



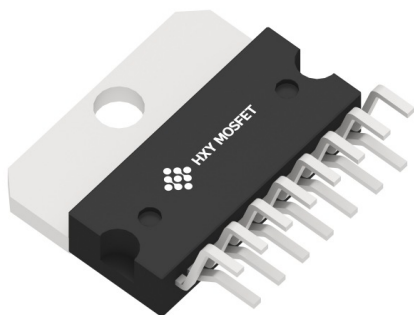
## 一、概述

L298N是一款高压大电流双路全桥驱动器电路。该电路可用标准TTL 电平驱动，用于继电器、电磁阀、直流电机。步进电机等感性负载的驱动控制。

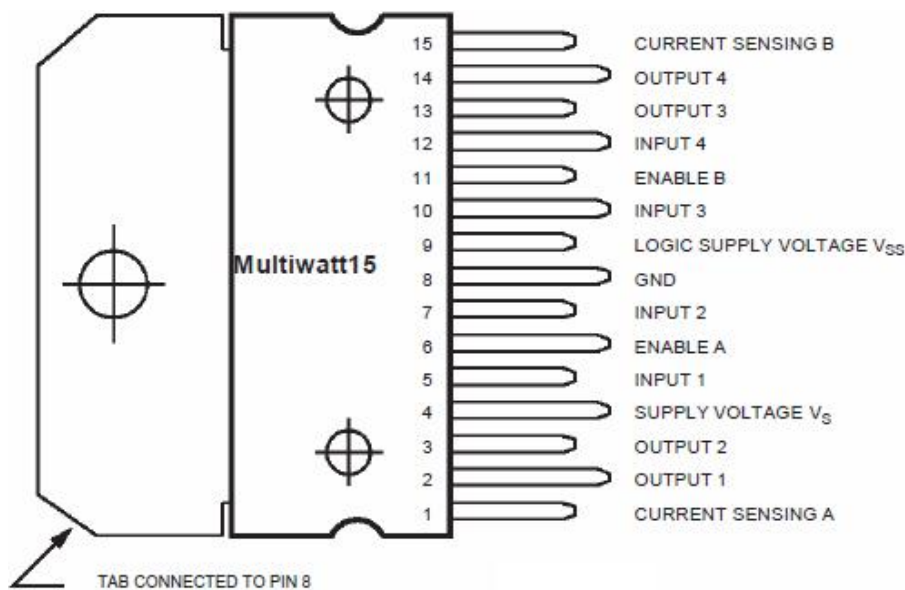
## 二、特点

- 1、 工作电压高达 46V
- 2、 总直流电流高达 3A
- 3、 低饱和压降
- 4、 低电平高至 1.5V，抗干扰能力强
- 5、 逻辑电源与驱动电源相互独立

