




西安拓尔微电子有**限**公司

专业的模拟&数模混合IC设计公司

(Fabless Design House)

Smart Motor Driver Introduction of Toll

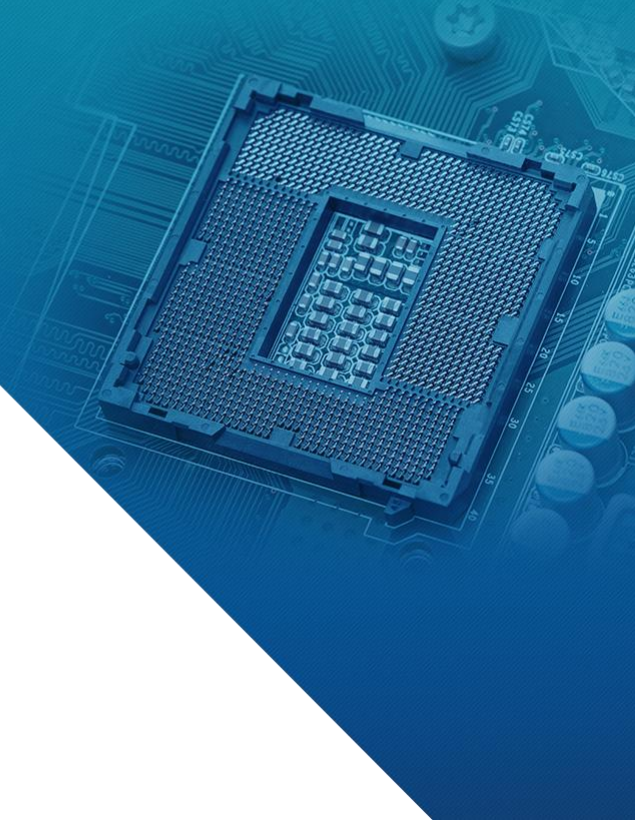
 拓尔微电子

 2019.12.22

www.toll-semi.com | www.suntosemi.com



TMI and SUNTO are the brands of TOLL microelectronic inc.



CONTENTS
目录

- ① 公司简介
- ② DC有刷和步进马达驱动产品
- ③ BLDC栅极驱动产品



我们的使命

感受客户的挑战和压力，提供一流的芯片解决方案和服务，持续为客户创造最大价值。



成立：2007年4月

注资：3061万人民币

人员：100+



产品线---

数模混合ASIC，
电源管理 IC，
马达驱动IC，信号和接口控制



品牌---

拥有TMI和SUNTO两个品牌



创始人：方建平 博士（微电子学博士后；曾就职于德国Dialog半导体公司）

首席科学家：郝跃 院士（中国科学院院士）

Power相关IC



定制类专用IC



二. DC有刷和步进马达驱动产品

- ① [DC有刷和步进马达驱动Roadmap](#)
- ② [DC有刷和步进产品列表](#)
- ③ [物料性能展示](#)

Dual

TMI8548/8549


Dual H-Bridge DC Motor or
One Stepper Motor
VIN 4-16V, 1A@16V
Full/half step
1ohm RDSON(HS+LS)
Built-in OTP/OCP/SCP/UVLO
SOP10, xxx8548/8549

TMI8833C

Dual H-Bridge DC Motor or
One Stepper Motor
VIN 2.7-12V, 2A
PWM input
1.4ohm RDSON(HS+LS)
Built-in OTP/OCP/SCP/UVLO
ETSSOP16, xxx8833c

TMI8824/25

One Stepper Motor
VIN 8.2-45V, 1.6A@24V
Up to 1/32 Micro-stepping
PWM input
1.38/0.4ohm RDSON(HS+LS)
Built-in OTP/OCP/SCP/UVLO
ETSSOP16/QFN, xxx8824/8825

 MP
 Developing

Single

TMI8837/C

H-Bridge DC Motor Driver
VCC 1.8-5.5V, VM 1.8-12V
850mohm RDSON(HS+LS)
TMI8837: Up to 1.5A
TMI8837C: Up to 1.0A
PWM IN, Built-in OTP/OCP/
SCP/UVLO, DFN8, SOP8 xxx8837/C

