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LB1205M

Monolithic Digital IC

High-Voltage, Large-Current Darlington Driver

Overview

The LB1205M is a 4-unit, high withstand voltage (65V), large-current (1.5A) Darlington driver array with input low active configuration and sync output.

Features

- 4-unit, high withstand voltage design (65V), large-current (1.5A) Darlington driver.
- PNP input type (low active).
- On-chip spark killer diodes.
- On-chip input protection diodes.
- Capable of being driven directly from 5V operated CMOS, TTL.

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{DD\ max}$		7.0	V
	$V_{CC\ max}$		62	V
Output supply voltage	$V_O\ max$		65	V
Input supply voltage	$V_{IN\ max}$	$V_{IN} \geq \text{GND}$	$V_{DD}-7.0$ to $V_{DD}-10.0$	V
Output current	$I_O\ max$		1.5	A
Spark killer diode forward current	I_{FS}		1.5	A
Allowable power dissipation	$P_d\ max$	Independent IC	0.65	W
		Mounted on the recommended PCB	1.7	W
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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Allowable Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage range	V_{DD}		3.5 to 7.0	V
Input "ON" level voltage	V_{INon}	$V_{IN} \geq \text{GND}$, $I_O = 1.0\text{A}$	$V_{DD}-7.0$ to $V_{DD}-2.6$	V
Input "OFF" level voltage	V_{INoff}	$I_O \leq 30\mu\text{A}$	$V_{DD}-0.3$ to $V_{DD}+10.0$	V

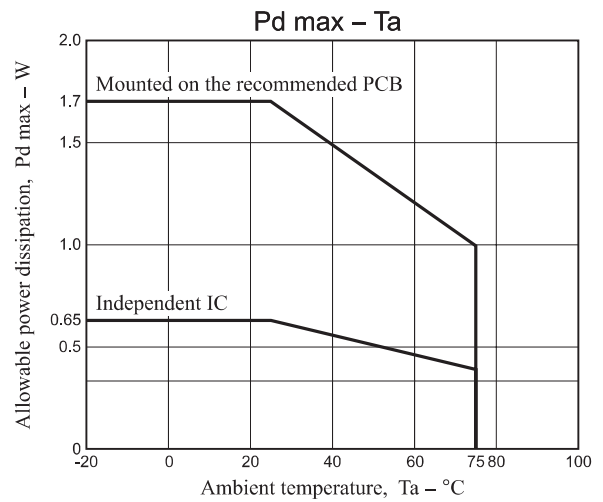
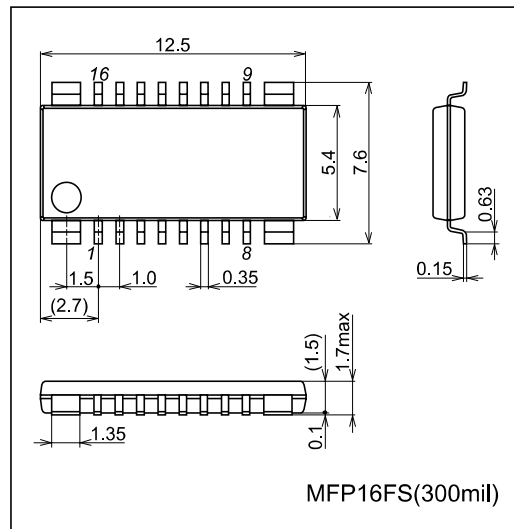
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{DD} = 5\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output saturation voltage	V_{Osat1}	$V_{IN} = V_{DD}-5.0\text{V}$, $I_O = 0.5\text{A}$			1.2	V
	V_{Osat2}	$V_{IN} = V_{DD}-5.0\text{V}$, $I_O = 1.0\text{A}$			1.5	V
	V_{Osat3}	$V_{IN} = V_{DD}-5.0\text{V}$, $I_O = 1.5\text{A}$			2.0	V
Output sustain voltage	V_{Osus}	$I_O = 100\text{mA}$	65			V
Input current	I_{IN}	$V_{DD} = 7.0\text{V}$, $V_{IN} = V_{DD}-7.0\text{V}$			1.0	mA
Spark killer diode forward voltage	V_{FS}	$I_{FS} = 1.5\text{A}$			3.0	V
Spark killer diode reverse current	I_{RS}	$V_{CC} = 62\text{V}$, $V_O = 0\text{V}$			30	μA

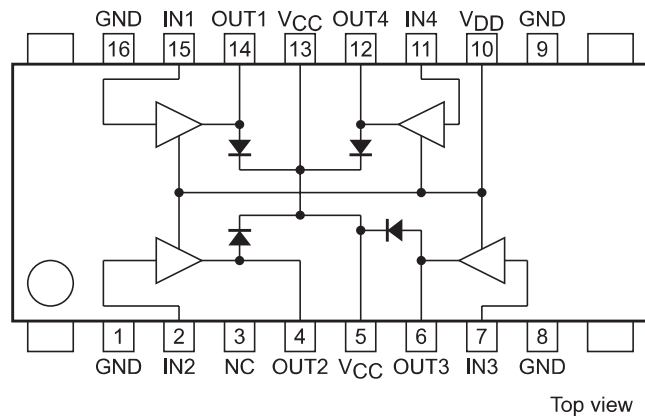
Package Dimensions

unit : mm (typ)

3097B

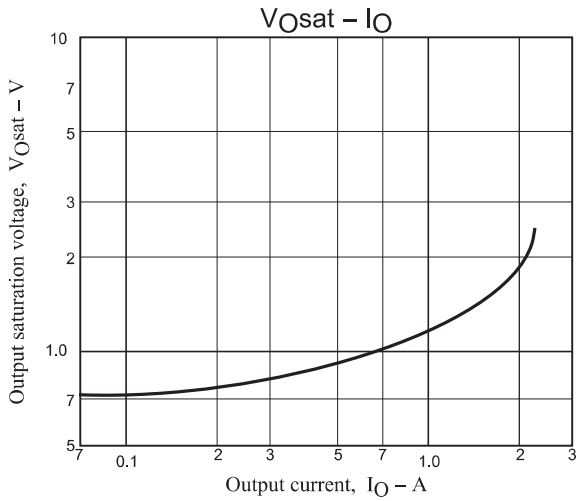
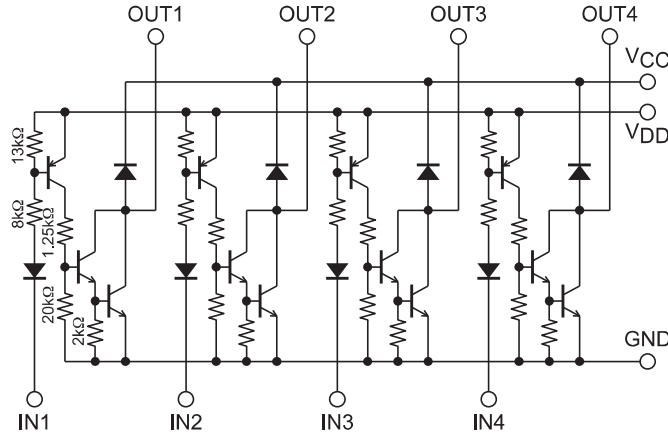


Pin Assignment



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Equivalent Circuit



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