45	μS
Rise time lag	t <sub>dr</sub>	R <sub>H</sub> =4.3kΩ R <sub>L</sub> =200Ω	0.3	0.5	0.7	μS