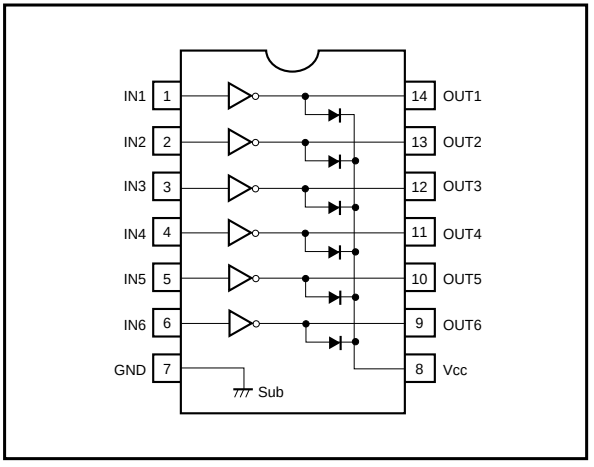
6-channel high current driver
BA664

The BA664 is an IC with a built-in clamp diode, developed for the purpose of minimizing attachments, and contains a Darlington transistor array of six circuits with input resistance. Input and output are directed in the same direction by DIP Pin 14, with the layout optimized to facilitate mounting.

●Applications
Hammer solenoid drivers
Relay drivers
LED drivers
Small motor drivers
Lamp drivers

●Features
1) 6-circuit Darlington transistor array
2) Current of 100mA (Max.) can be driven.
3) Input and output are directed in the same direction, for easy mounting.
4) Can be coupled with MOS ICs.
5) High current transfer ratio.
6) High voltage withstanding values of 38V for input and 27V for output.
7) Clamp diode for inductive load drive built in.

●Block diagram



●Internal circuit configuration

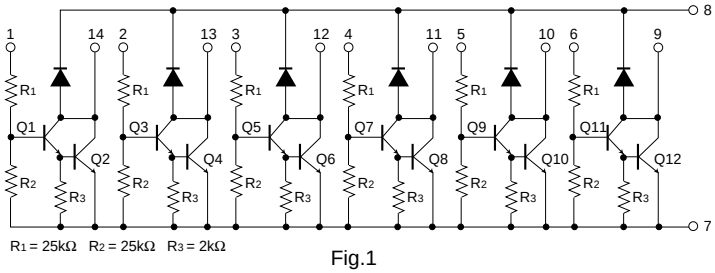


Fig.1

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{CC}	27	V
Collector current	I_C	100	mA
Input pin withstanding voltage (+)	V+	38	V
Input pin withstanding voltage (–)	V–	– 0.5	V
Power dissipation	Pd	550*	mW
Operating temperature	Topr	– 25 ~ + 75	°C
Storage temperature	Tstg	– 55 ~ + 125	°C

* Reduced by 5.5mW for each increase in Ta of 1°C over 25°C.

● Electrical characteristics (unless otherwise noted, Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement circuit
Usage voltage range (output)	V_{CC}	—	—	20	V	—	—
Output leakage current	I_L	—	—	100	μA	V_C = 20V, V_{IN} = 0V	Fig.5
Collector saturation voltage	$V_{CE\ (sat)}$	—	1.4	2.2	V	I_{OUT} = 75mA, V_{IN} = 17V	Fig.8
Input current	I_{IN}	—	0.6	1.4	mA	V_{IN} = 35V, I_{OUT} = 0mA	Fig.6
Diode leakage current	I_D	—	—	100	μA	V_R = 20V	Fig.7
Diode forward voltage	V_F	—	1.2	—	V	I_F = 75mA	Fig.9