TMI8260/61

H-Bridge DC Motor Driver
VCC 3-18V
70mohm RDSON(HS+LS)
Up to 4A(SOP) 6A(DIP)
PWM IN
Built-in OTP/OCP/UVLO
SOP8, DIP8

TMI8360

H-Bridge DC Motor Driver
VCC 3-28V
90mohm RDSON(HS+LS)
Up to 3.6A(SOP) 3.8A(DIP)
PWM IN
Built-in OTP/OCP/UVLO
SOP8, DIP8

TMI8870

H-Bridge DC Motor Driver
VIN 6.5-45V, 1A
600mohm RDSON(HS+LS)
Peak Current Up to 3.6A
PWM IN
Built-in OTP/OCP/SCP/UVLO
ESOP8, xxx8870

Low/Mid-Voltage

High Voltage

直流有刷马达驱动H桥系列									
型号	低压电源	马达电压	通道	持续/峰值 电流	导通电阻 (H+L)	保护功能	恒流调节	封装	兼容IC
TMI8837	1.8 ~ 6V	0 ~ 12V	1	1.5A/2A	0.85Ω	UVLO,TSD OCP	-	DFN8 SOP8	DRV8837 PT2466
TMI8837C	1.8 ~ 6V	0 ~ 12V	1	1A/1.5A	0.85Ω	UVLO,TSD OCP	-	DFN8	DRV8837C
TMI8260SP	-	3 ~ 20V	1	3.8A/9A	0.08Ω	UVLO,TSD OCP	-	SOP8	
TMI8260DP	-	3 ~ 20V	1	6.5A/14A	0.08Ω	UVLO,TSD OCP	-	DIP8	
TMI8261	-	3 ~ 20V	1	5.0A/12A	0.07Ω	UVLO,TSD OCP	-	SOP8	
TMI8360	-	3 ~ 28V	1	3.6A/9A 3.8A/10A	0.95Ω	UVLO,TSD OCP	-	SOP8 DIP8	
TMI8870	-	6.8~45V	1	1A/3.6A	1.0Ω	UVLO,TSD OCP	√	ESOP8	DRV8870 A4950

步进马达驱动系列

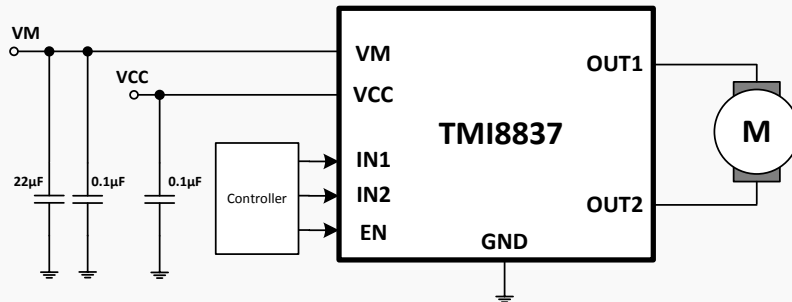
型号	低压电源	马达电压	通道	持续/峰值 电流	导通电阻 (H+L)	输入模式	保护功能	恒流调节	封装	兼容
TMI8548	-	4 ~ 16V	2	1.0A/1.5A	0.83Ω	PWM(2 lines)	UVLO TSD	√	SOP10	LV8548MC
TMI8549	-	4 ~ 16V	2	1.0A/1.5A	0.83Ω	PWM(1 line)	UVLO TSD	√	SOP10	LV8549MC
*TMI8833C	-	2.7 ~ 10V	2	1.0A/1.5A	1.4Ω	PWM STEP-DIR	UVLO TSD,OCP	√	eTSSOP16	DRV8833C MP6507
*TMI8824	-	8.2 ~ 45V	2	0.8A/1.6A	1.38Ω	STEP-DIR 1/32 Micro- step	UVLO TSD,OCP	√	eTSSOP28	DRV8824
*TMI8825	-	8.2 ~ 45V	2	2.5A/4A	0.4Ω	STEP-DIR 1/32 Micro- step	UVLO TSD,OCP	√	eTSSOP28	DRV8825

