

MM236**SOUND-SENSE LED DRIVER****DATA SHEET****FEATURES**

- Wide battery operating voltage to support 2-battery and 3-battery system
- Low operating current
- Direct drive LED

GENERAL DESCRIPTION

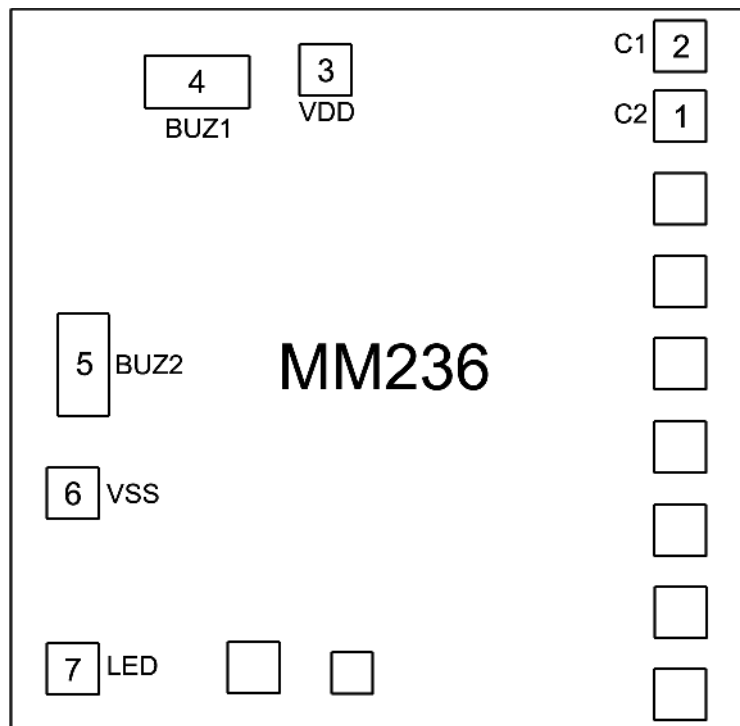
Sound-sense LED driver MM236 offers simplicity for applications on sound detection with LED output. Thanks to a simple piezoelectric buzzer, MM236 can pick up the sound signal on the buzzer and convert it into LED lighting. The chip is the most cost effective single chip solution.

MM236 starts sound detection after an inhibit period when it is powered. The period is between 0.5 second to 2 seconds. When the device is triggered by sound, a lighting pattern is played. The sensitivity of sound detection is affected by the mechanical structure and the efficiency of the piezoelectric buzzer. To a certain extent, R_{SENSE} can be used to fine-tune the sensitivity.

PIN DEFINITION

| Pin # | Pin Name | Description |
|-------|----------|---|
| 1 | C2 | connect to capacitor C _{IN} |
| 2 | C1 | connect to capacitor C _{IN} |
| 3 | VDD | positive power supply |
| 4 | BUZ1 | sound input connect to piezoelectric buzzer and resistor R _{SENSE} |
| 5 | BUZ2 | sound input connect to piezoelectric buzzer and resistor R _{SENSE} |
| 6 | VSS | negative power supply |
| 7 | LED | LED output connect to the cathode of an LED |

PAD DIAGRAM



Substrate connects to VDD

ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

V_{SS} = 0V, Ambient Temperature = 25°C

| PARAMETER | SYMBOL | TEST CONDITIONS | LIMITS | UNIT |
|-----------------------|-----------------|-----------------|------------------------------|------|
| Supply Voltage | V _{DD} | - | 5.1 | V |
| Input Voltage | V _{IN} | - | -0.3 to V _{DD} +0.3 | V |
| Operation Temperature | T _{OP} | - | 0 to 55 | °C |
| Storage Temperature | T _{ST} | - | -25 to 125 | °C |

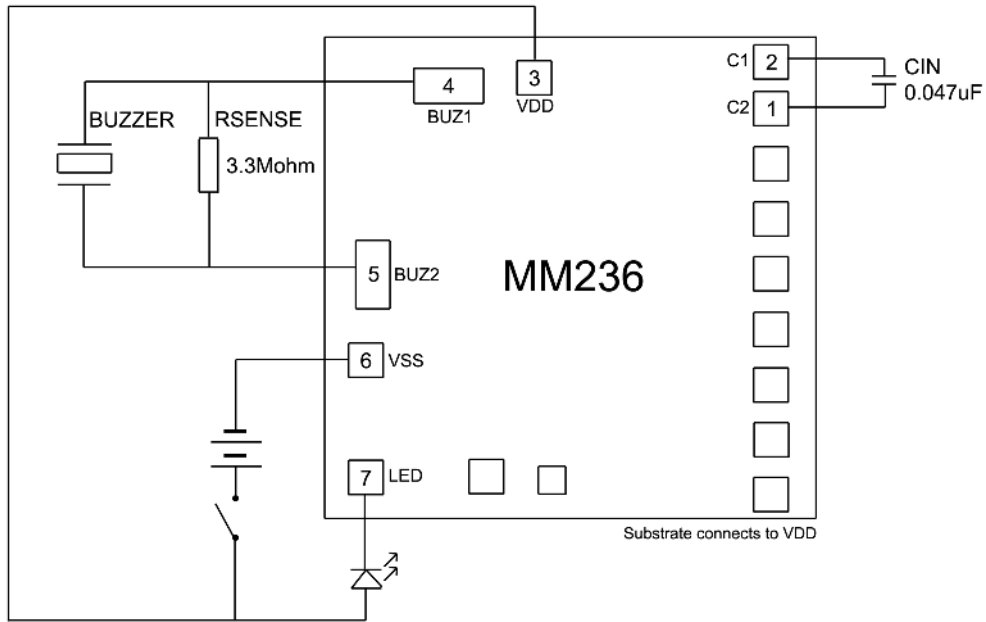
Absolute maximum ratings are the values beyond which the safety of the device cannot be guaranteed

DC & Operating Characteristics

V_{SS} = 0V, V_{DD} = 3.0V, Ambient Temperature = 25°C (unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | LIMITS | | | UNIT |
|----------------------------------|-----------------------------------|------------------------|----------------------|-----|----------------------|------|
| | | | MIN | TYP | MAX | |
| Operating Voltage | V _{DD} - V _{SS} | - | 2.4 | 3.0 | 5.1 | V |
| Operating Current | I _{DD} | No Load | - | 100 | - | μA |
| Oscillation Frequency | F _{OSC} | - | - | 128 | - | KHz |
| Trigger Voltage (BUZ1 - BUZ2) | V _{TG} | - | 800 | - | - | μV |
| Silence Voltage (BUZ1 - BUZ2) | V _{SL} | - | - | - | 200 | μV |
| Input High Voltage | V _{IH} | - | V _{DD} -0.3 | - | V _{DD} | V |
| Input Low Voltage | V _{IL} | - | V _{SS} | - | V _{SS} +0.3 | V |
| LED Output Low Voltage | V _{OL} | I _{OL} = -5mA | - | - | V _{SS} +0.8 | V |

TYPICAL APPLICATION CIRCUIT



The recommended value of the resistor R_{SENSE} is 3.3Mohm.

The final value inside a product may be affected by casing and other mechanical parameters.

IMPORTANT NOTICE

AMOS Technology Limited reserves the right to make changes in the circuitry and the specification of this chip without prior notice. Customers are advised to check AMOS for the latest information.