Panasonic

DN8690

4-circuit Darlington Driver Array (High Breakdown Voltage : 60V, Large Drive Current : 1.5A)

■ Overview

The DN8690 is a 4-circuit non-inverting type driver array composed of PNP transistors and 1.5A NPN Darlington transistors.

■ Features

- 4 circuits
- High breakdown voltage : $V_{CE(SUS)}$ = 60V (min)
- Large output current : I_O = 1.5A (max)
- Built-in output clamp diode : V_R = 60V(min)
  I_F = 1.5A(max)
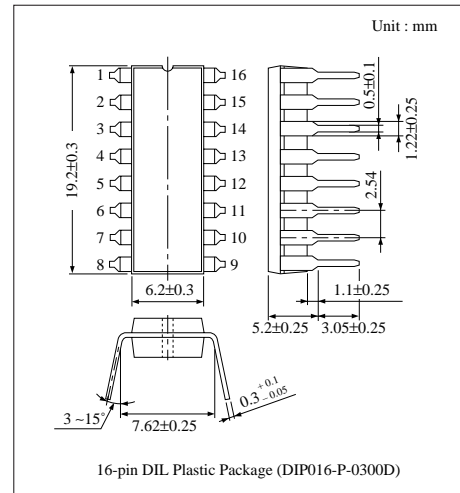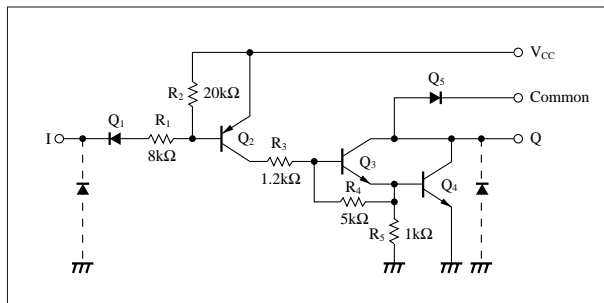- Low active input
- Directly connectable to the 5V TTL/CMOS

■ Applications

- Driving of the printer motors, etc.
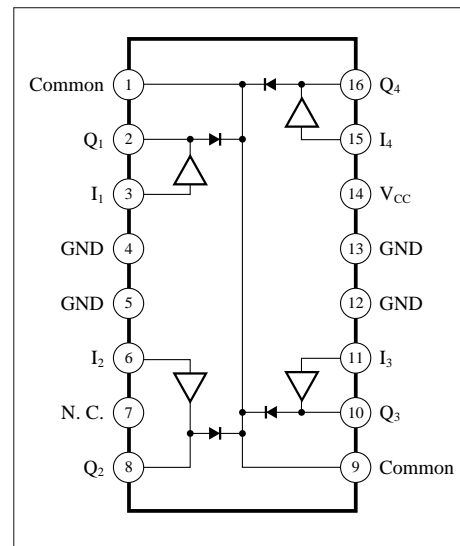- Driving of the LEDs, lamps, and various relays

Unit : mm

16-pin DIL Plastic Package (DIP016-P-0300D)

■ Block Diagram

■ Function Table

Input (I_n)	Output (Q_n)
L	L
H	H
OPEN	H

■ Schematic Circuit (1 Circuit)

■ Pin Descriptions

Symbol	Pin name
Common	Clamp diode pin
Q_1 to Q_4	Output pin
I_1 to I_4	Input pin
GND	Ground pin
V_{CC}	Power pin
NC	No connection

■ Absolute Maximum Ratings (Ta =25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	7.0	V
Output breakdown	$V_{CE\,(sus)}$	60	V
Output current	I_O	1.5	A
Input voltage	V_I	0 to 30	V
Clamp diode breakdown	V_R	60	V
Clamp diode forward current	I_F	1.5	A
Power dissipation	P_D	2.0	W
Operating ambient temperature	T_{opr}	– 20 to + 75	°C
Storage temperature	T_{stg}	– 55 to + 150	°C

■ Electrical Characteristics (V_{CC}= 5V, Ta= 25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Input voltage	V_{IH}	V_{CC} = 3.5 to 7V	V_{CC} – 0.3	——	30	V
	V_{IL}	V_{CC} = 3.5 to 7V	0	——	V_{CC} – 2.6	V
Output saturation voltage	$V_{CE\,(sat)}$ 1	V_I = 0V, I_O = 0.5A	——	——	1.2	V
	$V_{CE\,(sat)}$ 2	V_I = 0V, I_O = 1A	——	——	1.5	V
	$V_{CE\,(sat)}$ 3	V_I = 0V, I_O = 1.5A	——	——	2.0	V
Input current	I_I	V_{CC} = 7V, V_I = 0V	——	——	1.0	mA
Output breakdown	$V_{CE\,(sus)}$	I_O = 100μA	60	——	——	V
Supply current	I_{CCH}	V_{CC} = 7V, Total V_I = 7V	——	——	50	μA
	I_{CCL}	V_{CC} = 7V, V_I = 0V (1 circuit)	——	——	8.0	mA
Clamp diode forward voltage	V_F	I_F = 1.5A	——	——	3.0	V
Clamp diode reverse current	I_R	V_R = 60V, V_O = 0V	——	——	30	μA
Propagation delay time	t_{PHL}	V_M = 60V, R_I = 50Ω	——	0.2	——	μs
	t_{PLH}	V_{CC} = 5V, C_I = 15pF	——	5.0	——	μs

Panasonic