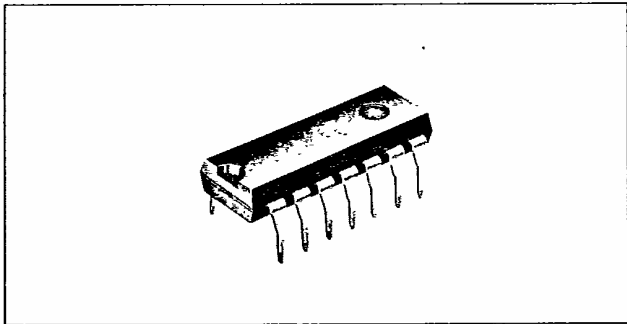


BA614A



Dimensions (Unit: mm)

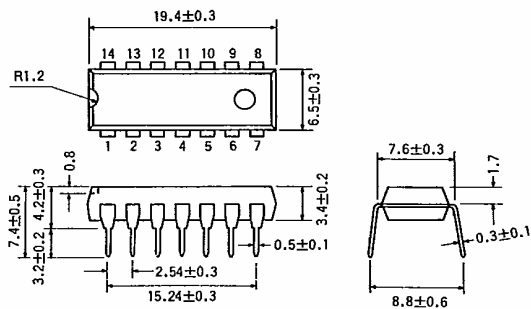


Fig. 1

The BA614A is a six Darlington transistor array with input resistors. The inputs and outputs are arranged on adjacent pins to allow easy board layout.

Features

1. Contains six Darlington transistor arrays.
2. Large current driving capability (100 mA max.).
3. Inputs/outputs arranged on adjacent pins to allow easy board layout.
4. Directly compatible with MOS devices.
5. Large current amplification ratio.
6. High input and output voltages: 38 V and 24 V.

Applications

- Solenoid hammer drivers
- Relay drivers
- LED drivers

Block Diagram

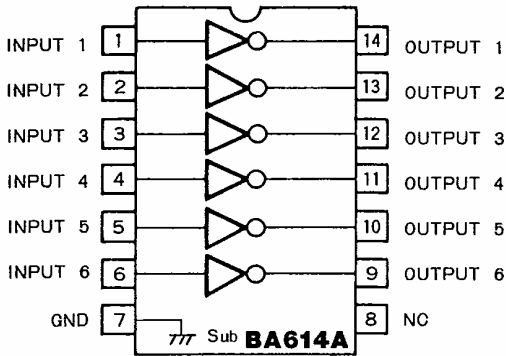


Fig. 2

Circuit Diagram

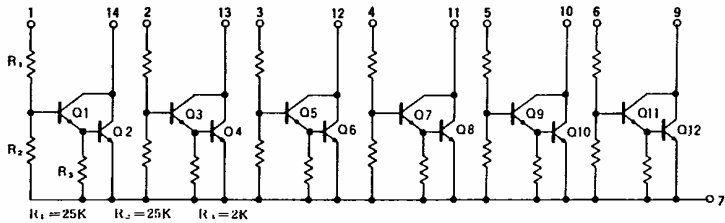


Fig. 3

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	24	V
Collector voltage	V_C	100	V
Input voltage (+)	V_+	38	V
Input voltage (-)	V_-	-0.5	V
Power dissipation	P_d	550*	mW
Operating temperature range	T_{opr}	-25 ~ 75	°C
Storage temperature range	T_{stg}	-55 ~ 125	°C

*Derating is done at 5.5 mW/°C for operation above Ta=25°C.

