



LB1249

Active-Low Input, 8-Unit, High-Current, Low-Saturation Driver

Applications

- 4-phase stepping motor driver of 2 channels.
- Especially suited for X-Y axis plotter printer driver.
- High current, low saturation voltage general-purpose 8-unit driver (relay, LED, lamp solenoid, etc.).

Features

- Low active input type.
- On-chip input protecting diodes.
- High current capacity (400mA) and low saturation voltage (0.5V max).
- On-chip spark killer diodes.
- Wide duty due to Pd of 3W max.

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC1,2}		-0.3 to +7.0	V
Output supply voltage	V _{OUT}		-0.3 to +10.0	V
Input supply voltage	V _{IN}	GND ≤ V _{IN}	V _{DD} -7.0 to V _{DD} +15	V
Output current	I _{OUT}	Per unit	400	mA
Spark killer diode forward current	I _{FSM}	Pulse width ≤ 35ms, duty 5%	400	mA
GND pin current	I _{GND}	Pulse width ≤ 35ms	3.4	A
Instantaneous current drain	I _{CCP}	Pulse width ≤ 35ms, duty 5%	3.2	A
Allowable power dissipation	Pd max		3.0	W
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +125	°C

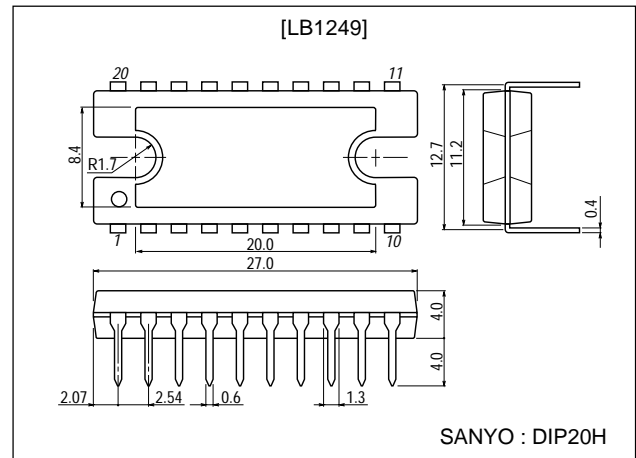
Allowable Operating Ranges at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V _{CC1}		2.3 to 6.0	V
	V _{DD}		2.3 to 6.0	V
Input H-level voltage	V _{IH}	GND ≤ V _{IN} ; I _{OUT} =200mA	V _{DD} -6.0 to V _{DD} -2.3	V
Input L-level voltage	V _{IL}	I _{OUT} ≤ 100μA	V _{DD} -0.7 to V _{DD} +15	V

