



## 1.8V Optical mouse sensor

Data Brief

### Feature summary

- Pin compatible with VT5364
- Can be used (with external MCU) in all optical mouse applications
- Single +1.8V supply
- Very low power operation, enabling long battery life
- CPI programmable up to 3200 (default 800 cpi)
- Up to 9,600 frames per second
- Tracking at up to 40 ips
- I2C Interface
- On-chip ADC for voltage level reporting
- Proven, high volume package technology - smallest package currently available on market
- Minimal external circuitry
- Suitable for use with both LED and laser (VCSEL) light sources

### Description

The VT5366 has been designed for pin to pin compatibility with the VT5364<sup>(a)</sup> and is STMicroelectronics first generally available chip for use in all optical mice applications (USB/PS2, Wireless - 27MHz/2.4GHz and BlueTooth). The device has been designed to provide long battery life whilst enabling excellent navigation control and precision on a wide range of surfaces. Housed in the smallest, currently available, package (7mmx7mm), the chip is suitable for use in small form-factor mice demanded by laptop users. Minimal external circuitry is required thereby reducing BOM and assembly costs.

The VT5366 sensor operates over a wide range of illuminant wavelengths. For devices operating at approximately 850 nm (IR LED or VCSEL), the on-die automatic exposure controller (AEC) compensates for the change in sensitivity compared to 640nm (red LED). Motion performance can be improved by increasing the current supplied to the navigation LED.

### Applications

- USB/PS2, Wireless & BlueTooth Optical Mouse

### Technical specifications

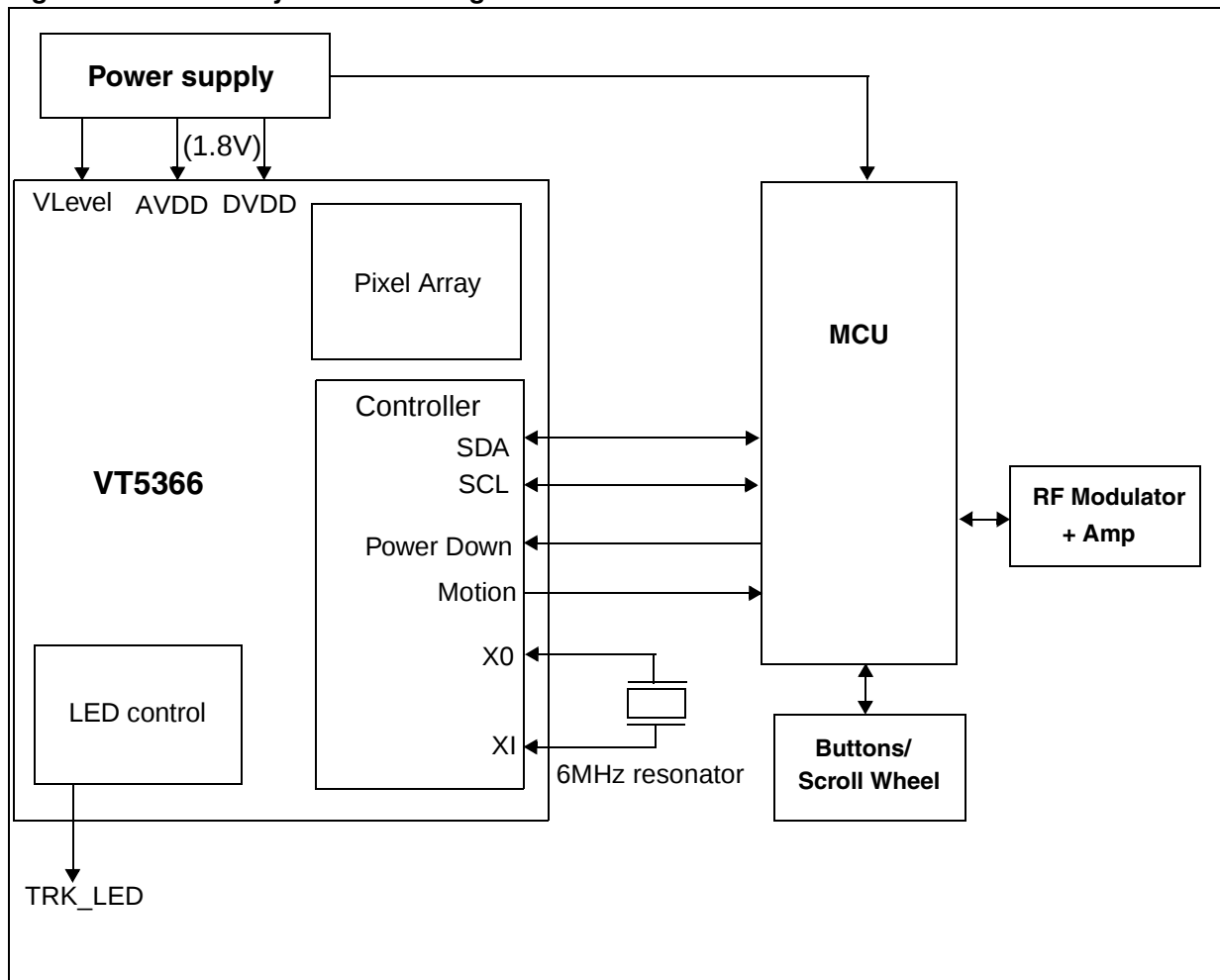
|                            |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| Resolution                 | CPI programmable up to 3200. Default 800                                     |
| Pixel size                 | 30.4 $\mu\text{m}$                                                           |
| Array size                 | 20*20 pixels                                                                 |
| Frame rate                 | Up to 9,600 frames/second                                                    |
| High speed motion detector | Accurate motion up to 40 ips                                                 |
| Clock                      | 6MHz                                                                         |
| Supply voltage             | 1.8V                                                                         |
| Supply current             | Run (9.6 Kfps) - 9 mA<br>Power down - 10 $\mu\text{A}$<br>typ. excluding LED |
| Operating temperature      | [0: 60] °C                                                                   |
| Package type               | 7*7mm 32 lead LOQFP<br>(Low profile Optical Quad Flat Pack)                  |