*: 开发中

TMI8837/8837C-1CH MV H-bridge DC Motor Driver

Features

- ◆ Support the input voltage range:
Motor power: 1.8V~12V
Control power supply: 1.8V~7V
- ◆ LDMOS R_{dson} (HS+LS) 650mΩ (typical)
- ◆ Ultra-low power sleep mode
- ◆ 45nA (typ.) VM sleep mode current
- ◆ 17nA (typ.) VCC sleep mode current
- ◆ TMI8837: I_{max}=1.5A
- ◆ TMI8837C: I_{max}=1.0A
- ◆ Built-in UVLO Protection
- ◆ Built-in Over Temperature Protection
- ◆ Built-in Short Circuit Protection
- ◆ Built-in Over Current Protection
- ◆ Built-in Charge Pump
- ◆ TMI8837: DFN8/SOP8, TMI8837C: DFN8

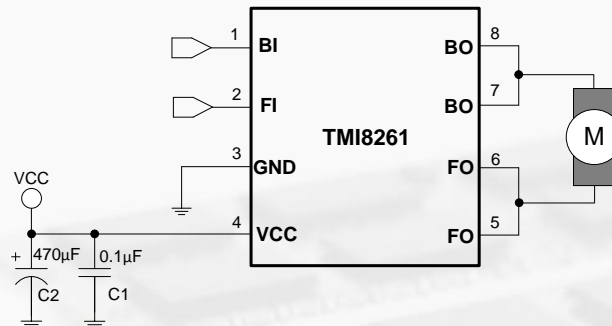
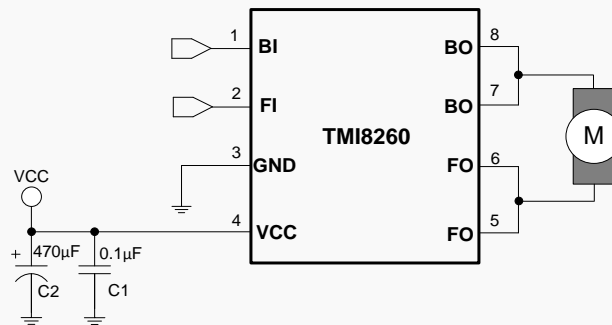


Pin to Pin compatible with XXX8837/C, XX2466

TMI8260/8261-1CH 3~7A MV H-bridge DC Motor Driver

Features

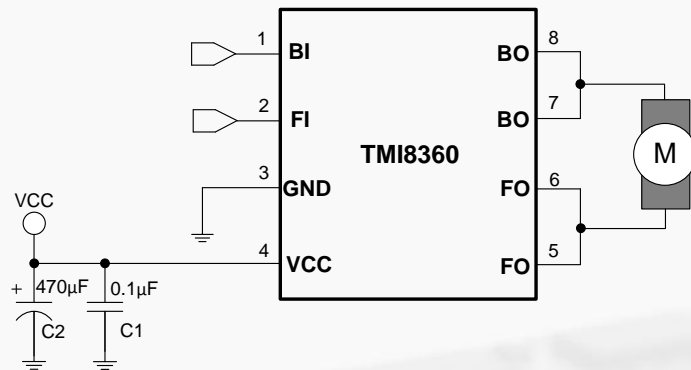
- ◆ Drives one DC Motor
- ◆ Support the input voltage range:
Motor power: 3.0V~18V
Control power supply: 0V~18V
- ◆ Ultra-low LDMOS Rdson (HS+LS)
 - TMI8260SP: 72mΩ @3A (typical)
 - TMI8260DP: 79mΩ @3A (typical)
 - TMI8261SP: 65mΩ @3A (typical)
- ◆ PWM control mode
- ◆ **Ultra-Large continue current**
 - **TMI8260SP: 3.8A**
 - **TMI8260DP: 6.5A**
 - **TMI8261SP: 5A**
- ◆ Ultra-low power sleep mode
- ◆ Built-in UVLO Protection
- ◆ Built-in Over Temperature Protection
- ◆ Built-in Short Circuit Protection
- ◆ Built-in Over Current Protection
- ◆ TMI8260SP/8261SP: SOP8, TMI8260DP: DIP8



