

# Disk drive spindle and VCM motor driver

Data Brief

### **Features**

- Suitable for enterprise and multi-platter desktop high performance drives
- Register based architecture
- Serial communication interface up to 60MHz

#### VCM driver

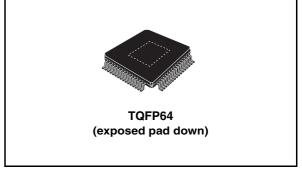
- 2.5A peak current drive capability
- Integrated bridge power devices with 0.3Ωmax bridge impedance
- 15 bit linear DAC for current command with gain switch
- Power on ramp loading and unloading capability with 10 bit ADC
- Fully integrated discontinuous mode ramp unload circuitry at power off with end of travel detection or alternate voltage mode power off scheme

## Spindle driver

- 3.0A peak current drive capability
- Integrated bridge power devices with 0.3Ωmax bridge impedance
- ST's SmoothDrive<sup>™</sup> architecture
- Voltage mode sinusoidal driving
- Inductance sense start-up capability

#### Other functions

- 4 high efficiency hysteretic switching positive regulators controllers with voltage margining
- -5V regulator controller with voltage margining



- External isolation FET driver
- Voltage monitoring
- Power-on reset with soft start and programmable integrated delay
- 10 bit ADC with multiplexed inputs
- Thermal sense circuit and overtemperature shutdown

## **Description**

L7220 is a motor controller IC designed for both enterprise and multi-platter desktop hard disk drive applications.

The spindle motor driver subsystem integrates all power FETs driven by ST's SmoothDrive commutation technology.

The voice coil driver block includes the power FETs, as well as ramp load and unload capability.

Hysteretic switching regulator controllers are included.

L7220 embeds a serial interface with a maximum speed of 60MHz.

Table 1. Device summary

Order code	Package	Packing
L7220	TQFP64	Tray

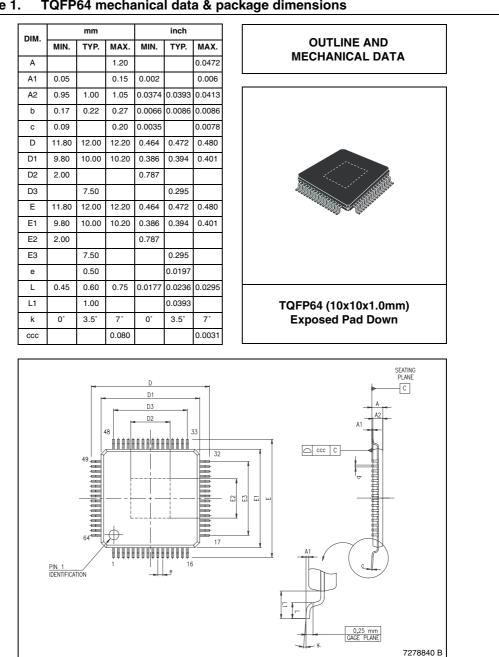
**Package information** L7220

# **Package information**

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect. The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label.

ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

Figure 1. TQFP64 mechanical data & package dimensions



L7220 Revision history

# 2 Revision history

Table 2. Document revision history

Date	Revision	Changes
24-Dec-2007	1	Initial release.

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