



DESCRIPTION

The AD8810 is a low voltage DC motor driver chip specifically designed for low voltage operating systems.

The AD8810 integrated with 4 low-resistance MOS and has forward, reverse, brake and stop functions.

The AD8810 built-in temperature protection function, when the output short circuit occurs, the output current increases instantaneously, the circuit power consumption rises sharply, and the chip temperature rises sharply. When the chip temperature exceeds the maximum temperature point set by the internal temperature protection circuit, the internal circuit is turned off. The power switch tube cuts off the load current

The AD8810 is available in SOP8 and DFN8(2x2) Packages.

FEATURES

- Operating voltage range: 2.0-6.8V
- Low operating current (typ. 70uA)
- Low standby current (typ. 0.1uA)
- Continuous operating current 1.0A
- Thermal protection with integrated hysteresis
- Available in SOP8 and DFN8 (2x2) Packages

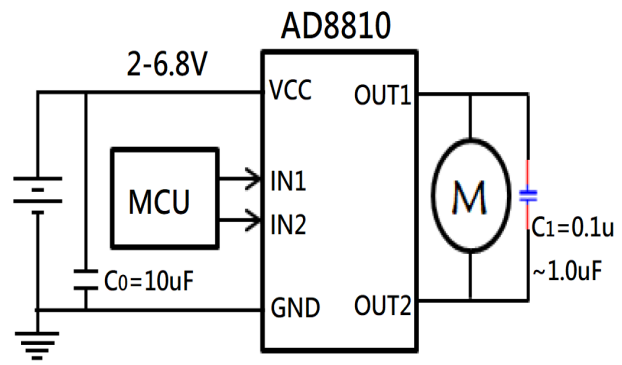
APPLICATION

- Consumer products
- Water and gas meter products
- Toys
- Electric toothbrush

ORDERING INFORMATION

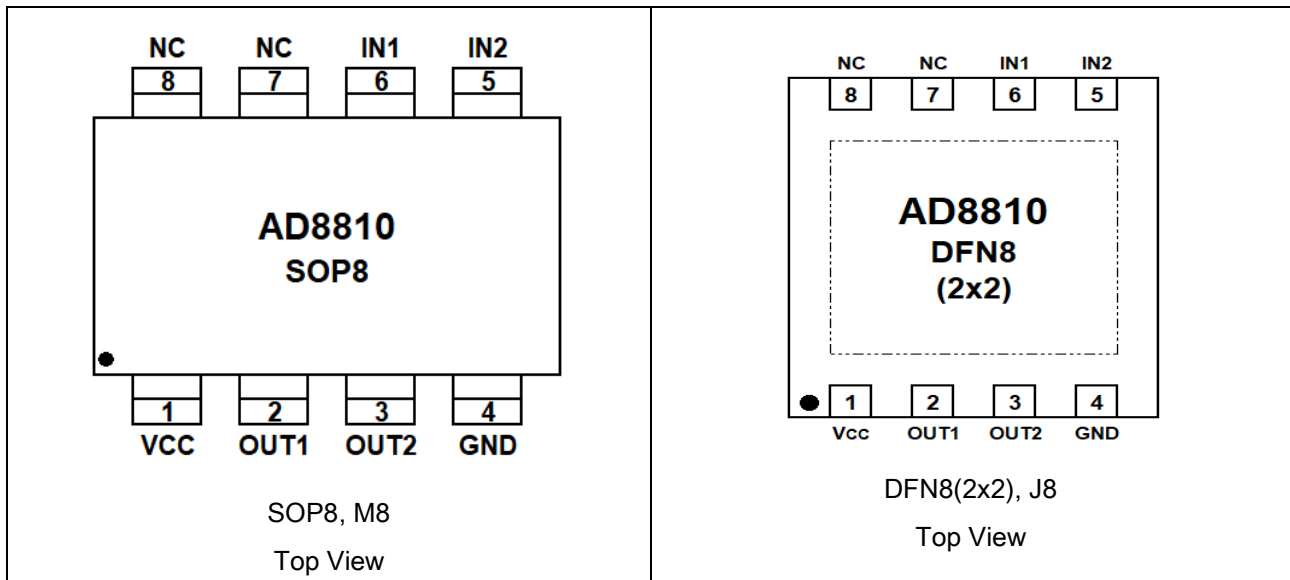
Package Type	Part Number	
SOP8 SPQ: 4,000psc/Reel	M8	AD8810M8R
		AD8810M8VR
DFN8(2x2) SPQ: 3,000psc/Reel	J8	AD8810J8R
		AD8810J8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