Package Dimensions

unit:mm

3037A-DIP20H



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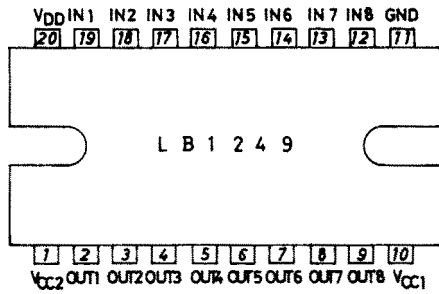
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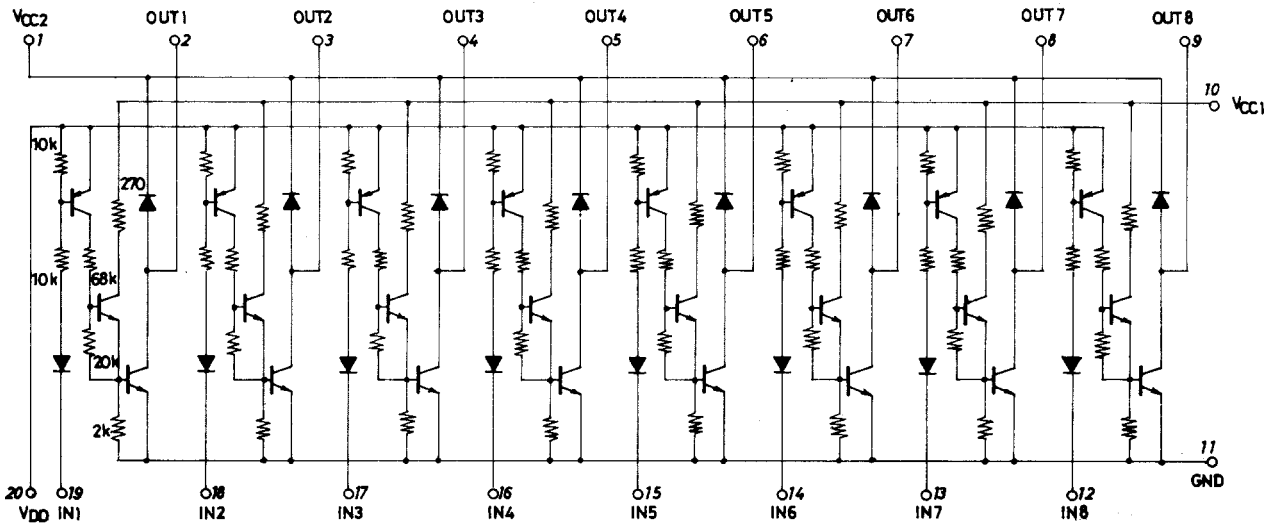
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{DD}=V_{CC1}=V_{CC}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output voltage	V_{OUT1}	$V_{CC}=2.3\text{V}$, $V_{IN}=V_{CC}-2.3\text{V}$, $I_{OUT}=200\text{mA}$			0.4	V
	V_{OUT2}	$V_{CC}=3.5\text{V}$, $V_{IN}=V_{CC}-3.0\text{V}$, $I_{OUT}=200\text{mA}$			0.25	V
	V_{OUT3}	$V_{CC}=6.0\text{V}$, $V_{IN}=V_{CC}-5.5\text{V}$, $I_{OUT}=400\text{mA}$			0.5	V
Output sustain voltage	$V_{O(SUS)}$	$I_{OUT}=400\text{mA}$, $t \leq 10\mu\text{s}$	10			V
Input current	I_{IN}	$V_{IN}=V_{CC}-6.0\text{V}$, $I_{OUT}=0$	-1.0			mA
Supply leakage current	$I_{CC(OFF)}$	$V_{CC}=6.0\text{V}$, $V_{IN}=V_{CC}$			20	μA
Output leakage current	I_{OFF}	$V_{OUT}=V_{CC}=6.0\text{V}$, $V_{IN}=V_{CC}=-0.7\text{V}$			100	μA
Spark killer diode forward voltage	$V_{F(S)}$	$I_{F(S)}=400\text{mA}$			3.0	V
Spark killer diode reverse voltage	$I_{R(S)}$	$V_{OUT}=0\text{V}$, $V_{CC2}=6.0\text{V}$			30	μA

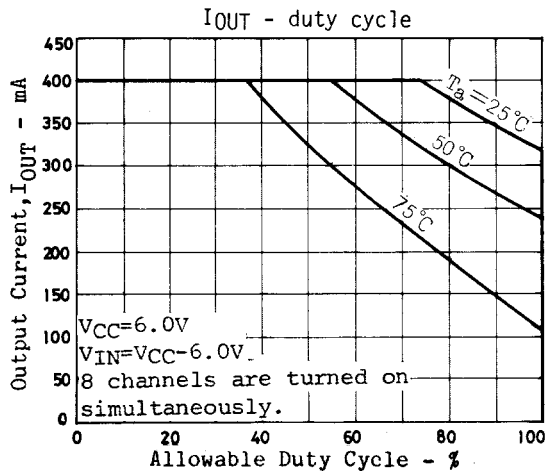
Pin Assignment



Equivalent Circuit



Unit (resistance: Ω)



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