L298N采用 15 线 Multiwatt(ZIP-15)功率封装。



L298N外观

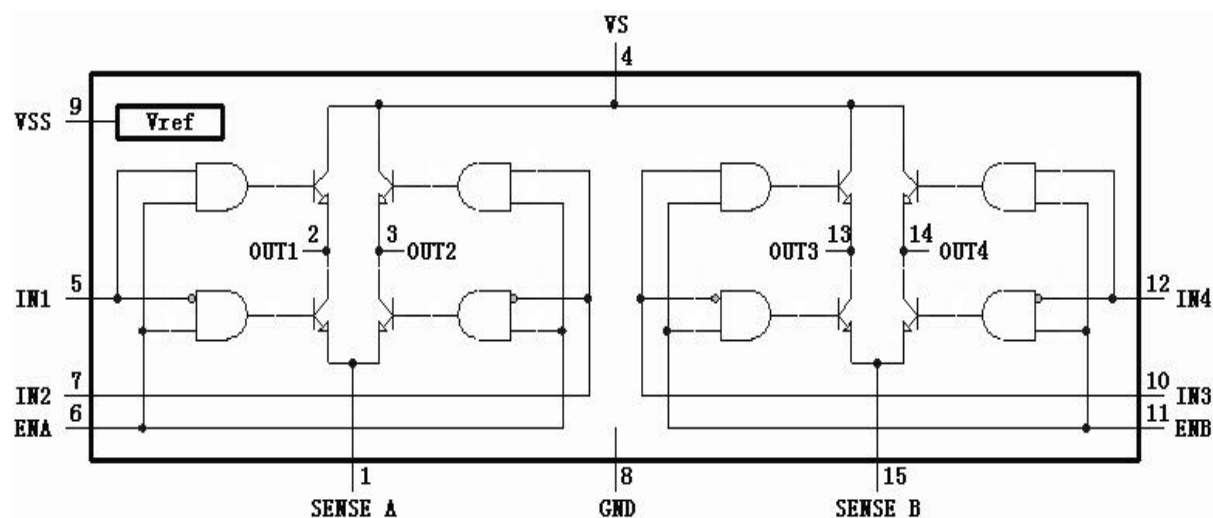


MW.15	Name	Function
1;15	Sense A; Sense B	Between this pin and ground is connected the sense resistor to control the current of the load.
2;3	Out 1; Out 2	Outputs of the Bridge A; the current that flows through the load connected between these two pins is monitored at pin 1.
4	$V_S$	Supply Voltage for the Power Output Stages. A non-inductive 100nF capacitor must be connected between this pin and ground.
5;7	Input 1; Input 2	TTL Compatible Inputs of the Bridge A.
6;11	Enable A; Enable B	TTL Compatible Enable Input: the L state disables the bridge A (enable A) and/or the bridge B (enable B).
8	GND	Ground.
9	$V_{SS}$	Supply Voltage for the Logic Blocks. A100nF capacitor must be connected between this pin and ground.
10; 12	Input 3; Input 4	TTL Compatible Inputs of the Bridge B.
13; 14	Out 3; Out 4	Outputs of the Bridge B. The current that flows through the load connected between these two pins is monitored at pin 15.
—	N.C.	Not Connected

## L298N管脚及定义



#### 四、 功能框图



L298N功能框图

#### 五、 电参数表

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Supply Voltage (pin 4)	Operative Condition	$V_{IH} + 2.5$		46	V
$V_{SS}$	Logic Supply Voltage (pin 9)		4.5	5	7	V
$I_S$	Quiescent Supply Current (pin 4)	$V_{en} = H; I_L = 0$ $V_i = L$ $V_i = H$		13 50	22 70	mA mA
$I_{SS}$	Quiescent Current from $V_{SS}$ (pin 9)	$V_{en} = H; I_L = 0$ $V_i = L$ $V_i = H$ $V_{en} = L$ $V_i = X$		24 7	36 12	mA mA
$V_{iL}$	Input Low Voltage (pins 5, 7, 10, 12)		-0.3		1.5	V
$V_{iH}$	Input High Voltage (pins 5, 7, 10, 12)		2.3		$V_{SS}$	V
$I_{iL}$	Low Voltage Input Current (pins 5, 7, 10, 12)	$V_i = L$			-10	$\mu A$
$I_{iH}$	High Voltage Input Current (pins 5, 7, 10, 12)	$V_i = H \leq V_{SS} - 0.6V$		30	100	$\mu A$
$V_{en} = L$	Enable Low Voltage (pins 6, 11)		-0.3		1.5	V
$V_{en} = H$	Enable High Voltage (pins 6, 11)		2.3		$V_{SS}$	V
$I_{en} = L$	Low Voltage Enable Current (pins 6, 11)	$V_{en} = L$			-10	$\mu A$
$I_{en} = H$	High Voltage Enable Current (pins 6, 11)	$V_{en} = H \leq V_{SS} - 0.6V$		30	100	$\mu A$
$V_{CEsat(H)}$	Source Saturation Voltage	$I_L = 1A$ $I_L = 2A$	0.95	1.35 2	1.7 2.7	V V
$V_{CEsat(L)}$	Sink Saturation Voltage	$I_L = 1A$ $I_L = 2A$	0.85	1.2 1.7	1.6 2.3	V V
$V_{CEsat}$	Total Drop	$I_L = 1A$ $I_L = 2A$	1.80		3.2 4.9	V V
$V_{sens}$	Sensing Voltage (pins 1, 15)		-1		2	V



## 六、应用指南

### 1、功率输出

L298N包含两组功率输出，每组输出均为全桥方式，均可驱动共模或差模方式的感性负载，由输入信号的组合方式控制。外接的电流检测电阻 RSA、RSB 可检测负载电流并提供给控制系统进行判断、分析。

### 2、输入控制

所有的输入控制端均与 TTL 电平兼容。

### 3、电源去耦

建议 VSS 端和 VS 端对地均连接以 100nF 电容，且尽可能靠近地端。电流检测电阻也应尽量靠近地端，以提高检测精度。关断和开启前均应使 EN 端处于 L 状态。

### 4、输出保护

应选用快速二极管作为驱动感性负载时的输出保护，要求  $I = 2\text{ A}$  时， $V_F \leq 1.2\text{ V}$ ， $t_{rr} \leq 200\text{ ns}$ 。