TYPICAL APPLICATION





PIN DESCRIPTION



Pin #	Symbol	Type	Function
1	VCC	VCC	Power input pin, connecting 1uF or larger between VCC and ground
2	OUT1	O	Output 1, directly connect 0.1uF or larger capacitors to OUT1 and OUT2
3	OUT2	O	Output 2, directly connect 0.1uF or larger capacitors to OUT1 and OUT2
4	GND	P	Ground
5	IN2	I	Logic input 2
6	IN1	I	Logic input 1
7	NC	NC	NC
8	NC	NC	NC



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise specified.

Parameter	Symbol	Min	Max	Unit
Supply Voltage	VCC	-0.30	7	V
Input Voltage	IN1, IN2	-0.30	7	V
ESD (HBM)	VCC, IN1, IN2, OUT1, OUT2	-	2	KV
Temperature-Saving	T _J	-40	150	°C
Storage Temperature	T _{stg}	-40	150	°C
Thermal Resistance	SOP8	-	61	°C/W
	DFN8(2x2)	-	130	

RECOMMENDED OPERATING RANGE

Supply voltage	VCC	2	6.80	V
Input voltage	IN1, IN2	2	6.80	V
Output Current	IOUT1, IOUT2	0	1	A

Stress beyond above listed “Absolute Maximum Ratings” may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

