cLS-FSTS-MC2-5

2-Axis DC Motor Driver

Product Brief—Revision A   15 October 2009

System Highlights

- Conforms Freescale Semiconductor 's Tower system

- Jumper configurable

- 8.0V to 28V continuous operation (transient operation from 5.0V to 40V)

- 3.0V and 5.0V TTL/CMOS logic compatible inputs

- Two independent H-bridge drivers

- Over-current limiting (regulation) via internal constant-off-time PWM

- Output short-circuit protection (short to VPWR or GND)

- Temperature-dependent current-limit threshold reduction

- All inputs have an internal source/sink to define the default (floating input) states

- Sleep Mode with current draw < 50 µA (each half with inputs floating or set to match default logic states)

- Screw terminals motor and motor power connection

Description

The cLS-FSTS-MC2-5 utilizes an MC33932. This is a monolithic H-bridge in a tough thermally package. The board also includes inputs from pulse sensors used for motor RPM. All I/O is routed through a jumper selection connector prior to the Tower System interface. This allows for the routing to one of two possible resources per interface point. Motor speed is controlled via two PWM pulses per motor; the PWMs have a maximum frequency of 11KHz. The pulse sensors inputs are not required for the

module to function. Each motor channel has an analog low-side current sense available for the Tower system CPU card.

Board ships with full schematics and code sample. Also included is an excel sheet to be included with the Freescale Tower Configuration Tool.
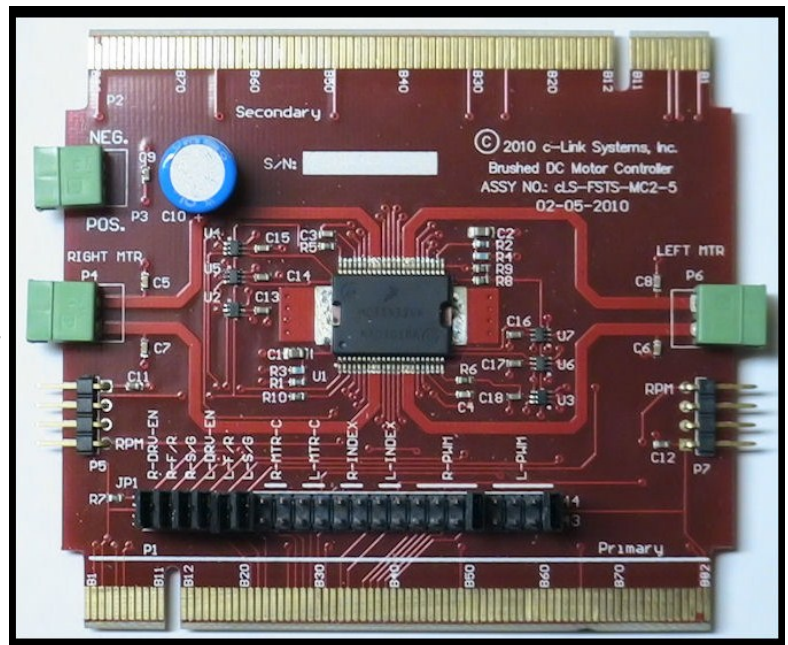
Performance:

H-bridge outputs:	4
Outputs RDS$_{ON}$:	120 mΩ
PWM:	11 KHz
ESD:	2 KV
Control/communication:	Parallel
Operating voltage:	8V to 28V
Operating current:	5A continuous, package is heat sinked to the ground plane

For updates check

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Corporate Brief

For the past seven years c-Link Systems, Inc. has focused on industrial control/automation of process lines in metal rolling and paper mills. Out of this emerged our expertise in Industrial Robotics and high speed fiber optic communications. A previous background in mechanics, dynamics and satellite guidance systems has positioned the company to support our customers in the growing field of robotics as it relates to autonomous robotic vehicles (ARV) with numerous commercial/industrial applications.—SEA

Omni-Chassis Information

SPECIFICATIONS

Interface:

Selectable as required to conform to Tower System.
Screw terminals for motor and motor power connection.

Physical Characteristics:

Freescale Tower System format .

Power Requirements:

Supply Voltage (Typical)	3.3V or 5.0V (5.5V maximum)
Motor Supply Voltage	8VDC—28VDC
Current (typical)	TBA
Motor Current	5A per motor maximum

Environmental Characteristics:

Operating Temperature:	-20°C to 90°C
Storage Temperature:	-40°C to 105°C
Relative Humidity:	0 to 90% non-Condensing

Model Numbers

cLS-FSTS-MC2-5: Dual channel motor card