



**SANYO Semiconductors**

**DATA SHEET**

An ON Semiconductor Company

# 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	$V_{IN} \geq \text{GND}$	7.0	V
	$V_{CC}$ max			
Output supply voltage	$V_O$ max		65	V
Input supply voltage	$V_{IN}$ max		$V_{DD}-7.0$ 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	$^\circ\text{C}$

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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	$V_{INon}$	$V_{IN} \geq GND, I_O = 1.0A$	$V_{DD}-7.0$ to $V_{DD}-2.6$	V
Input "OFF" level voltage	$V_{INoff}$	$I_O \leq 30\mu A$	$V_{DD}-0.3$ to $V_{DD}+10.0$	V

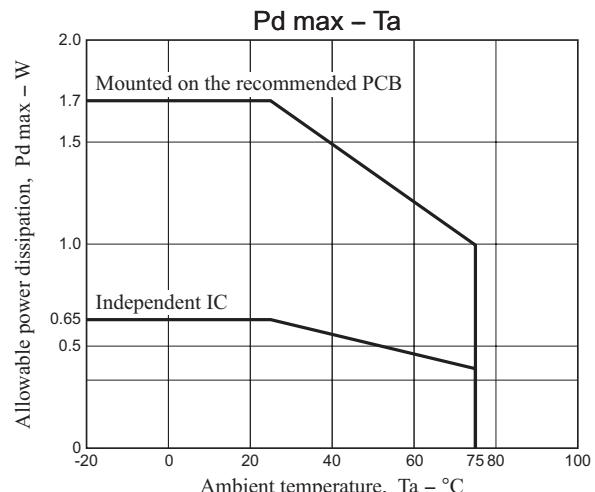
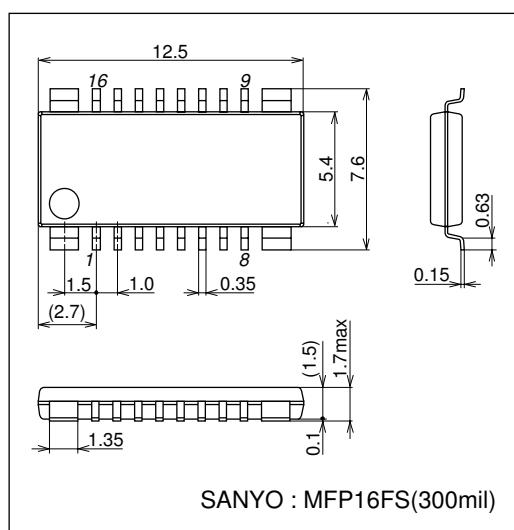
### **Electrical Characteristics** at $T_a = 25^\circ\text{C}$ , $V_{DD} = 5\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output saturation voltage	$V_{O\text{sat}1}$	$V_{IN} = V_{DD} - 5.0V, I_O = 0.5A$			1.2	V
	$V_{O\text{sat}2}$	$V_{IN} = V_{DD} - 5.0V, I_O = 1.0A$			1.5	V
	$V_{O\text{sat}3}$	$V_{IN} = V_{DD} - 5.0V, I_O = 1.5A$			2.0	V
Output sustain voltage	$V_{O\text{sus}}$	$I_O = 100mA$	65			V
Input current	$I_{IN}$	$V_{DD} = 7.0V, V_{IN} = V_{DD} - 7.0V$			1.0	mA
Spark killer diode forward voltage	$V_{FS}$	$I_{FS} = 1.5A$			3.0	V
Spark killer diode reverse current	$I_{RS}$	$V_{CC} = 62V, V_O = 0V$			30	$\mu A$

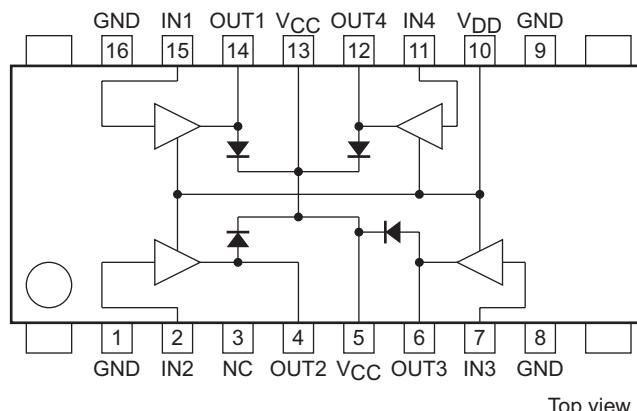
## Package Dimensions

unit : mm (typ)

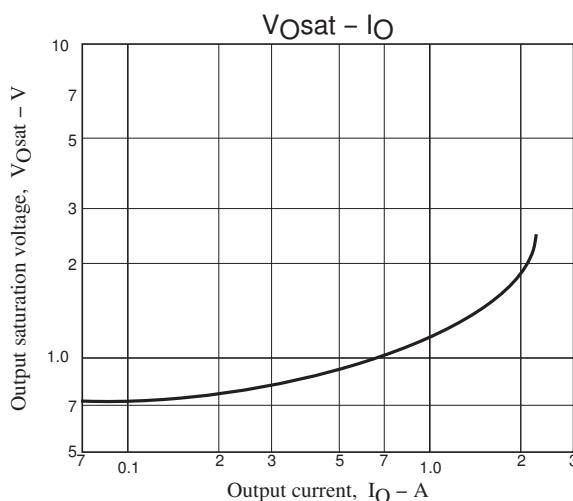
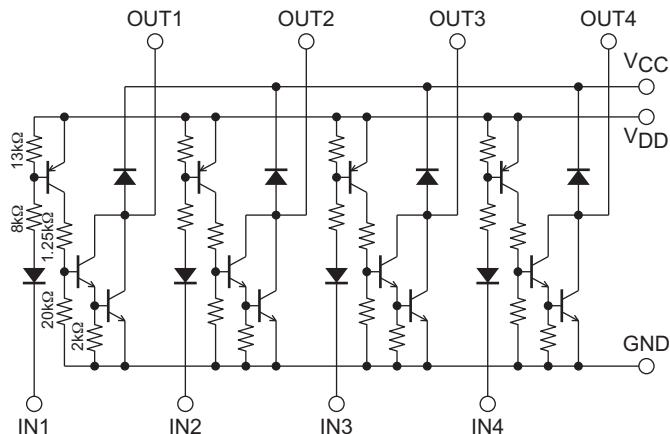
3097B



## Pin Assignment



## Equivalent Circuit



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