

摘要:

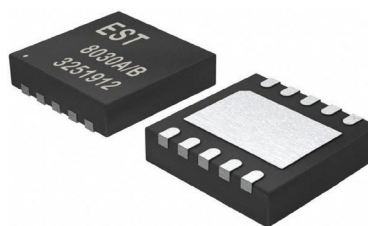
EST.8030 是65V 半桥MOSFET 驱动器IC，内建自调整死区时间(Adaptive Dead-Time)和防击穿保护功能(Shoot-Through Protection)。自我调整死区时间，电路主动监测半桥驱动输出，缩短高侧和低侧 MOSFET 间的转换时间，使电源效率达到最大。防击穿保护电路可防止错误输入和噪声造成高侧和低侧 MOSFET 的开关短路导通损坏。

EST.8030 提供8V 至65V 的宽工作电压范围，以最大化提高系统效率。8V低工作电压能延长在电池供电应用系统的正常工作时间。另外，EST.8030的闸极驱动将输出闸极驱动电压设置为VDD(IC 内部产生电压6V)。

EST.8030 提供10 接脚封装具散热片，工作界面温度范围为-40°C 至+125°C。

特性:

- 自我调整死区时间
- 自动设置转换延迟
- 实现最佳电源效率
- 防击穿保护功能
- 防止短路导通
- 保护开关电路
- 提高工作可靠性



WDFN10

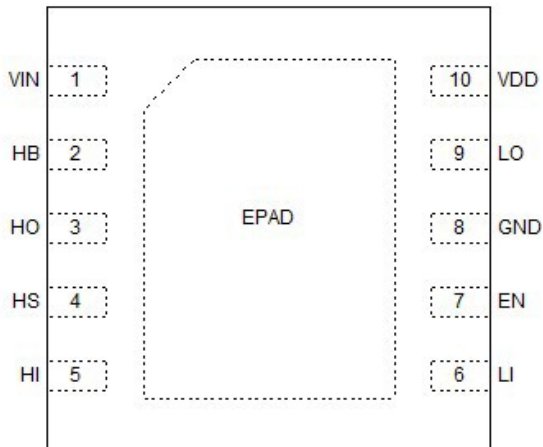
应用:

- 电池供电的电动工具
- 电源逆变器
- 全桥和半桥电机马达驱动
- 电动自行车
- 风扇

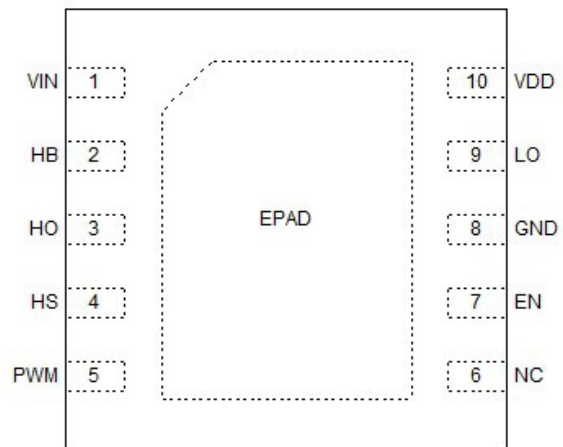
好处	特色
效率高	自我调整死区时间
应用广泛	65V 操作可防护电机马达反电动势(EMF)引起的电压峰值 防击穿保护电路可防止交叉传导
工作时间长	闸极驱动电压: VDD(电压 6V) 8V 至 65V 的宽工作电压范围, 允许更长的运行时间
小型化封装	10 引脚封装具散热片

编号	VIN 电压	输入	输出	接脚	封装
EST.8030A	8V ~ 65V	单输入 PWM TTL 接口	半桥	10	WDFN10
EST.8030B	8V ~ 65V	双输入 TTL 接口	半桥	10	WDFN10

接脚说明:



EST.8030A



EST.8030B

8030A	8030B	腳位名稱	功能說明
1	1	VIN	VIN Supply voltage. The VIN input supply to the internal linear regulator and the operating voltage range is from 8V to 65V. This pin connects an external bypass capacitor to GND
2	2	HB	High side gate drive floating supply voltage. This pin connects an external 0.1uF bootstrap capacitor to HS pin that is fed by a bootstrap diode
3	3	HO	High side gate drive floating output. This pin used to drive the high side N-MOSFET.
4	4	HS	High side gate drive floating ground.
5		HI	High Side Drive input.
6		LI	Low Side Drive input.
	5	PWM	Single PWM Drive input. Drives both the high side and low side outputs
	6	NC	No Connect
7	7	EN	Enable input. When TTL level high on the enable pin, the IC is enabled
8	8	GND	IC ground
9	9	LO	Low side gate drive output. This pin used to drive the low side N-MOSFET.
10	10	VDD	Internal Supply voltage. Internal 6.2V Regulator Output and is created by internal LDO from VIN. This pin connects an external 1uF ceramic capacitor to GND.
EP	EP	EPAD	Exposed Pad. Connect to GND.

