PRODUCT OVERVIEW

The SS8812T provides a dual channel integrated motor drive solution for printers and other motor integration applications. The SS8812T has two H-bridge drives, each providing a maximum output current of 1.6A (at 24V and Ta = 25°C with appropriate cooling conditions), which can drive two brush DC motors, or a bipolar stepper motor, or a solenoid or other inductive load. Bipolar stepper motors can be operated in full step, 2 segment, 4 segment, or high segment with software.

The power output module of each H-bridge of the SS8812T is composed of N-type power MOSFETs. Each H-bridge contains a rectifier circuit and a current limiting circuit. Simple parallel digital control interface, attenuation mode can be selected for fast attenuation, slow attenuation and hybrid attenuation.

The SS8812T provides a low-power sleep mode to turn off the internal circuitry to achieve very low static current. This sleep mode is achieved by setting the nSLEEP pin. The internal shut-off function contains overcurrent protection, short circuit protection, undervoltage lock protection and overtemperature protection, and provides a fault output pin nFAULT pin.

The SS8812T is available in an ETSSOP28 package with a bare pad for improved heat dissipation and is lead-free with 100% wuxi plating on the pin frame.

APPLICATIONS

- POS printer
- Security camera
- Office automation equipment
- Game consoles
- Robots

FEATURES

- Dual channel H-bridge current control motor driver
  - Single or two brushed DC motors
  -- One stepper motor
- PWM control interface
- Current control is optional at fixed frequency
  - 2 bits current control, providing 4 current steps
- Metal oxide semiconductor field effect transistor (MOSFET) with low on-impedance
  -24V, Ta = 25°C to achieve a maximum drive current of 1.6A
  -24V, Ta= 25°C R_{DS}(on) is 720mΩ (typical value HS + LS)
- 8.2~36V operating voltage range
- Sleep mode Low current
- 3.3V reference voltage built in
- Surface mount package with heat sink
- Protective features
  - Overcurrent Protection (OCP)
  - Thermal shutoff (TSD)
  - Undervoltage Block (UVLO)
  - Fault display Pin (nFAULT)

PRODUCT INFORMATION

Product model number	Encapsulation form	Remarks
SS8812T-ET-TP	ETSSOP28	Has short-circuit protection self-recovery function

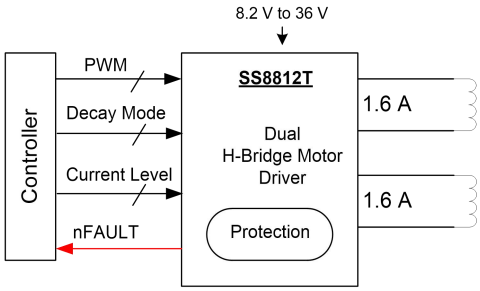
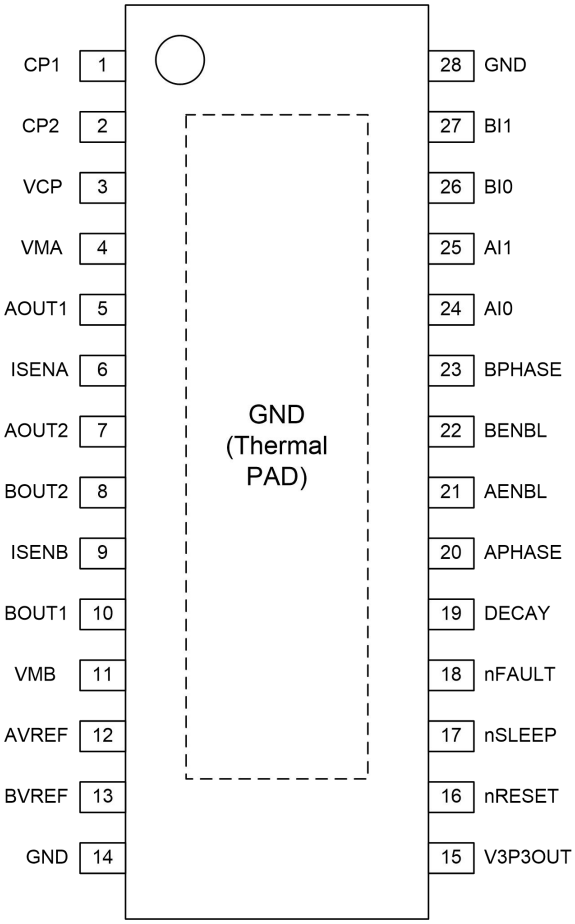


