

6-Unit 150mA Transistor Array

IR2425

T-52-13-45

# IR2425

## 6-Unit 150mA Transistor Array

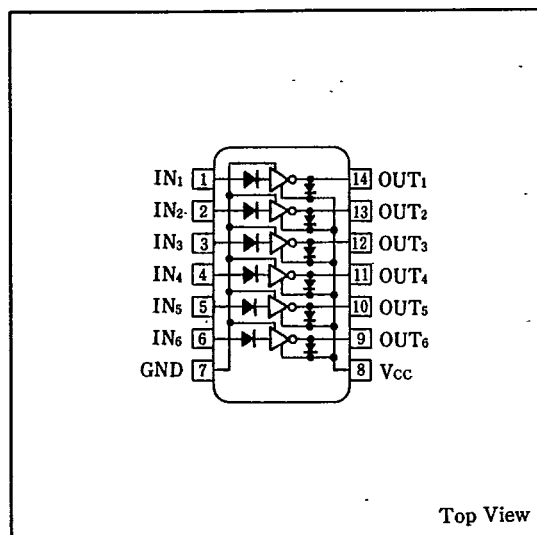
### Description

The IR2425 is a 6-circuit driver. The internal clamping diodes enable the IC to drive the inductive load directly.

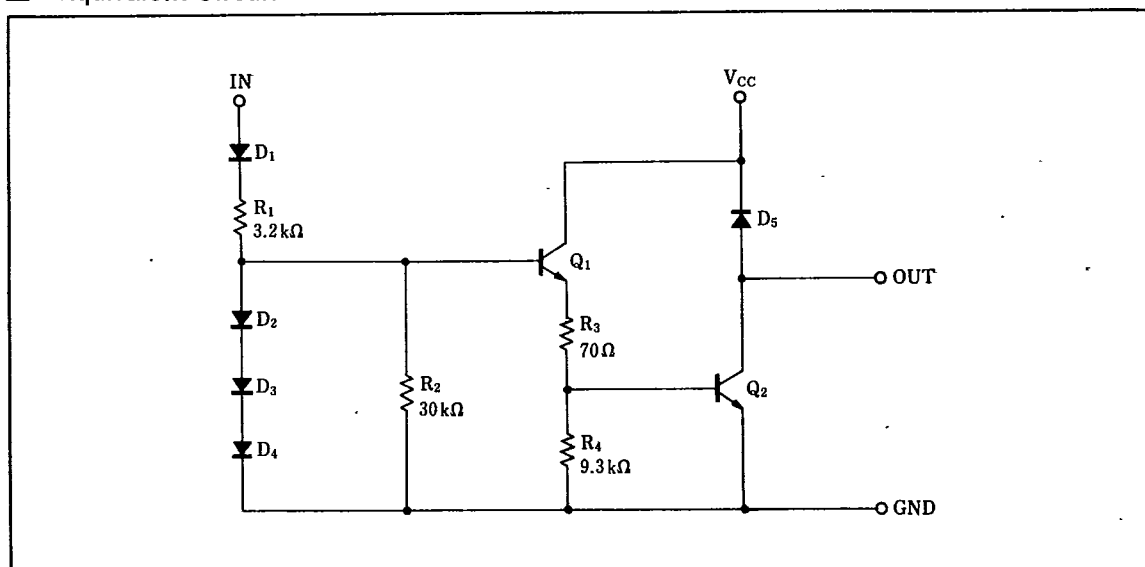
### Features

1. Internal negative input voltage protective diode
2. Low output saturation voltage
3. Internal output clamping diode
4. 14-pin dual-in-line package

### Pin Connections



### Equivalent Circuit



SHARP

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## ■ Absolute Maximum Ratings

| Parameter                                   | Symbol                      | Condition                   | Rating            | Unit                 |
|---------------------------------------------|-----------------------------|-----------------------------|-------------------|----------------------|
| Supply voltage                              | $V_{CC}$                    |                             | 15                | V                    |
| Breakdown voltage between collector-emitter | $BV_{CEO}$                  |                             | 18                | V                    |
| Output current                              | $I_{OUT}$                   | Each circuit                | 150               | mA                   |
| Clamp diode surge current                   | $I_{SURGE}$                 |                             | 150               | mA                   |
| Input voltage                               | $V_{IN}$                    |                             | $-35 \sim V_{CC}$ | V                    |
| Power dissipation                           | $P_D$                       | $T_a \leq 25^\circ\text{C}$ | 650               | mW                   |
| $P_D$ derating ratio                        | $\Delta P_D/^\circ\text{C}$ | $T_a > 25^\circ\text{C}$    | 6.5               | mW/ $^\circ\text{C}$ |
| Operating temperature                       | $T_{OPR}$                   |                             | $-10 \sim +65$    | $^\circ\text{C}$     |
| Storage temperature                         | $T_{STG}$                   |                             | $-25 \sim +100$   | $^\circ\text{C}$     |



## ■ Electrical Characteristics

 $(V_{CC}=15\text{V}, T_a=-10 \sim +65^\circ\text{C})$ 

| Parameter                     | Symbol       | Condition                                                                                                   | MIN. | TYP. | MAX. | Unit          |
|-------------------------------|--------------|-------------------------------------------------------------------------------------------------------------|------|------|------|---------------|
| No-load circuit current       | $I_{CC}$     | Total amount of current flowing through one circuit when $V_{CC}=V_{IN}=15\text{V}$ and $V_{OUT}=0\text{V}$ |      | 12   | 22   | mA            |
| On-state input current        | $I_{I\ ON}$  | $V_{IN}=3.5\text{V}, V_{OUT}=0\text{V}$                                                                     |      | 0.3  | 1.2  | mA            |
|                               |              | $V_{IN}=8\text{V}, V_{OUT}=0\text{V}$                                                                       |      | 2.0  | 5.5  |               |
| ON-state output voltage       | $V_{O\ ON}$  | $V_{IN}=3.5\text{V}, I_{OUT}=130\text{mA}$                                                                  |      |      | 0.8  | V             |
| OFF-state output current      | $I_{O\ OFF}$ | $I_{IN}=12\ \mu\text{A}, V_{OUT}=15\text{V}$                                                                |      |      | 100  | $\mu\text{A}$ |
| Input reverse leakage current | $I_{IR}$     | $V_{IN}=-30\text{V}, V_{OUT}=0\text{V}$                                                                     |      |      | 10   | $\mu\text{A}$ |
| Clamp diode forward voltage   | $V_F$        | $I_F=130\text{mA}$                                                                                          |      |      | 2.0  | V             |
| Clamp diode reverse current   | $I_R$        | $V_R=15\text{V}$                                                                                            |      |      | 100  | $\mu\text{A}$ |

## ■ Electrical Characteristic Curve

## Output current—Duty cycle Characteristics

