



VT5366

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^(a) 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 μm
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 Power down - 10 μA typ. excluding LED
Operating temperature	[0: 60] °C
Package type	7*7mm 32 lead LOQFP (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

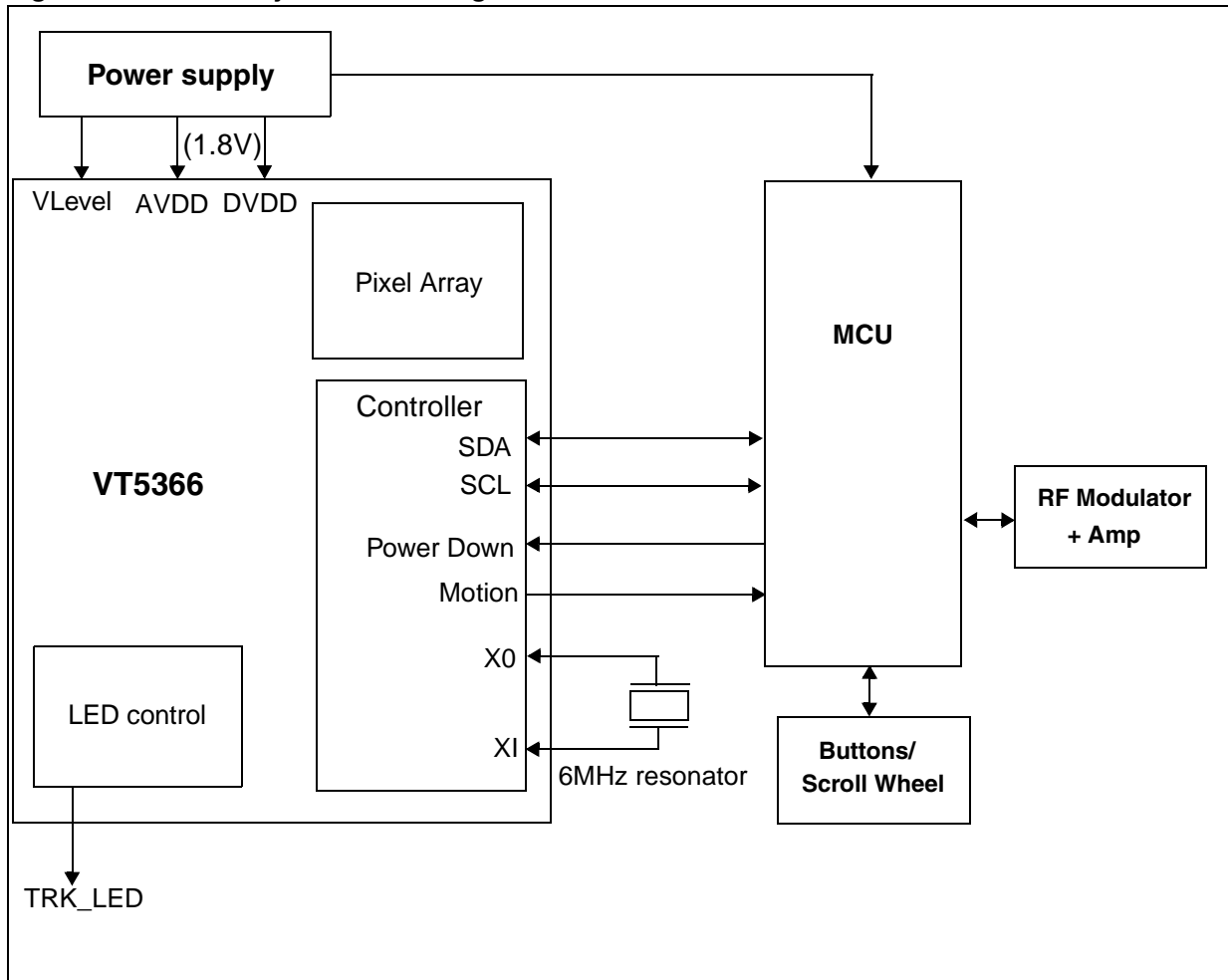
