AN6721

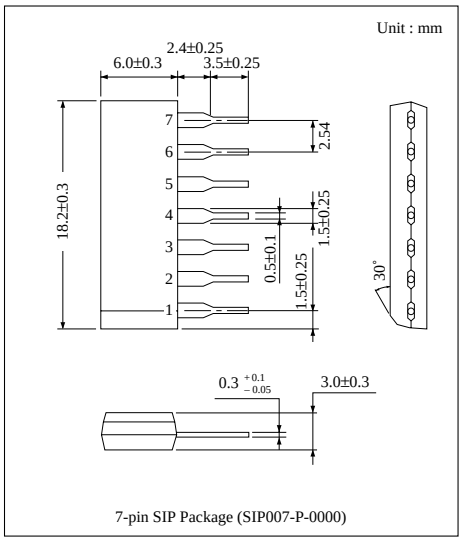
IGBT Drive IC

■ Overview

The AN6721is 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.

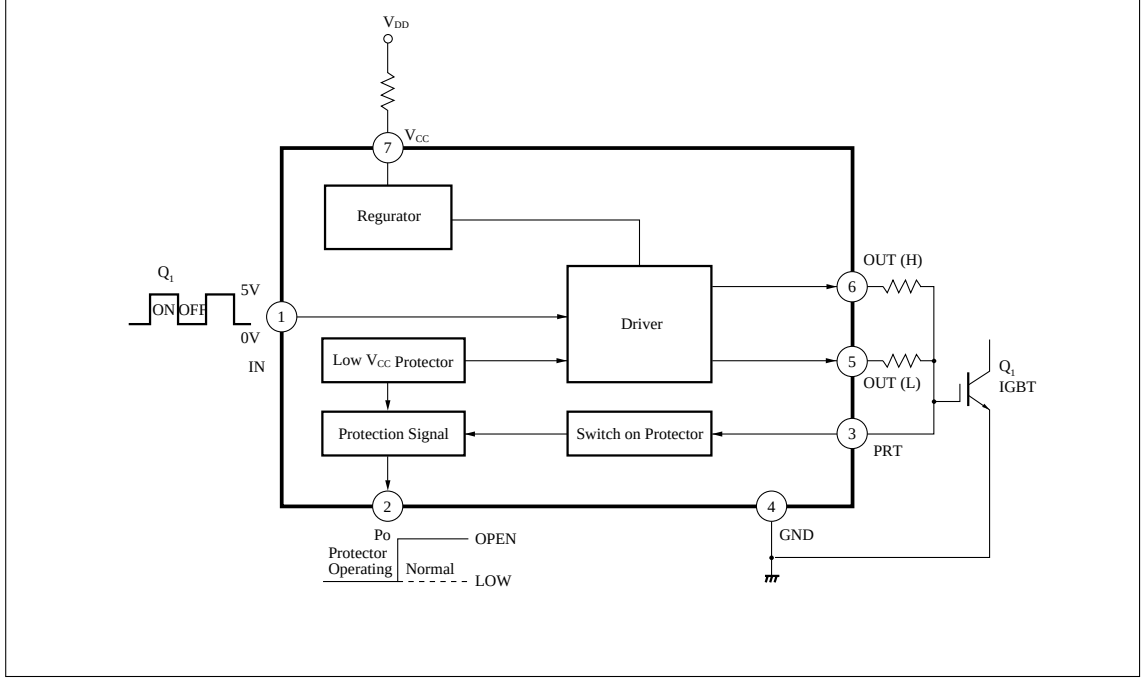
■ Features

- 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.



7-pin SIP Package (SIP007-P-0000)

■ Block Diagram



■ Pin Name

Pin No.	Pin name
1	Input terminal (IN)
2	Protection operation signal output terminal (P_O)
3	Power-on protection terminal (PRT)
4	GND
5	Output (L) terminal (OUT (L))
6	Output (H) terminal (OUT (H))
7	V_{CC}

■ Absolute Maximum Rating (Ta=25˚C)

Parameter	Symbol	Rating	Unit
Supply voltage Note 1)	V_{CC}	—	V
Supply current Note 2)	I_{CC}	21	mA
Power dissipation Note 2)	P_D	525	mW
Operating ambient temperature	T_{opr}	–20 to 85	˚C
Storage temperature	T_{stg}	–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_{CC1}	V_{CC}=20V	2.1	3.3	4.5	mA
Supply current (2)	I_{CC2}	V_{CC}=20V	7	8.5	10	mA
Regulator voltage (1)	$V_{CC\,(R)\,1}$	I_{CC}=6mA	21.3	22.7	24.1	V
Regulator voltage (2)	$V_{CC\,(R)\,2}$	I_{CC}=21mA	21.4	22.8	24.2	V
Low V_{CC} protection threshold	V_{VL}	V_1=5V	9.5	9.9	10.3	V
Low V_{CC} protection threshold difference	DV_V	V_1=5V	0.55	0.61	0.67	V
Low V_{CC} protection lower limit	$V_{CC\,(L)}$	V_1=5V	—	—	2.5	V
Low V_{CC} protection upper limit	V_{OL}	I_O=30mA	—	0.1	0.3	V
Power-On protection threshold	V_P	V_3=4V	6.5	7.1	7.7	V
Power-On protection voltage	V_{PRT}	I_{PRT}=30mA V_{CC}=1V	—	0.8	0.93	V
Protection operation signal output	V_{PO}	I_{PO}=0.5mA V_{CC}=1V	—	0.8	0.93	V
Output voltage (H)	V_{OH}	I_O=–5mA	20.5	22	23.5	V
Output voltage (L)	V_{OL1}	I_O=100mA	—	0.4	0.7	V
Output voltage (L)	V_{OL2}	I_O=30mA	—	0.1	0.3	V
Input voltage threshold	V_{IL}	V_{CC}=38V	1.75	2.05	2.35	V
Input voltage threshold difference	DV_I	V_{CC}=38V	0.35	0.45	0.55	V
Sink current peak value	I_f	R_O=10Ω C_O=18000pF	1.05	1.3	—	A
Source current peak value	I_r	R_O=10Ω C_O=6800pF	0.45	0.6	—	A
Fall time lag	t_{df}	R_H=4.3kΩ R_L=200Ω	0.05	0.25	0.45	µS
Rise time lag	t_{dr}	R_H=4.3kΩ R_L=200Ω	0.3	0.5	0.7	µS