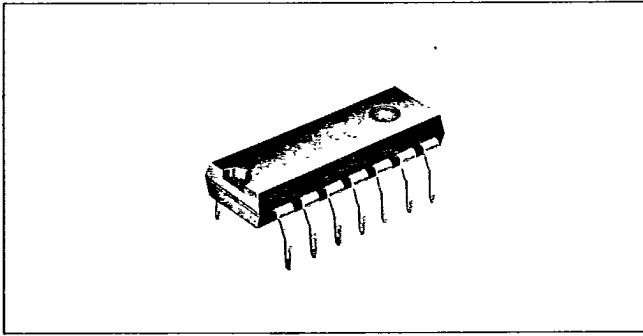


Large Current Driver
BA614A

T-52-13-90



Dimensions (Unit: mm)

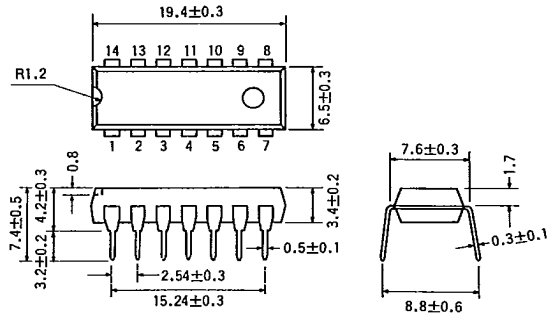


Fig. 1

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

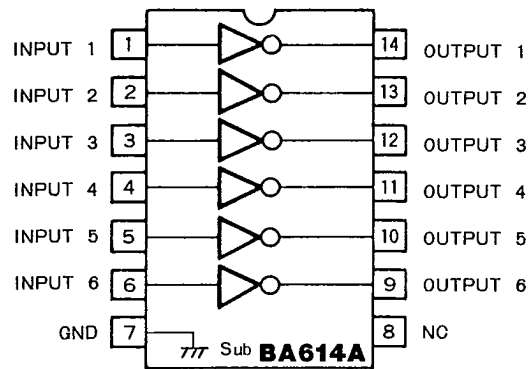


Fig. 2

Circuit Diagram

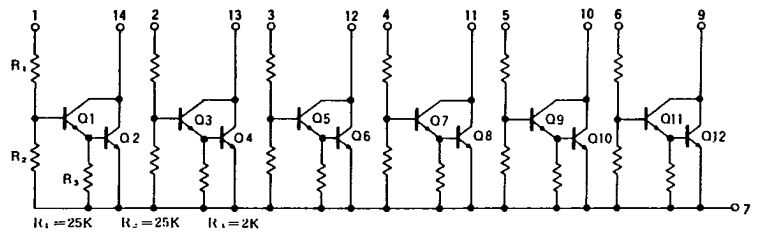


Fig. 3

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

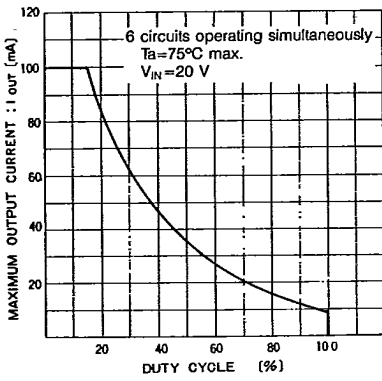


Fig. 4 Maximum output current vs. duty cycle

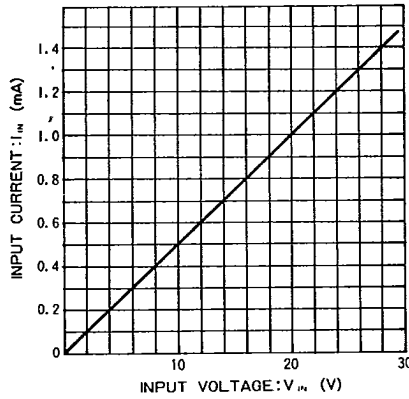


Fig. 5 Input current vs. input voltage

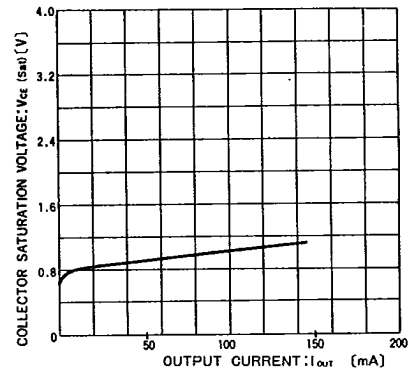


Fig. 6 Collector saturation voltage vs. output current

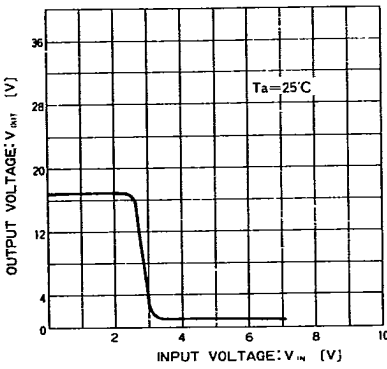


Fig. 7 Output voltage vs. input voltage

Test Circuits

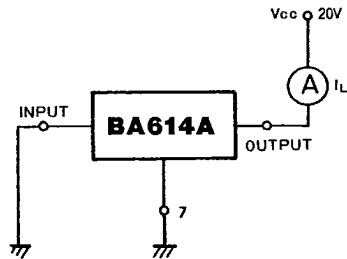


Fig. 8 Output leakage current test circuit

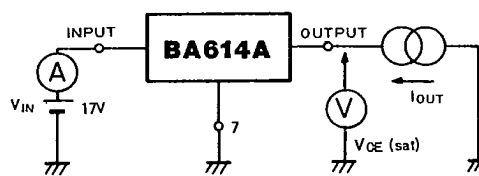


Fig. 9 Collector saturation voltage test circuit

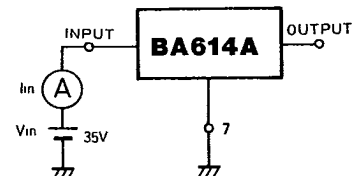


Fig. 10 Input current test circuit

Application Example

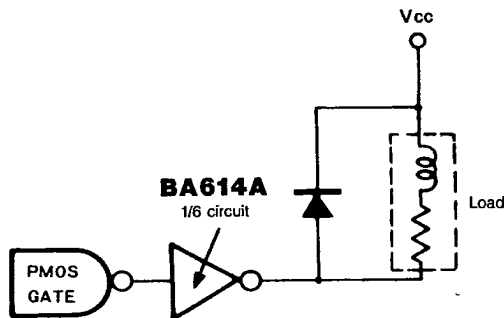


Fig. 11

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.

Drivers