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Test circuit
Supply voltage range (output)	V_{CC}	—	—	20	V	—	—
Output leakage current	I_L	—	—	100	μA	$V_C = 20V$, $V_{IN} = 0V$	Fig. 8
Collector saturation voltage	$V_{CE(sat)}$	—	1.4	2.2	V	$I_{OUT} = 75mA$, $V_{IN} = 17V$	Fig. 9
Input current	I_{IN}	—	1.6	3.2	mA	$V_{IN} = 35V$, $I_{OUT} = 0mA$	Fig. 10

Electrical Characteristic Curves

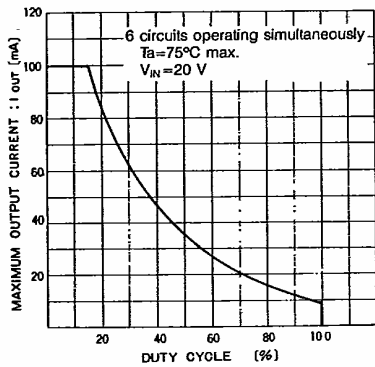


Fig. 4 Maximum output current vs. duty cycle

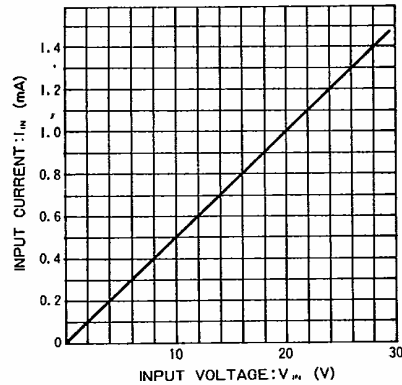


Fig. 5 Input current vs. input voltage

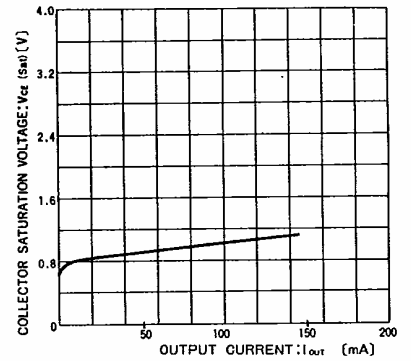


Fig. 6 Collector saturation voltage vs. output current

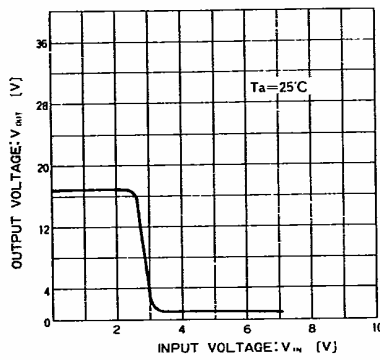


Fig. 7 Output voltage vs. input voltage

Test Circuits

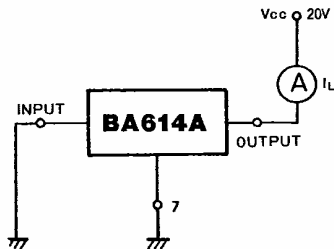


Fig. 8 Output leakage current test circuit

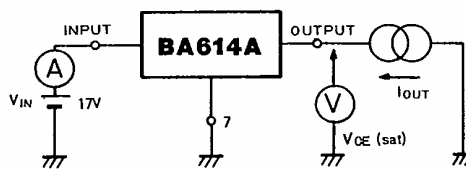


Fig. 9 Collector saturation voltage test circuit

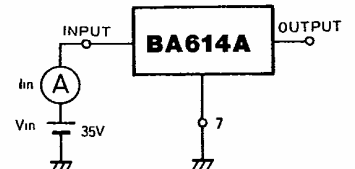


Fig. 10 Input current test circuit

Application Example

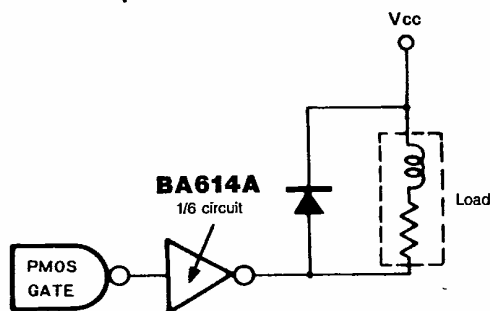


Fig. 11

For inductive load driving, use the connection as shown in Fig. 11. To suppress surge current from the inductive load, use a clamping diode in parallel with the load.