TMI8360 - 1CH 3~5A MV H-bridge DC Motor Driver

Features

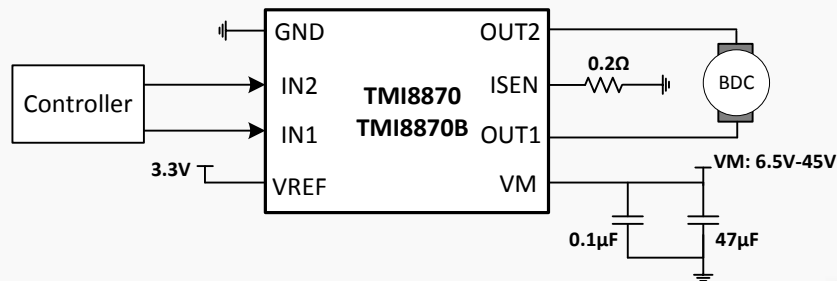
- ◆ Drives one DC Motor
- ◆ Support the input voltage range:
Motor power: 3.0V~28V
Control power supply: 0V~28V
- ◆ Ultra-low LDMOS Rdson (HS+LS)
 - TMI8360SP: 98mΩ @3A (typical)
 - TMI8360DP: 104mΩ @3A (typical)
- ◆ PWM control mode
- ◆ **Ultra-Large continue current**
 - **TMI8360SP: 3.6A**
 - **TMI8360DP: 3.8A**
- ◆ Ultra-low power sleep mode
- ◆ Built-in UVLO Protection
- ◆ Built-in Over Temperature Protection
- ◆ Built-in Short Circuit Protection
- ◆ Built-in Over Current Protection
- ◆ TMI8360SP: SOP8, TMI8360DP: DIP8



TMI8870/B-1CH MV H-bridge DC Motor Driver

Features

- ◆ Drives one DC Motor, one winding of a Stepper Motor, or other loads
- ◆ H-Bridge Motor Driver
Motor power: 6.8V~45V
- ◆ LDMOS Rdson (HS+LS) 650mΩ (typical)
- ◆ 3.6-A Peak Current Drive
- ◆ PWM Control Interface
- ◆ Integrated Current Regulation
- ◆ Low power sleep mode
- ◆ Built-in UVLO Protection
- ◆ Built-in Over Temperature Protection
- ◆ Built-in Over Current Protection
-Latch after OCP: TMI8870
-Retry after OCP: TMI8870B
- ◆ Automatic Fault Recovery
- ◆ ESOP8 Package

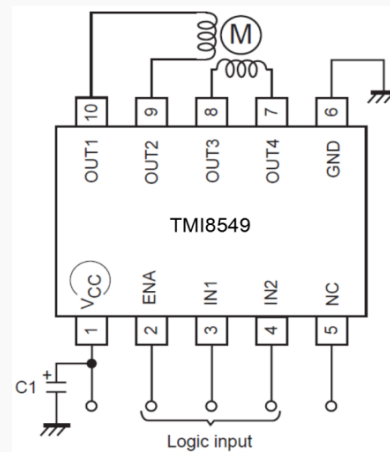
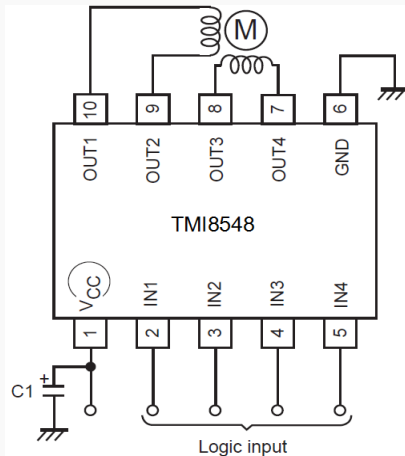


