Ordering number : EN5916A

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 Ta = 25°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 | $V_{IN} \geq$ 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 | Pd max | Independent IC | 0.65 | W |
| | | Mounted on the recommended PCB | 1.7 | W |
| Operating temperature | Topr | | -20 to +75 | °C |
| Storage temperature | Tstg | | -55 to +150 | °C |

**Allowable Operating Conditions** at Ta = 25°C

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

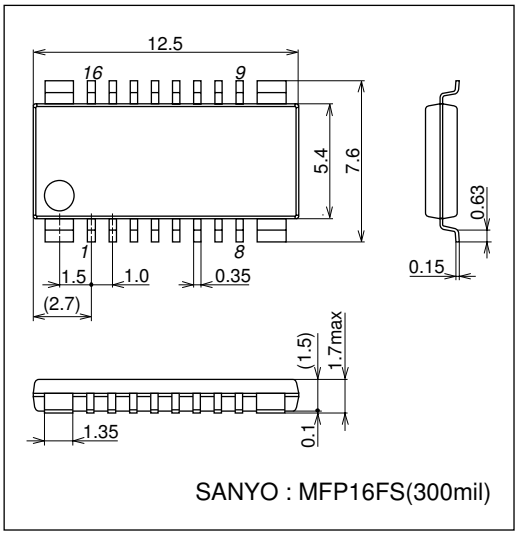
**Electrical Characteristics** at Ta = 25°C, $V_{DD}$ = 5V

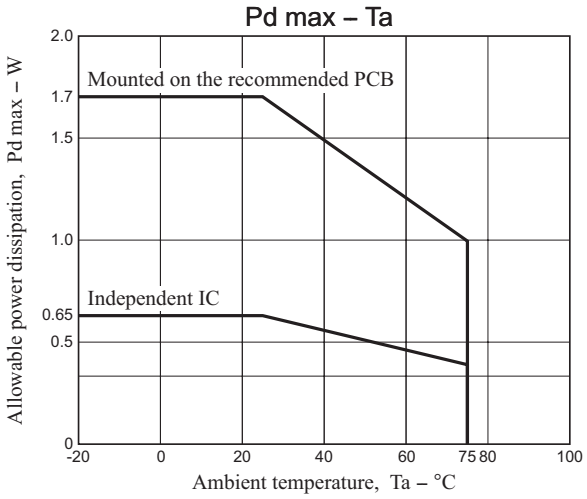
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Output saturation voltage | $V_O$sat1 | $V_{IN} = V_{DD}$-5.0V, $I_O$ = 0.5A | | | 1.2 | V |
| | $V_O$sat2 | $V_{IN} = V_{DD}$-5.0V, $I_O$ = 1.0A | | | 1.5 | V |
| | $V_O$sat3 | $V_{IN} = V_{DD}$-5.0V, $I_O$ = 1.5A | | | 2.0 | V |
| Output sustain voltage | $V_O$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 | μA |

## Package Dimensions

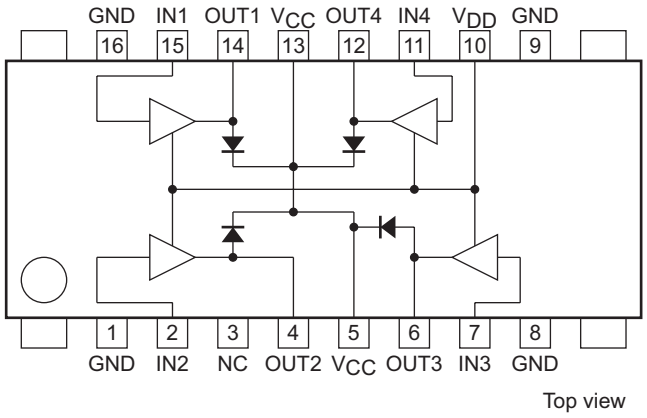
unit : mm (typ)

3097B




## Pin Assignment




Top view

## Equivalent Circuit