Absolute Maximum Ratings

Symbol	Pin	Parameter	Min	Max	Units
V _{IN}	1	supply voltage	- 0.3	65	V
V _{DD}	10	supply voltage	- 0.3	7	V
V _{HB} to V _{HS}	2 to 4	floating supply voltage	- 0.3	7	V
V _{HS}	4	floating ground voltage	- 1	65	V
		floating ground maximum slew rate		50	V/ns
V _{HB}	2	floating supply voltage		V _{HS} + 7	V
V _{HO}	3	floating output voltage	V _{HS} - 0.3	V _{HB} + 0.3	V
V _{LO}	9	output voltage	- 0.3	V _{DD} + 0.3	V
V _{HI} , V _{LI} , V _{EN}	5, 6, 7	input voltage	- 0.3	V _{IN} + 0.3	V
		power dissipation at TA=50°C		1.2	W
		operating junction temperature	- 40	125	°C
		storage temperature	- 55	150	°C
		soldering temperature		260	°C

Notice : Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability

Recommended Operating Conditions

Symbol	Pin	Parameter	Min	Max	Units
V _{IN}	1	supply voltage	8	65	V
V _{DD}	10	supply voltage	5	6.5	V
V _{HS}	4		- 1	65	V
V _{HB}	2		V _{HS} + 4.7	V _{HS} + 6.5	V
V _{HI} , V _{LI} , V _{EN}	5, 6, 7	Input voltage	0	65	V

ESD Ratings

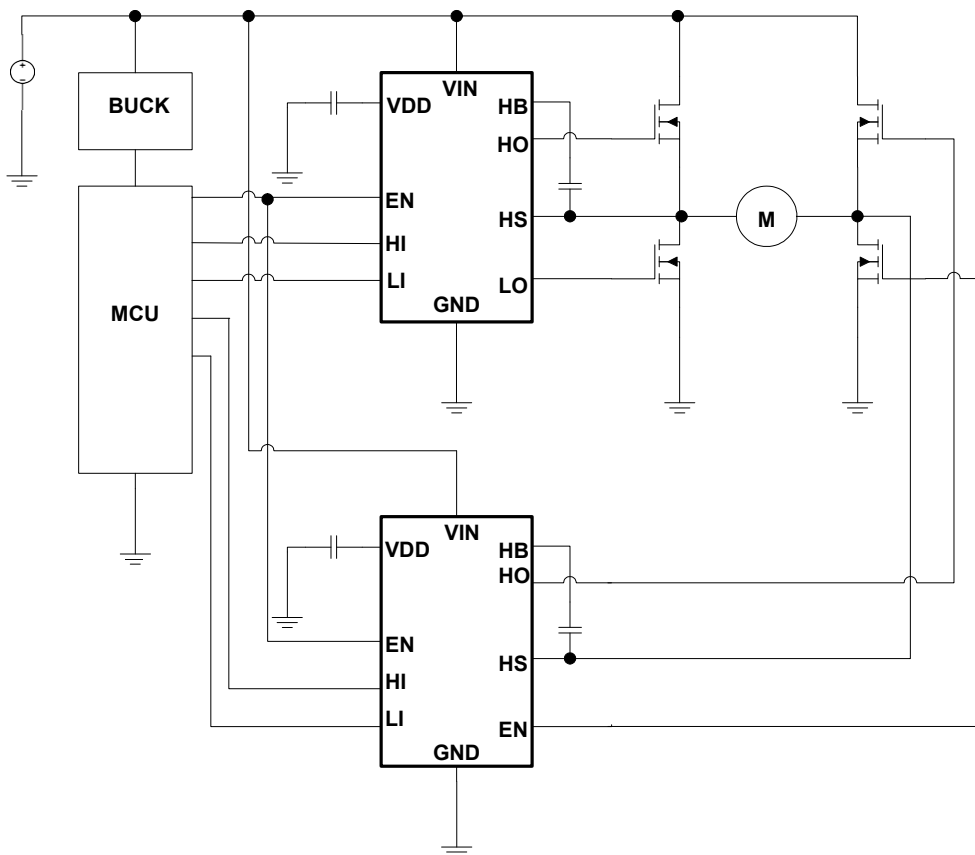
Symbol	Parameter	Value	Units
V _{HBM}	Human Body Model (HBM), per HBM test standard [MIL-STD-883H / Method 3015.8]	± 2	KV
V _{MM}	Machine Model (MM), per Machine Model test standard [ANSI / ESD S5.2-2009]	± 200	V

