LB1268

3-Channel High-Current Low-Saturation Driver

FEATURES

- 3-Channel Magnet Driver.
- High Current (2.0A Max.) and Low Saturation Voltage (1.5V).
- Parallel Operation Capability (Channel 1+2).
- On-Chip Spark Killer Diodes.

APPLICATIONS

- Stepping Motor Driver
- Relay Driver.
- LED Driver.
- Solenoid Driver.

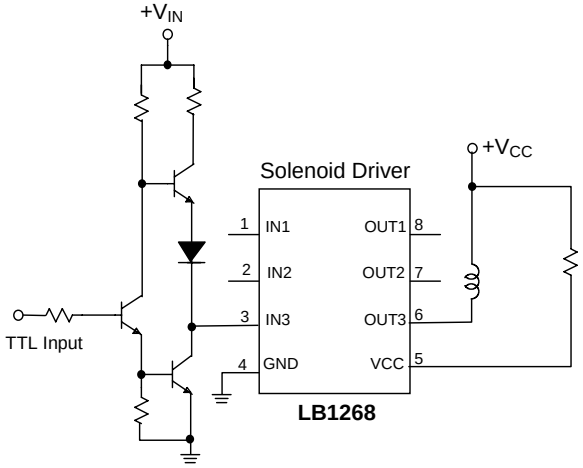
DESCRIPTION

The LB1268 is a 3-channel, low saturation voltage and high current source driver ideally for switching high-power loads from logical level TTL, or CMOS.

Both ch1 and ch2 can manage loads up to 1.0A to ch1 and ch2, ch3 can switch up to 2.0A respectively.

The LB1268 is fully compatible with LB1268 from Sanyo Company and available in the 8-pin DIP and SOP-8 package.

TYPICAL APPLICATION CIRCUIT



■ ORDERING INFORMATION

LB1268XXXX

- PACKING TYPE
  - TB: TUBE
  - TR: Tape & Reel
- PACKAGE TYPE
  - N: DIP-8
  - S: SOP-8
- C: COMMERCIAL
  - P: LEAD FREE COMMERCIAL
  - G:GREEN PACKAGE

Example: LB1268CNTB

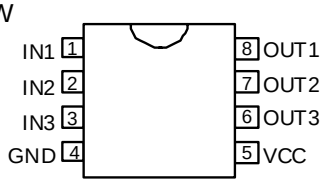
→ in DIP-8 Package & Tube Packing Type

LB1268PNTB

→ in Lead Free DIP-8 Package & Tube Packing Type

PIN CONFIGURATION

DIP-8/SOP-8
TOP VIEW



■ ABSOLUTE MAXIMUM RATINGS

Supply Voltage (V_{CC}) 8V

Output Supply Voltage 10.0V

Input Supply Voltage 12.0V

Output Current

I_{OUT1} T_{ON}≤50mS, Duty=20%, Solenoid Drive Channel (ch1, 2) 1A

I_{OUT2} T_{ON}≤50mS, Duty=5%, Motor Drive Channel (ch3) 2.5A

Spark Killer Diode Forward Current

I_{FSM1} T≤5mS, Duty=5%, Solenoid Drive Channel (ch1, 2) 1A

I_{FSM2} T≤5mS, Duty=5%, Motor Drive Channel (ch3) 2.5A

V_{CC} Instantaneous Flow-out Current (T≤5mS, Duty=5%) 3A

GND Flow-out Current (T≤50mS, Duty=20%) 3A

Power Dissipation 785mW

Operating Temperature Range ..... –40°C to 85°C

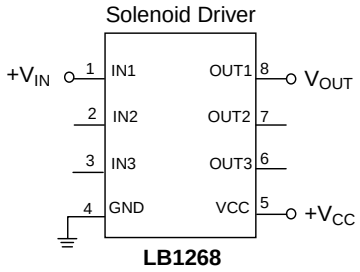
Maximum Junction Temperature ..... 125°C

