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# R&E International

A Subsidiary of Microchip Technology Inc.

## RE46C101

**Piezoelectric Horn Driver and LED Driver Circuit**  
Product Specification

### General Description

This product is intended for applications using a self oscillating piezoelectric horn although it can be used in direct drive applications. Feedback control and a driver circuit are provided as well as a horn enable function. The design also provides an open drain N-channel driver suitable for use with a light emitting diode.

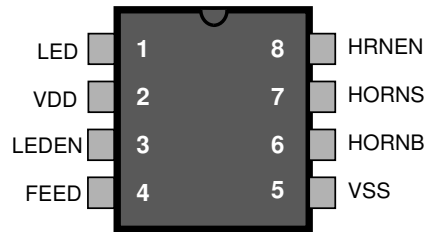
### Applications

Smoke detectors  
CO Detectors  
Personal Security Products  
Electronic Toys

### Features

- Low Quiescent Current (<100na)
- Low Driver Ron - 20Ω typical at 9V
- Wide Operating Voltage Range
- 8 Pin DIP and SO Packages
- Available in Standard Packaging or RoHS Compliant Pb Free Packaging

### Pin Configuration



### ABSOLUTE MAXIMUM RATINGS

| PARAMETER                       | SYMBOL     | VALUE              | UNITS |
|---------------------------------|------------|--------------------|-------|
| Supply Voltage                  | $V_{DD}$   | 18                 | V     |
| Input Voltage Range Except FEED | $V_{in}$   | -3 to $V_{dd} + 3$ | V     |
| FEED Input Voltage Range        | $V_{infd}$ | -10 to +22         | V     |
| Input Current except FEED       | $I_{in}$   | 10                 | mA    |
| Operating Temperature           | $T_A$      | 0 to 50            | °C    |
| Storage Temperature             | $T_{STG}$  | -55 to 125         | °C    |
| Maximum Junction Temperature    | $T_J$      | 150                | °C    |

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only and operation at these conditions for extended periods may affect device reliability.

This product utilizes CMOS technology with static protection; however proper ESD prevention procedures should be used when handling this product. Damage can occur when exposed to extremely high static electrical charge.

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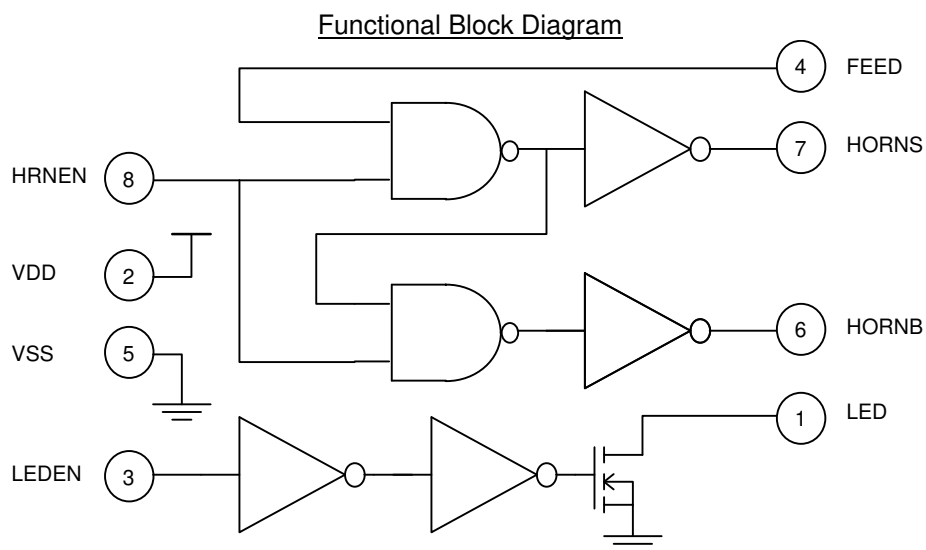
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## DC Electrical Characteristics at TA = 25°C, VDD=9V, Typical Application (unless otherwise noted)