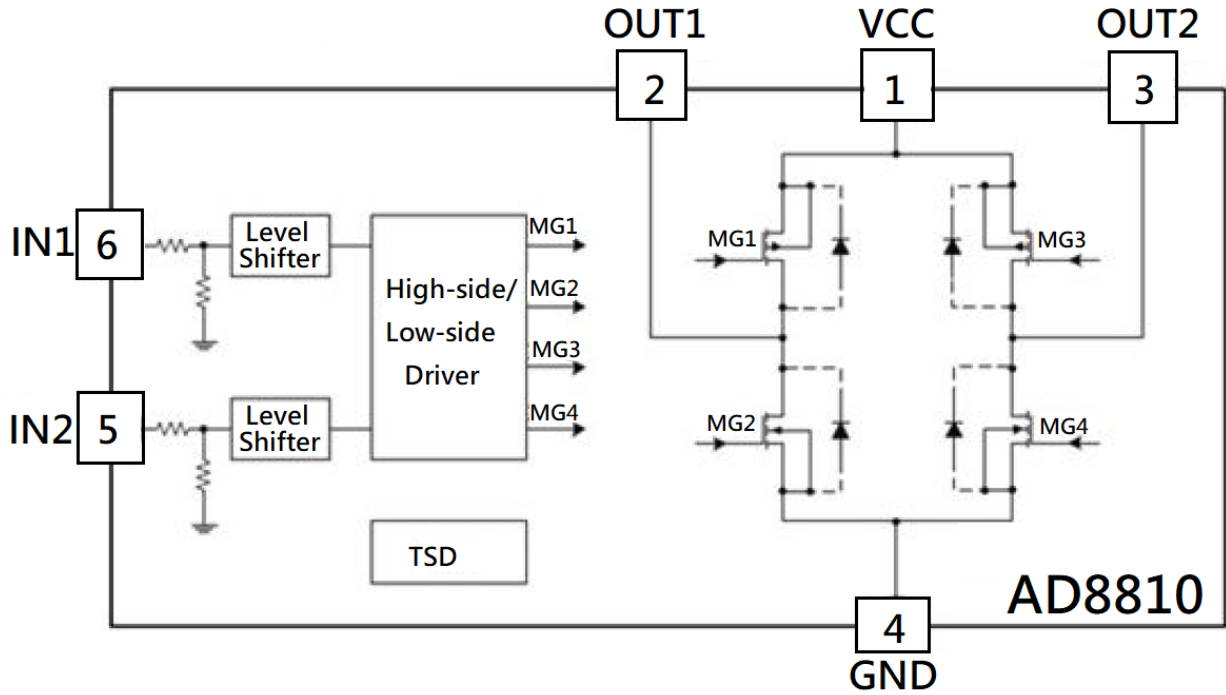
ELECTRICAL CHARACTERISTICS

V_{CC}=3.60V, T_A=25°C, R_{LOAD}=20, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
MOTOR DRIVER OUTPUT						
HS + LS FETs On-Resistance	R _{DSON}	I _{OUT} =100mA	-	0.70	0.84	Ω
		I _{OUT} =400mA	-	0.72	0.86	
CONTROL INPUTS (IN1 / IN2)						
Input Logic High Voltage	V _{INH}		1.20	-	V _{CC}	V
Input Logic Low Voltage	V _{INL}		0	-	0.70	V
Input Logic High Current	I _{INH}		-	25	50	uA
Input Logic Low Current	I _{INL}		-	0	1	
Pulldown Resistance	R _{PD}		-	1.50	2.50	MΩ
OPERATING CURRENT						
Circuit Shutdown Current	I _{CC_OFF}	IN1=IN2=0	-	0	1	uA
Circuit Operating Current	I _{CC_ON}	IN1=IN2=3.6V, IN1=3.6V, IN2=0, IN1=0, IN2=3.6V	-	65	100	
PROTECTION CIRCUITS						
Thermal Shutdown Temperature	T _{TSD}		-	160	-	°C
Thermal Shutdown Hysteresis	T _{HYS}		-	25	-	°C



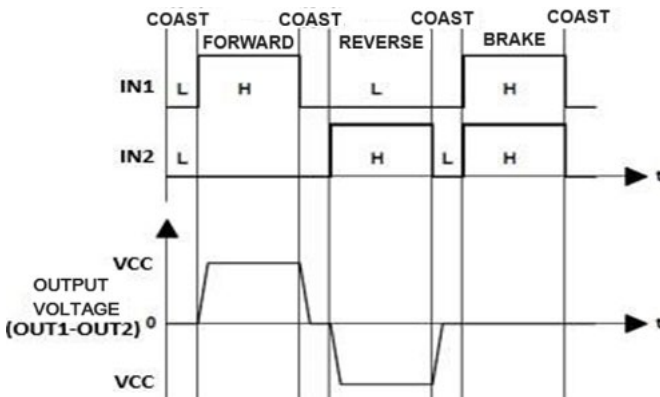
BLOCK DIAGRAM



Input-Output Logical Tables

IN1	IN2	OUT1	OUT2	Function	Current
L	L	Hi-Z	Hi-Z	Coast	I_{CC_OFF}
H	L	H	L	Forward	I_{CC_ON}
L	H	L	H	Reverse	I_{CC_ON}
H	H	L	L	Brake	I_{CC_ON}