●Electrical characteristic curves

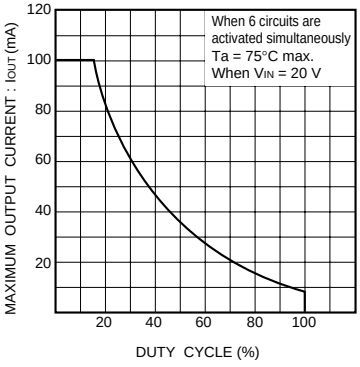


Fig.2 Output current vs. duty cycle

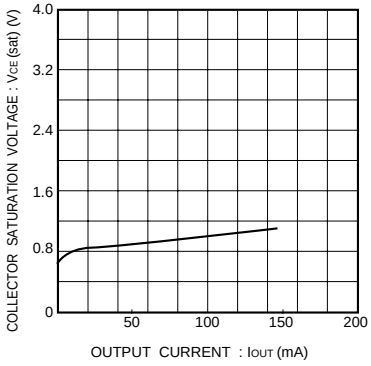


Fig.3 Output characteristics

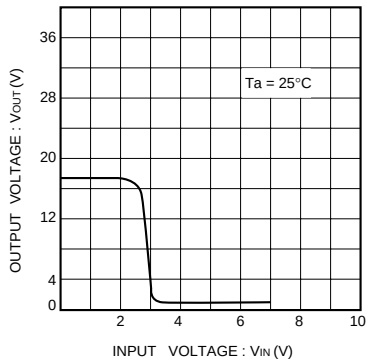


Fig.4 I / O characteristics

●Measurement circuits

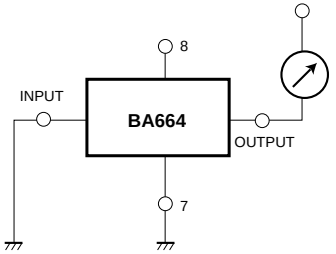


Fig.5

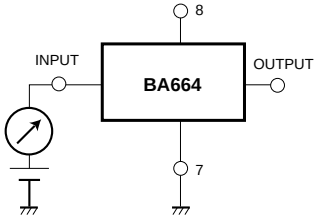


Fig.6

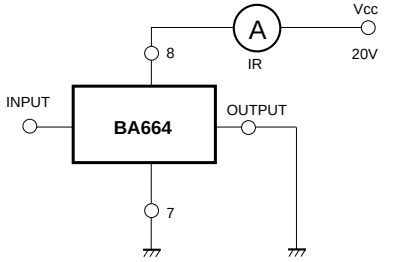


Fig.7

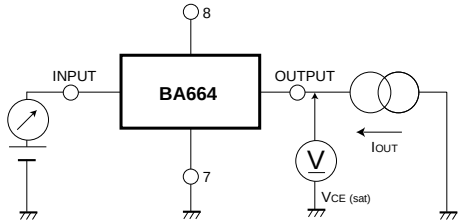


Fig.8

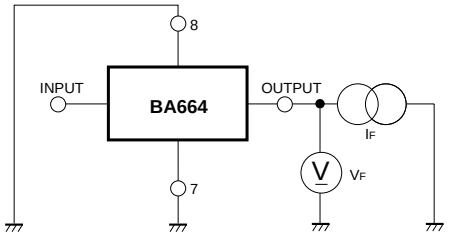
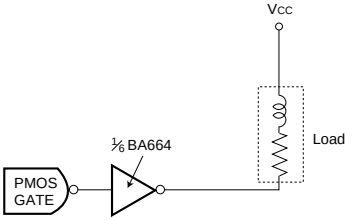


Fig.9

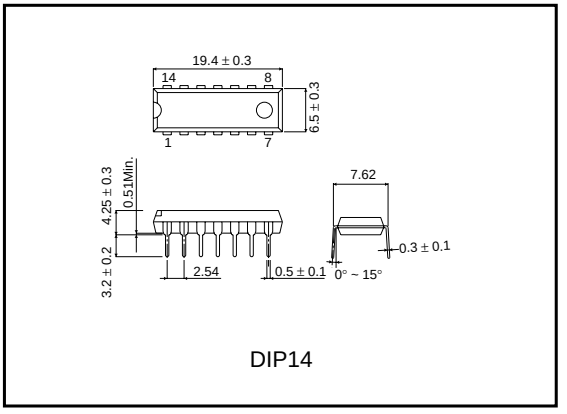
●Application example



Note) Connections should be made as shown in Figure 10 if inductive load is being driven. (Connect Pin 8 to power supply.)

Fig.10

●External dimensions (Units: mm)



DIP14