Storage Temperature Range ..... –65°C to 150°C

Lead Temperature (Soldering, 10 sec) ..... 260°C

Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

TEST CIRCUIT



ELECTRICAL CHARACTERISTICS (T_A=25°C) (Note1)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{IN}=4.5V, V_{CC}=5.0V, I_{OUT}=500mA (ch1, 2)	V_{OH1}		0.44	0.65	V
	V_{IN}=6.0V, V_{CC}=7.0V, I_{OUT}=1000mA (ch1, 2)	V_{OH2}		0.88	1.4	V
	V_{IN}=6.0V, V_{CC}=7.0V, I_{OUT}=1600mA (ch1, 2 parallel)	V_{OH3}			1.4	V
	V_{IN}=3.0V, V_{CC}=3.0V, I_{OUT}=300mA (ch3)	V_{OH4}		0.19	0.25	V
	V_{IN}=4.5V, V_{CC}=5.0V, I_{OUT}=1000mA (ch3)	V_{OH5}		0.5	0.7	V
	V_{IN}=6.0V, V_{CC}=7.0V, I_{OUT}=2000mA (ch3)	V_{OH6}		1.0	1.5	V
Input Current	V_{IN}=6.0V (ch1, 2)	I_{IN1}			1.0	mA
	V_{IN}=6.0V (ch3)	I_{IN2}			2.0	mA
Power Source + Output Leakage Current	V_{IN}=0.5V, V_{OUT}=V_{CC}=6.0V	I_{OFF}			30	μA
Spark Killer Diode Forward Voltage	I_F=1000mA (ch1, 2)	V_{F1}			3.0	V
	I_F=2000mA (ch3)	V_{F2}			3.0	V
Output Sustain Voltage	I_{OUT}=400mA	$V_{O(SUS)}$	10			V

Note 1: Specifications are production tested at T_A=25°C. Specifications over the -40°C to 85°C operating temperature range are assured by design, characterization and correlation with Statistical Quality Controls (SQC).

TYPICAL PERFORMANCE CHARACTERISTICS

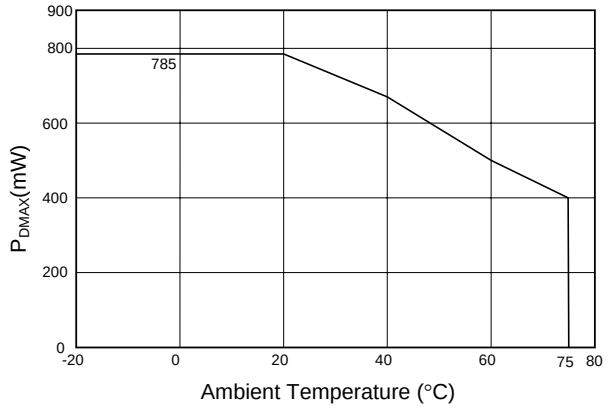
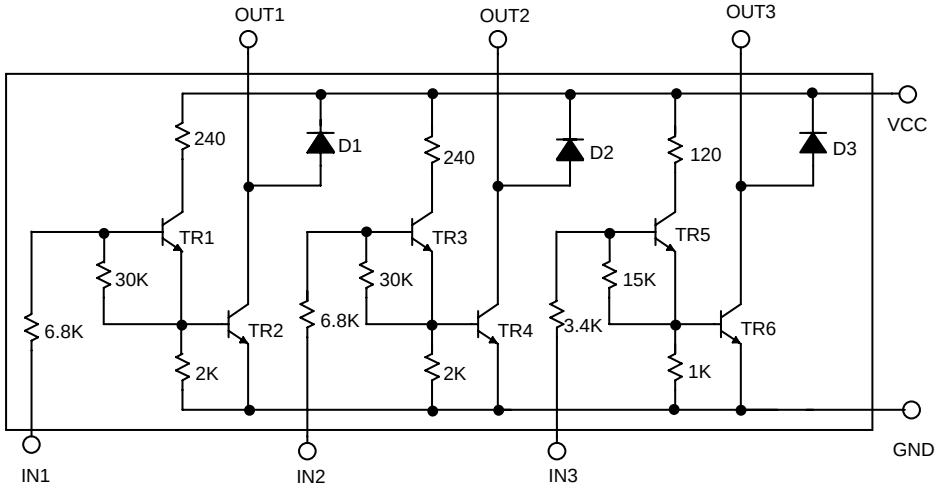


Fig. 1 Allowable Power Dissipation vs Temperature

BLOCK DIAGRAM



PIN DESCRIPTIONS

PIN 1~3: IN1~IN3 - Control signal input pin.