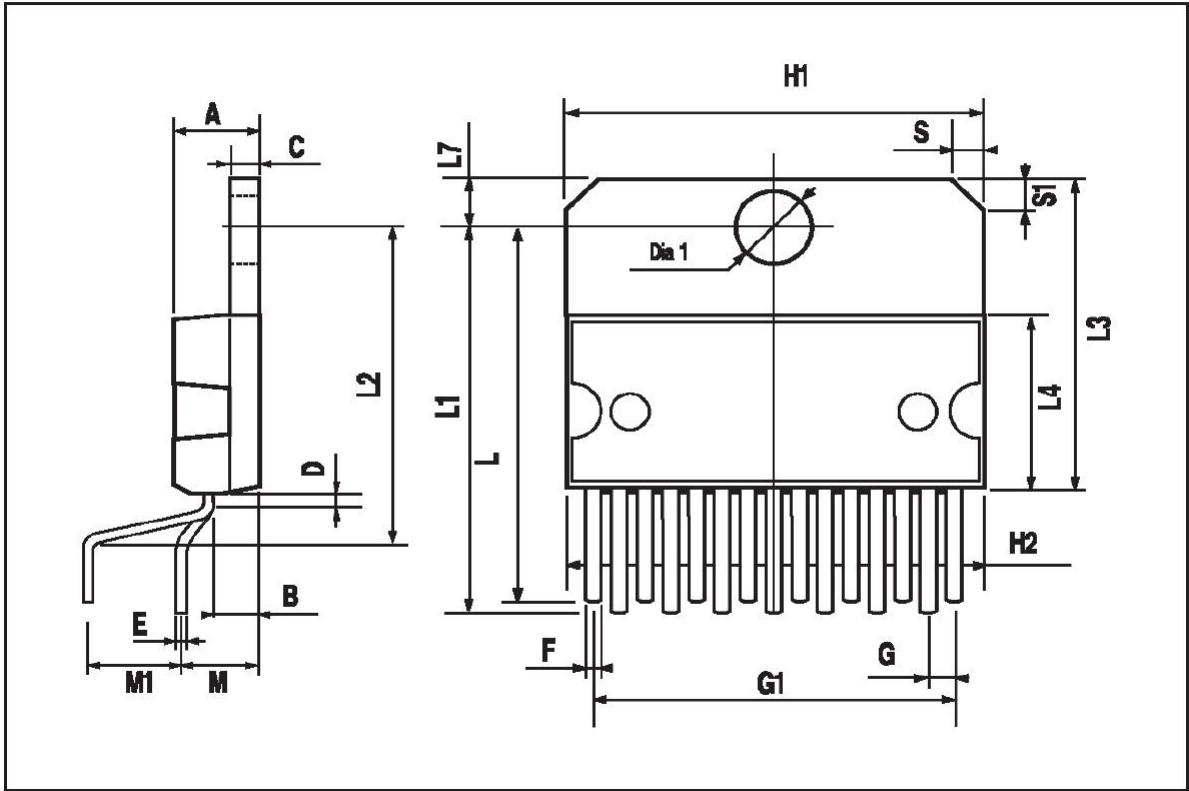
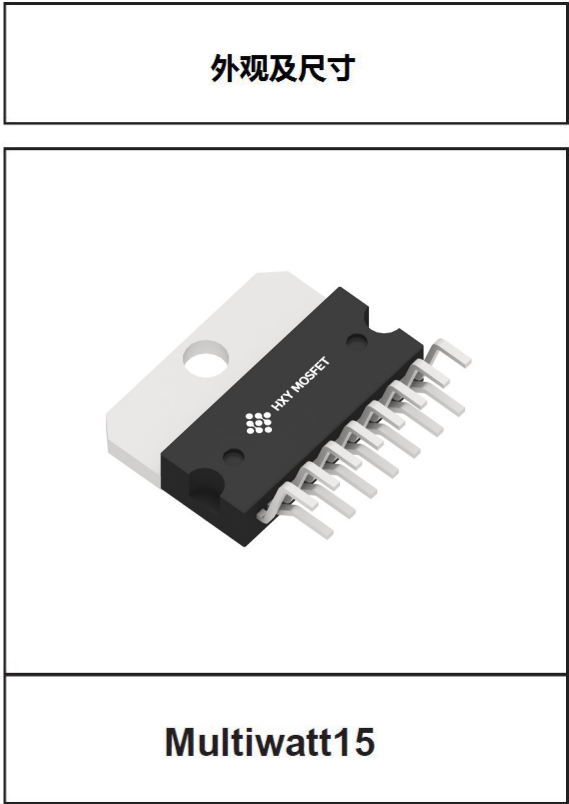
### 5、并联使用

当驱动电流大于 2A 时，可用两组并联进行电流扩展。



七、 外观尺寸

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			5			0.197
B			2.65			0.104
C			1.6			0.063
D		1			0.039	
E	0.49		0.55	0.019		0.022
F	0.66		0.75	0.026		0.030
G	1.02	1.27	1.52	0.040	0.050	0.060
G1	17.53	17.78	18.03	0.690	0.700	0.710
H1	19.6			0.772		
H2			20.2			0.795
L	21.9	22.2	22.5	0.862	0.874	0.886
L1	21.7	22.1	22.5	0.854	0.870	0.886
L2	17.65		18.1	0.695		0.713
L3	17.25	17.5	17.75	0.679	0.689	0.699
L4	10.3	10.7	10.9	0.406	0.421	0.429
L7	2.65		2.9	0.104		0.114
M	4.25	4.55	4.85	0.167	0.179	0.191
M1	4.63	5.08	5.53	0.182	0.200	0.218
S	1.9		2.6	0.075		0.102
S1	1.9		2.6	0.075		0.102
Dia1	3.65		3.85	0.144		0.152





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