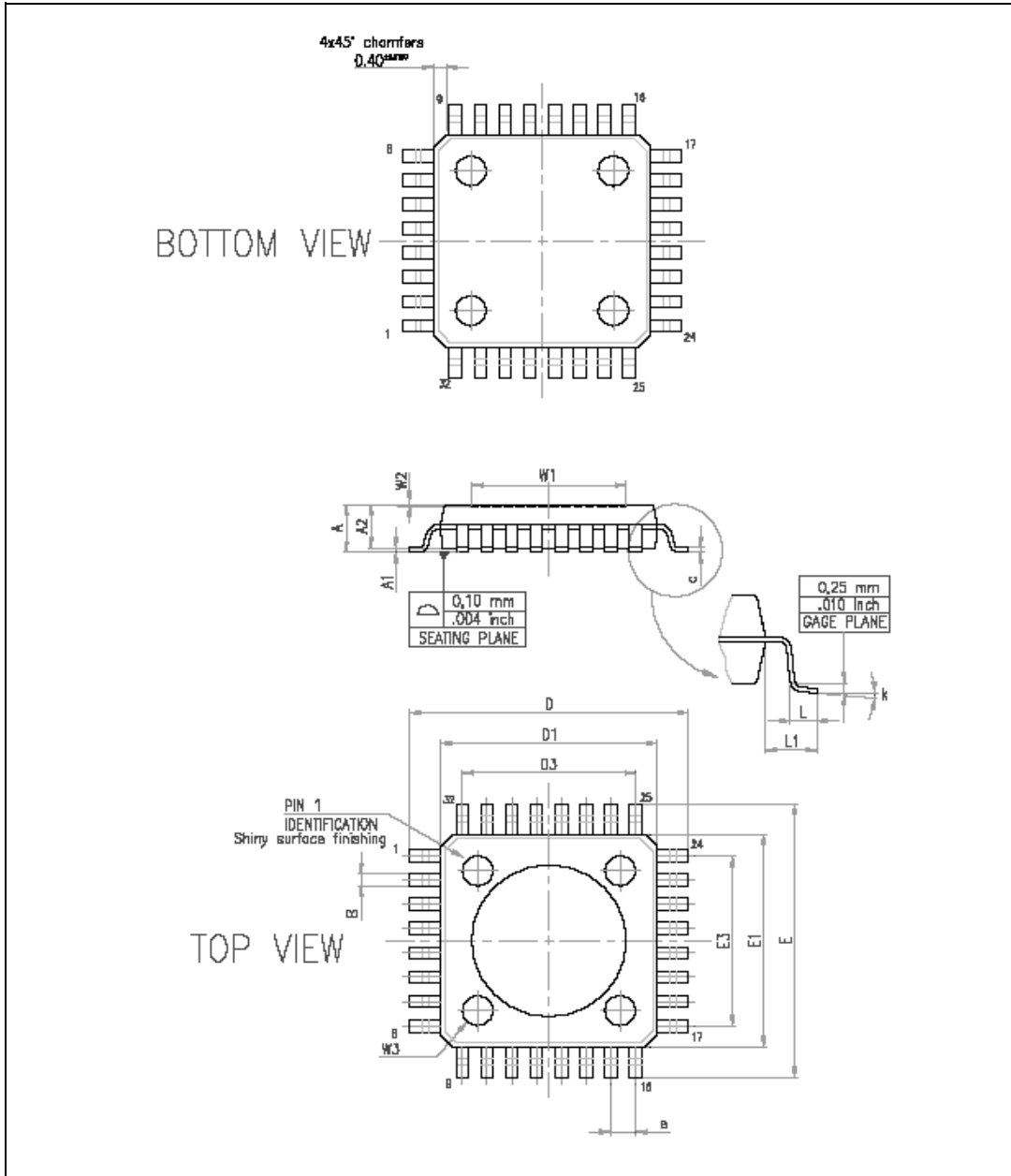


Figure 2. LQFP32 Clear resin body 7.0 x 7.0 x 1.40 footprint 1.0



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.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED REPRESENTATIVE OF ST, ST PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS, WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2006 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com