



ON Semiconductor®

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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.

# LB1205M

## 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

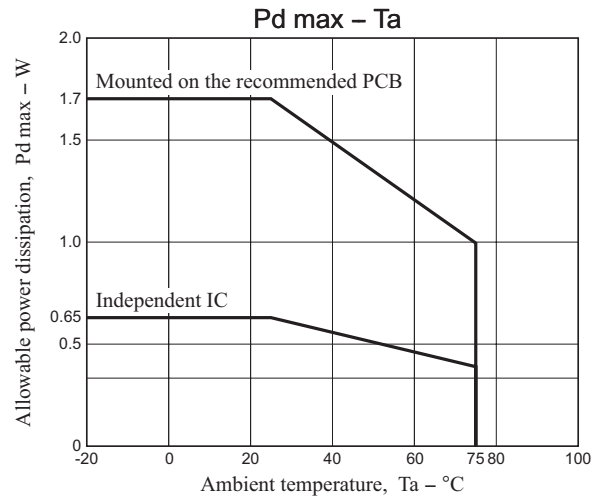
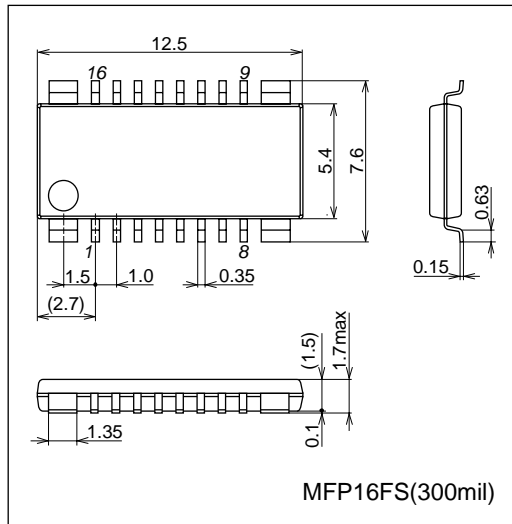
## Electrical Characteristics at $T_a = 25^\circ\text{C}, V_{DD} = 5\text{V}$

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	$\mu\text{A}$

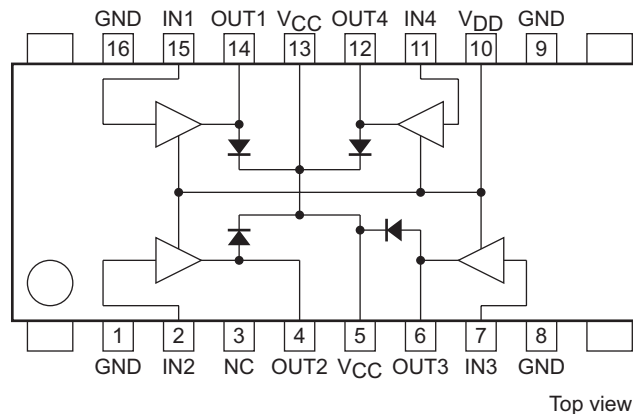
## Package Dimensions

unit : mm (typ)

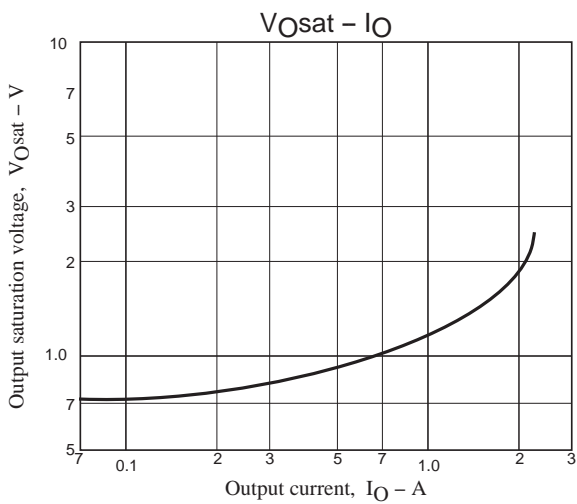
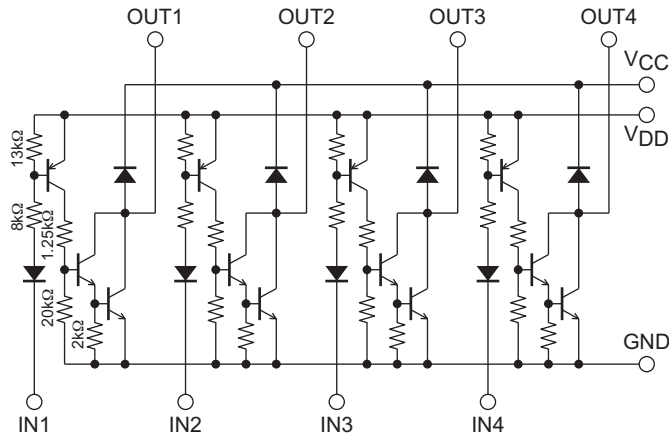
3097B



## Pin Assignment





Equivalent Circuit



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