| Parameter           | Symbol           | Test Pin | Test Conditions                  | Limits |     |      |       |
|---------------------|------------------|----------|----------------------------------|--------|-----|------|-------|
|                     |                  |          |                                  | Min    | Typ | Max  | Units |
| Supply Voltage      | V <sub>DD</sub>  | 2        | Operating                        | 6      | 9   | 16   | V     |
| Supply Current      | I <sub>DD1</sub> | 2        | HRNEN,LEDEN and FEED=0V          |        |     | 100  | nA    |
| Input Voltage Low   | V <sub>IL1</sub> | 3,8      |                                  |        |     | 1    | V     |
| Input Voltage High  | V <sub>IH1</sub> | 3,8      |                                  | 2.3    |     |      | V     |
| Input Leakage Low   | I <sub>IL1</sub> | 3,8      | Vin=VSS                          |        |     | -100 | nA    |
|                     | I <sub>LFD</sub> | 4        | FEED=-10V                        |        |     | -50  | uA    |
| Input Leakage High  | I <sub>IH1</sub> | 3.8      | Vin=VDD                          |        |     | 100  | nA    |
|                     | I <sub>HFD</sub> | 4        | FEED=22V                         |        |     | 50   | uA    |
| Output Voltage Low  | V <sub>OL1</sub> | 6,7      | I <sub>ol</sub> =16mA            |        | .3  | .5   | V     |
|                     | V <sub>OL2</sub> | 6,7      | I <sub>ol</sub> =16mA, VDD=7.2V  |        |     | .9   | V     |
|                     | V <sub>OL3</sub> | 1        | I <sub>ol</sub> =10mA, VDD=7.2V  |        | .5  | 1    | V     |
| Output Voltage High | V <sub>Oh1</sub> | 6,7      | I <sub>oh</sub> =-16mA           | 8.5    | 8.7 |      | V     |
|                     | V <sub>Oh2</sub> | 6,7      | I <sub>oh</sub> =-16mA, VDD=7.2V | 6.3    |     |      | V     |



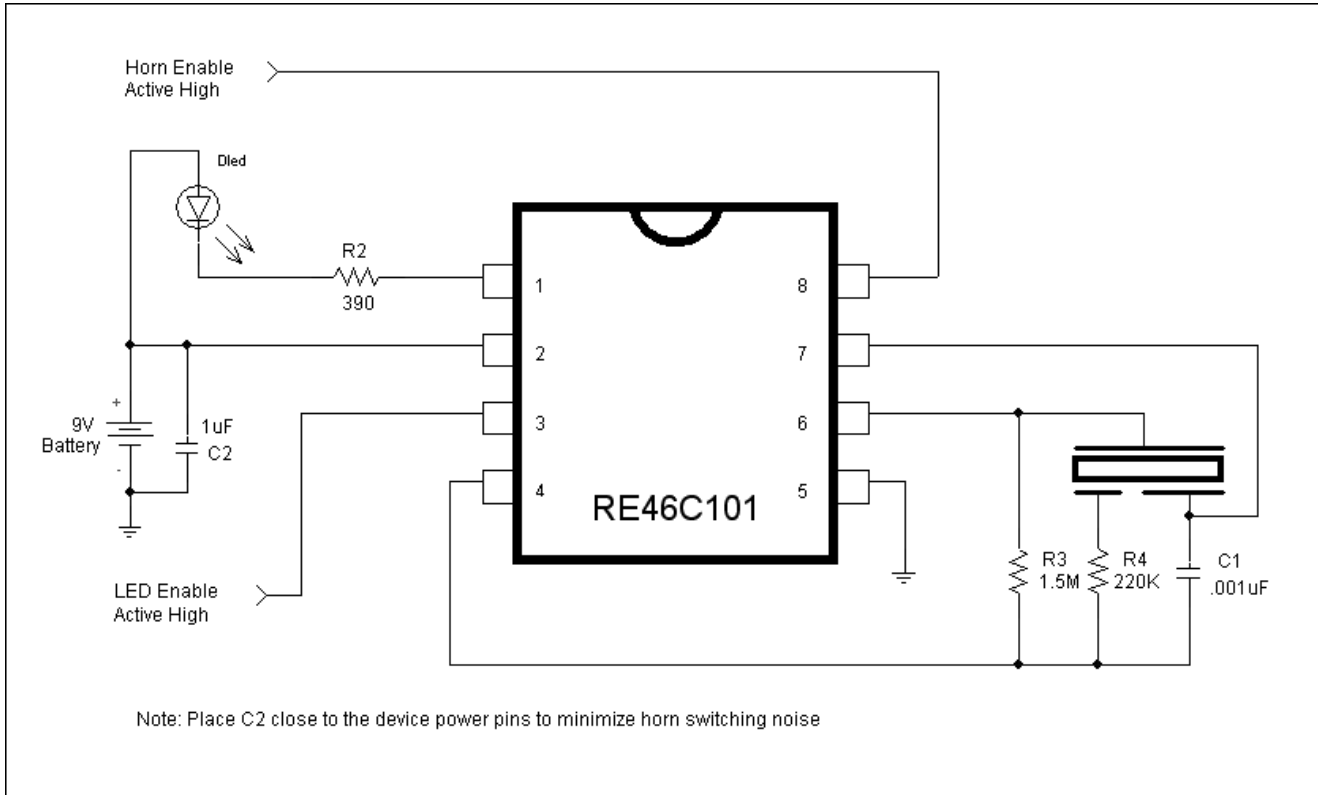
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## Typical Application



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