Pin to Pin compatible with XXX8870/X4950

TMI8548/8549-2CH MV Stepper Motor Driver

Features

- ◆ Drives one DC Motor or one Stepper Motor
- ◆ H-Bridge Motor Driver
Motor power: 4V~16V
- ◆ LDMOS R_{dson} (HS+LS) 0.83Ω (typical)
- ◆ PWM Control Interface
 - TMI8548: two lines PWM control
 - TMI8549: one line PWM control
- ◆ Full-step or half-step mode
- ◆ Low power sleep mode
- ◆ Built-in UVLO Protection
- ◆ Built-in Over Temperature Protection
- ◆ The compact package SOP10



Pin to Pin compatible with XX8548MC/8549MC

三. BLDC栅极驱动产品

- ① [BLDC栅极驱动产品Roadmap](#)
- ② [BLDC栅极驱动列表](#)
- ③ [物料性能展示](#)

3 Phase

TMI8130

Three Half-Bridge Gate Driver
VM 4.5-32V
Built-in Charge pump, 5V gate voltage
Dead time: 100ns
Drive current IO+/IO-: 140/170mA
Built-in OTP/OCP/UVLO
QFN20

TMI8160

Three Half-Bridge Gate Driver
VDD12~18V, VM 10-90V
Built-in Boot strap, 12V gate voltage
Dead time: 500ns
Drive current IO+/IO-: 1.2/2A
Built-in OTP/OCP/UVLO
TSSOP20/24

■ MP
■ Developing

1 Phase

TMI8161

One Half-Bridge Gate Driver
VDD12~18V, VM 10-600V
Built-in Boot strap, 12V gate voltage
Dead time: 500ns
Drive current IO+/IO-: 290/620mA
Built-in OTP/OCP/UVLO
SOP20/28, XX2101

Low/Mid-Voltage

High Voltage

TMI No.	Description	Voltage	Input Logic	Ton /Toff	IO+ IO-	Dead Time	Package
*TMI8130	3-phase Gate Driver (Charge Pump)	32V	HIN, LIN	50ns /55ns	140mA /500mA	100ns	QFN20
*TMI8160	3-phase Gate Driver	90V	HIN, LIN	120ns /120ns	1200mA /2000mA	500ns	TSSOP20 QFN24
*TMI8161	Half-bridge Gate Driver (Compatible IR2103)	600V	HIN, $\overline{\text{LIN}}$	500ns /500ns	290mA /620mA	500ns	SOP8

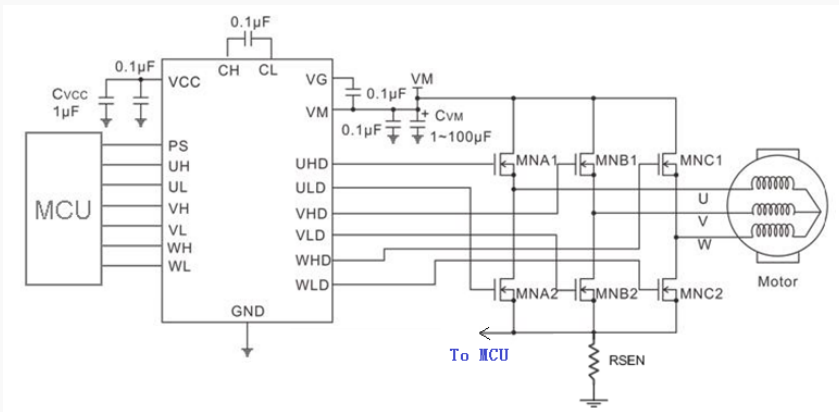
*: 开发中



TMI8130 - 3 Phase MV Gate Driver

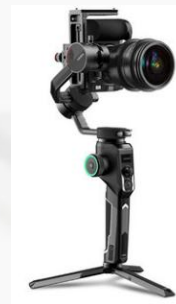
Features

- ◆ 4.5V~36V 3 phase gate driver
- ◆ 3.3V~5V input logic
- ◆ 5V gate voltage with charge pump
- ◆ Dead time ~100ns
- ◆ Built-in 3.3V LDO with 100mA
- ◆ IO+/IO-: 140/500mA
- ◆ Built-in UVLO Protection
- ◆ Built-in Short-through Protection
- ◆ Built-in Over Current Protection
- ◆ QFN20