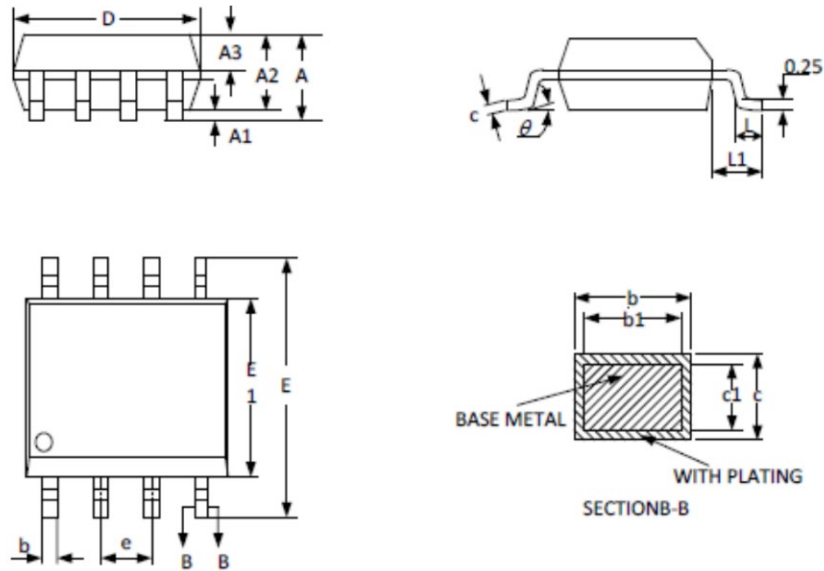
Input-Output Waveforms





PACKAGE INFORMATION

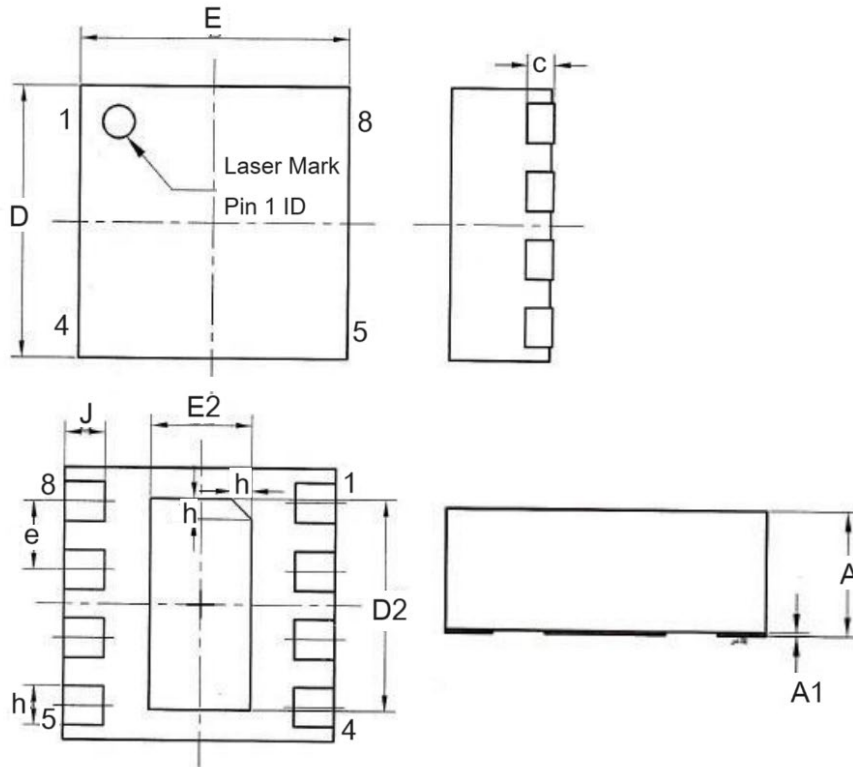
Dimension in SOP8 (Unit: mm)



Symbol	Min.	Max.
A	-	1.770
A1	0.080	0.280
A2	1.200	1.600
A3	0.550	0.750
b	0.390	0.480
b1	0.380	0.430
c	0.210	0.260
c1	0.190	0.210
D	4.700	5.100
E	5.800	6.200
E1	3.700	4.100
e	1.270 BSC.	
L	0.500	0.800
L1	1.050 BSC.	
θ	0°	8°



Dimension in DFN8(2x2) (Unit: mm)



Symbol	Min.	Max.
A	0.700	0.800
A1	0.000	0.050
b	0.180	0.300
c	0.200 REF.	
D	1.950	2.050
D2	1.500	1.600
E	1.950	2.050
E2	0.700	0.800
e	0.500 BSC.	
L	0.250	0.350
h	0.100	0.200



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