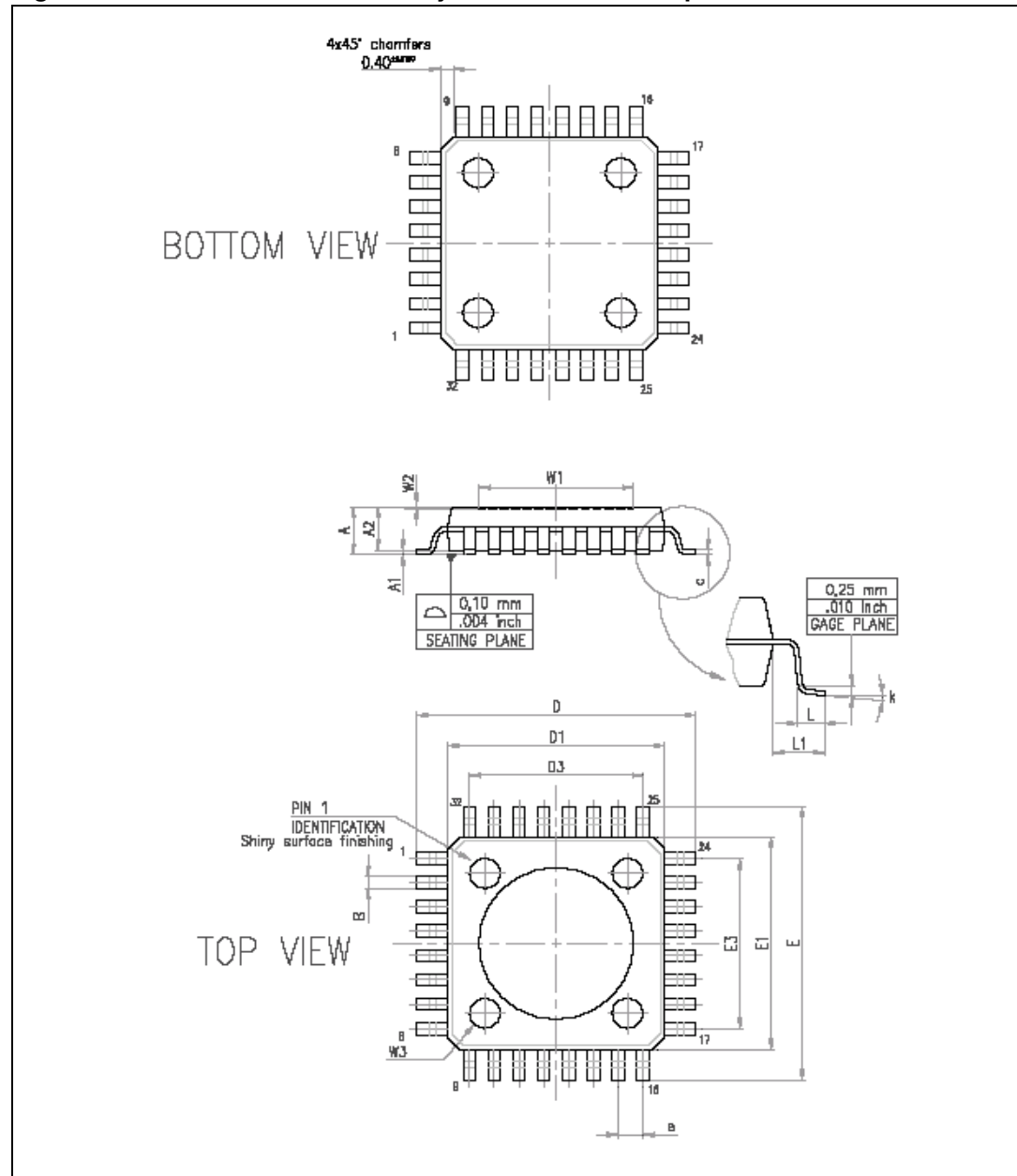
### Order codes

| Part number | Package       |
|-------------|---------------|
| VT5366V032  | 32-lead LOQFP |

a. To make use of the new battery level function the PCB and firmware will need to be modified

Figure 1. VT5366 system block diagram



**Figure 2. LQFP32 Clear resin body 7.0 x 7.0 x 1.40 footprint 1.0**

## Revision history

**Table 1. Document revision history**

| Date        | Revision | Changes                                                          |
|-------------|----------|------------------------------------------------------------------|
| 17-Mar-2006 | 1        | Initial release.                                                 |
| 13-Jun-2006 | 2        | <i>Technical specifications</i> : Updated supply current values. |

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