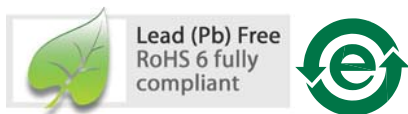


# PAW3220LU-TJDU

## ULTRA LOW POWER WIRELESS MOUSE CHIP



### General Description

The PixArt PAW3220LU-TJDU is an ultralow power and small form factor optical chip which is optimized for infrared LED based wireless mouse applications. It has high accuracy navigation ability, low power architecture and automatic power management which make it suitable for power-sensitive application such as wireless mouse. The PAW3220LU-TJDU is capable of high-speed motion detection up to the velocity of 30 inches/sec and acceleration of 10g. In addition, it has an on-chip oscillator and a built-in programmable LED current driver. In order to achieve the best tracking performance, it is recommended to match the chip with infrared SMT LED (LITE-ON LTE-C216-P-W) and PNSR-015-RB3 optical lens.

### General Features

- Single power with wide voltage range  
Low Voltage Segment : 1.7V to 2.1V (VDD, VDDA short)  
High Voltage Segment : 2.1V to 3.6V (VDDA should connect a capacitor to GND)
- 3-wired SPI serial interface (NCS, SCLK, SDIO)
- Selectable 8-bit (default) or 12-bit motion data length for Delta\_X and Delta\_Y
- Selectable resolution up to ~1800cpi (based on PNSR-015-RB3 lens)
- Motion detection interrupt output
- Tracking speed up to 30ips (inches/sec) and 10g acceleration
- Built-in Low Power Timer (LPT) for Sleep1/ Sleep2/ Sleep3<sup>(1)</sup> mode
- Adaptive frame rate control for extra power saving during moving at different speeds
- Programmable LED Current Source (4-bits with 1mA/step) to provide LED with constant current

### Key Specifications

Supply Voltage	1.7V ~ 2.1V (VDD,VDDA short) 2.1V ~ 3.6V (VDDA should connect a capacitor to GND)
Light source	Infrared LED (SMT) LITE-ON LTE-C216-P-W
Companion lens	PNSR-015-RB3
Control Interface	3-wired SPI, max clock speed : 2 MHz
Tracking Speed	Up to 30ips
Acceleration	Up to 10g
CPI Resolution	Up to ~1800cpi
Frame Rate	Adaptive frame rate Max : 4000 fps (frames per sec)
Operating Current (including LED)	Work with LED @ VDD=2.2V Run : 0.27mA <sup>(2)</sup> Sleep1 : 25uA Sleep2 : 10uA Sleep3 : 8uA Power down : 3uA
Package	SMD 8 Balls

### Ordering Information

Part Number	Application
PAW3220LU-TJDU	SMT packaged optical mouse chip (for Infrared SMT LED)
PNSR-015-RB3	Companion optical lens (for Infrared SMT LED)

Note :

1. In default, Sleep3 is not enabled and it can be enabled by changing the setting in register 0x06 through SPI interface
2. An average current based on 85% weighting for chip moving at speed  $\leq$  5ips and 15% weighting for speed >5ips