Figure 1. Schematic diagram of typical application

PIN CONFIGURATION AND FUNCTION



PIN LIST

Pin names	Pin serial number	Pin description	External component or connection description
Power and ground			
GND	14, 28	chip-wise	All GND pins and chip bare pads are connected to the power source.
PPAD	-	chip-wise	
VMA	4	Channel A H-bridge power supply	Motor power supply, all VMx pins need to be connected together.
VMB	11	B channel H-bridge power supply	
V3P3OUT	15	3.3V rectified output	The external 0.47uF capacitor is connected to the ground for filtering, which can supply power to the reference voltage xVREF.
CP1	1	Charge pump capacitor pin 1	Connect the external 0.01uF / 50V capacitor between CP1 and CP2
CP2	2	Charge pump capacitor pin 2	
VCP	3	High side grid drive	Add 0.1uF capacitor to VM.
Controls			
AENBL	21	Channel A H-bridge Enable input	Input logic high, channel A working.
APHASE	20	Channel A H-bridge direction control input	Input logic high level, AOUT1 output H, AOUT2 output L.
AI0	24	Channel A H-bridge current set input 0	AI1,AI0=0,0→100%, AI1,AI0=0,1→71%, AI1,AI0=1,0→38%, AI1,AI0=1,1→0%
AI1	25	Channel A H-bridge current setup input 1	
BENBL	22	B Channel H-bridge Enable input	Input logic high, channel B working.
BPHASE	23	B Channel H-bridge direction control input	Input logic high level, BOUT1 output H, BOUT2 output L.
BI0	26	B Channel H-bridge current set input 0	BI1,BI0=0,0→100%, BI1,BI0=0,1→71%, BI1,BI0=1,0→38%, BI1,BI0=1,1→0%
BI1	27	B Channel H-bridge current setup input 1	
nSLEEP	17	Sleep mode input	For logic high power, the chip works normally; If the logic level is low, the chip enters the low-power sleep mode
DECAY	19	Attenuation mode select input	Low = Slow attenuation; Hanging = mixed attenuation; High = fast attenuation.
nRESET	16	Reset input	High level, the chip is working; Low level, the chip enters the reset state.
AVREF	12	Channel A H-bridge reference voltage input	Reference voltage input, to set the drive current. An external programmable DAC can be connected for high subdivision or to a fixed reference voltage (e.g. V3P3OUT).
BVREF	13	B channel H-bridge reference voltage input	
Status			

nFAULT	18	Error status Output	Open drain output, if used requires an external pull-up resistor. When overtemperature or overcurrent occurs, the output is low.
Output			
ISENA	6	Channel A H Bridge ground/Isense	Channel A H bridge detects the current end, connect the detection current resistor to the ground, if no current limiting is required, ground directly.
ISENB	9	B Aisle H Bridge ground/Isense	Channel B H bridge detects the current end, connect the detection current resistor to the ground, if there is no need to limit the current, ground directly.
AOUT1	5	Channel A H-bridge output 1	Channel A H-bridge output, define the forward current as AOUT1 → AOUT2
AOUT2	7	Channel A H-bridge output 2	
BOUT1	10	B channel H-bridge output 1	Channel B H-bridge output, define the forward current as BOUT1 → BOUT2
BOUT2	8	B Channel H-bridge output 2	