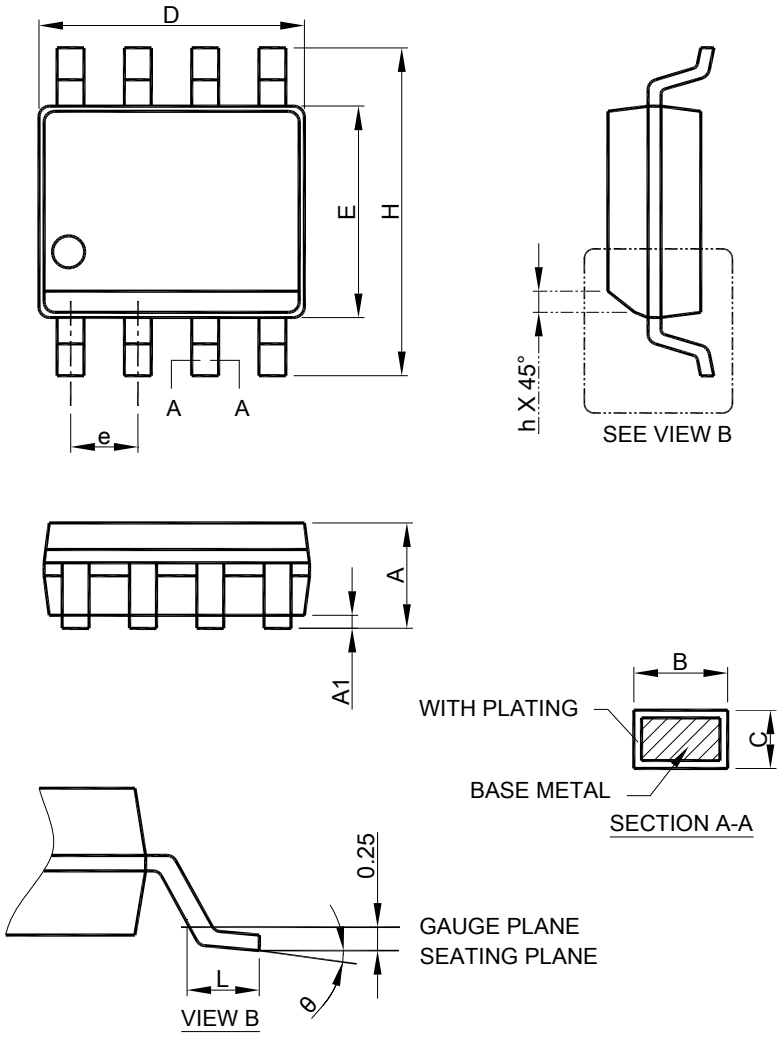
PIN 4: GND - Power ground.

PIN 5: VCC - The output pin (Cathode) of freewheeling diode.

PIN 6~8: OUT1~3 - Each of the pins may individually sink load current from some controlled circuits.

■ PHYSICAL DIMENSIONS (unit: mm)

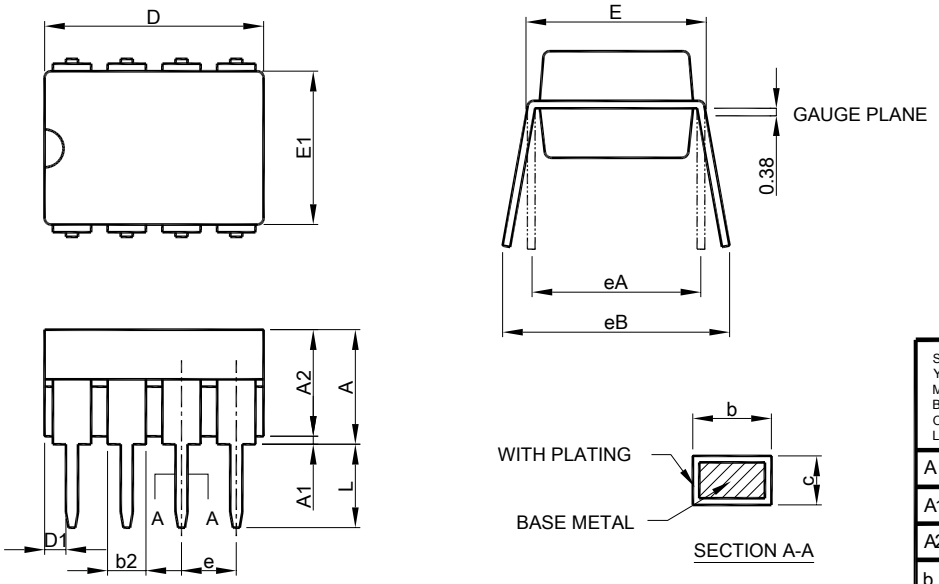
- **SOP-8**



SYMBOL	SOP-8	
	MILLIMETERS	
	MIN.	MAX.
A	1.35	1.75
A1	0.10	0.25
B	0.33	0.51
C	0.19	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
h	0.25	0.50
L	0.40	1.27
θ	0°	8°

Note: 1. Refer to JEDEC MS-012AA.
2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side .
3. Dimension "E" does not include inter-lead flash or protrusions.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

- **DIP-8**



SYMBOL	DIP-8	
	MILLIMETERS	
	MIN.	MAX.
A		5.33
A1	0.38	
A2	2.92	4.95
b	0.36	0.56
b2	1.14	1.78
c	0.20	0.35
D	9.01	10.16
D1	0.13	
E	7.62	8.26
E1	6.10	7.11
e	2.54 BSC	
eA	7.62 BSC	
eB		10.92
L	2.92	3.81

Note: 1. Refer to JEDEC MS-001BA
2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 10 mil per side .
3. Dimension "D1"and "E1" do not include inter-lead flash or protrusions.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.