Thermal data

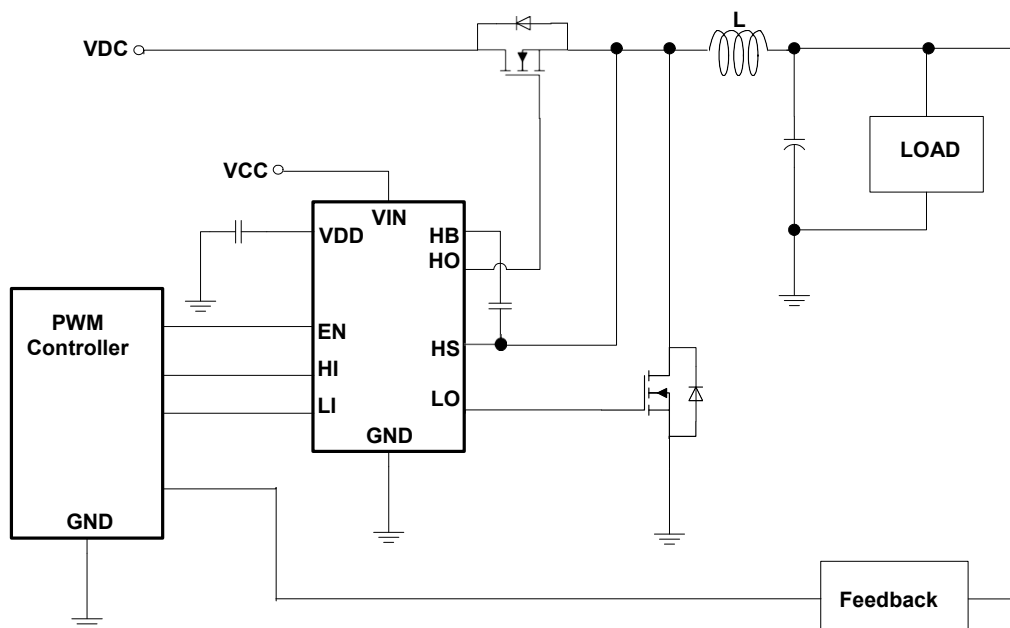
Symbol	Parameter	Value	Units
θ _{JA}	Maximum thermal resistance from junction to ambient (WDFN10-3x3)	60	°C/W

简化应用电路图：

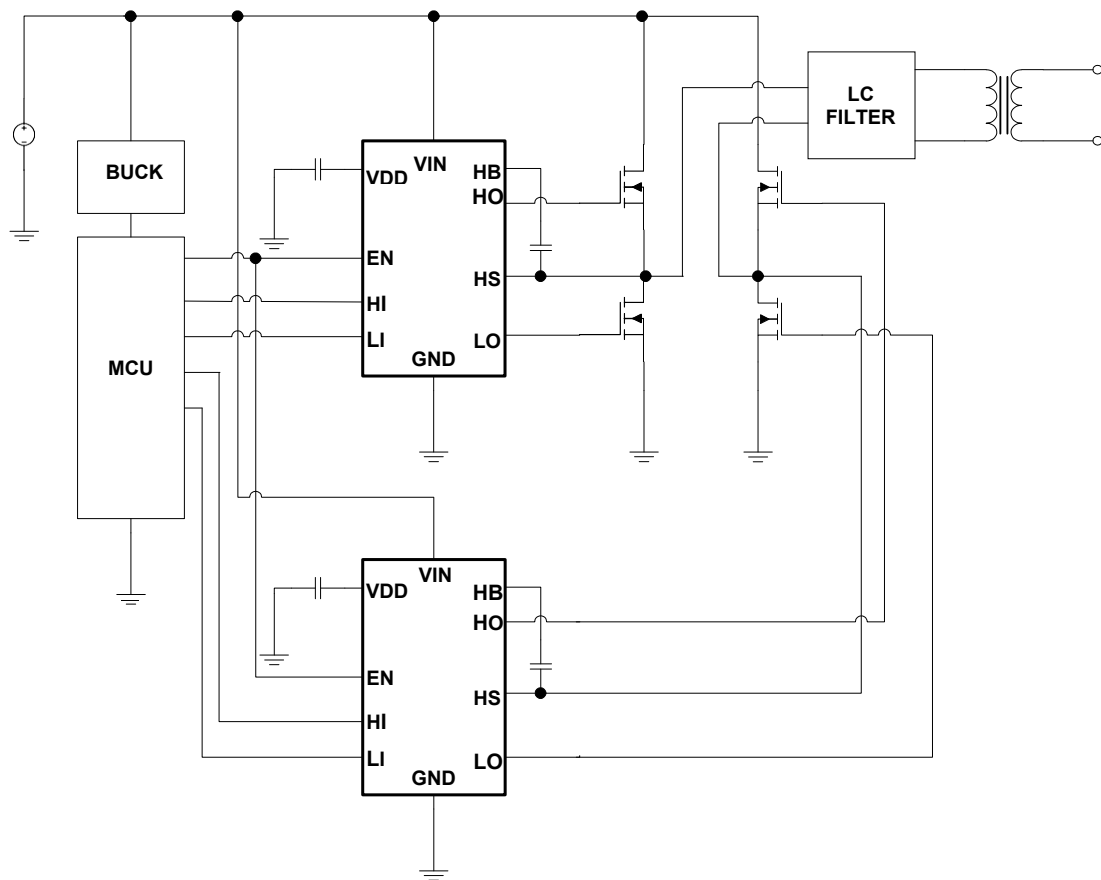
◆ 全桥马达驱动电路 (Full-Bridge Motor Driver)



◆ 2. 高压同步降压转换器 (High Voltage Synchronous-Buck Converter)



◆ 电源逆变器 (DC/AC)



◆ 3 相无传感器无刷直流马达 (Sensorless BLDC Motor) 驱动器