Application

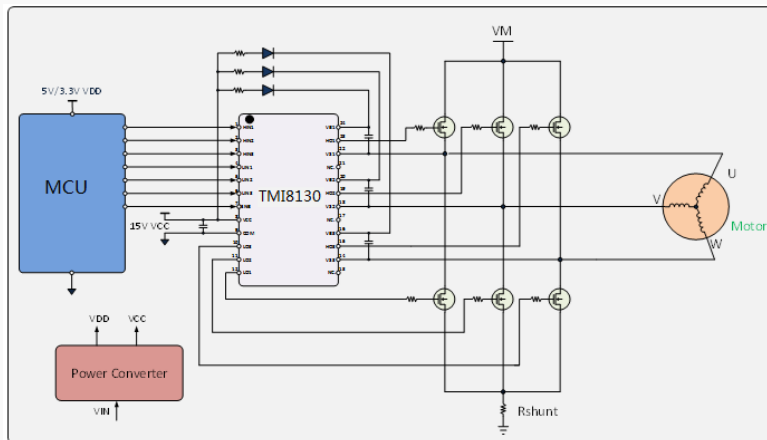
- ◆ 3-phase motor driver
- ◆ Low voltage motor driver
- ◆ Battery based motor driver



TMI8160 - 3 Phase MV Gate Driver

Features

- ◆ 90V 3 phase gate driver
- ◆ VDD is 5V~18V voltage
- ◆ 3.3V~5V input logic
- ◆ Built-in 3.3V LDO with 100mA
- ◆ Dead time ~500ns
- ◆ IO+/IO-: 1.2A/2A
- ◆ Built-in UVLO Protection
- ◆ Built-in Short-through Protection
- ◆ TSSOP20, QFN20



Application

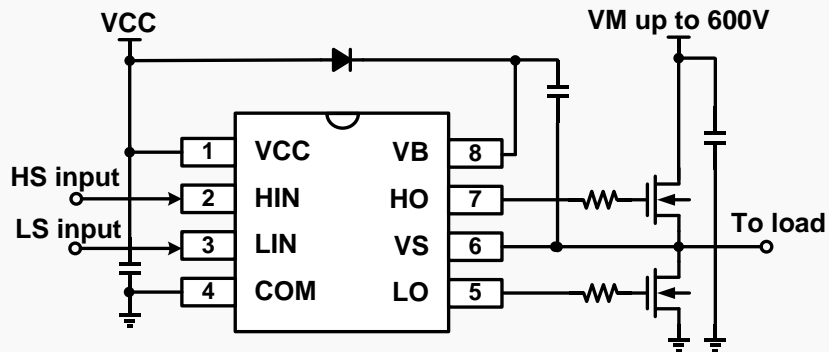
- ◆ 3-phase motor driver
- ◆ E-BIKE
- ◆ Electric power tool
- ◆ Battery based high power motor driver



TMI8161 - 3 Phase HV Gate Driver

Features

- ◆ 600V half-bridge gate driver
- ◆ VDD is 12V~18V voltage
- ◆ 3.3V~5V input logic
- ◆ Built-in 3.3V LDO with 100mA
- ◆ Dead time ~500ns
- ◆ IO+/IO-: 290mA/620mA
- ◆ Built-in UVLO Protection
- ◆ Built-in Short-through Protection
- ◆ SOP8



Application

- ◆ 3-phase motor driver
- ◆ 110~220V motor driver



需要规格书,样品的朋友请联系：

谭小姐 13425154820 QQ: 375234017