Ordering number : EN5916

Monolithic Digital IC

# LB1205M

## High-Voltage/Large-Current Darlington Driver

## Overview

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

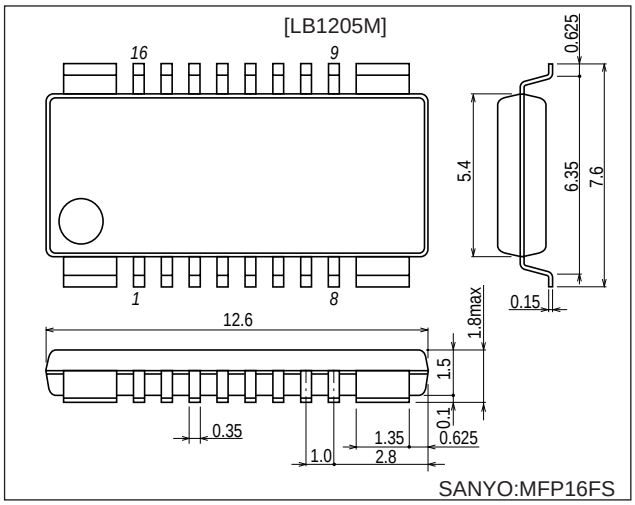
## Features

- 4-channel, high withstand voltage design (65V), large-current (1.5A) Darlington driver.
- PNP input type (low active)
- Built-in spark killer diode
- Built-in input protection diode
- Direct drive capable with 5V TTL, CMOS output

## Package Dimensions

unit:mm

**3097-MFP16FS**




## 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 |
| Applied output voltage | $V_O$ max | | 65 | V |
| Applied input voltage | $V_{IN}$ max | $V_{IN}$ ≥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 | 1.7W when mounted on a recommended PCB | 0.63 | W |
| Operating temperature | Topr | | –20 to +75 | °C |
| Storage temperature | Tstg | | –55 to +150 | °C |

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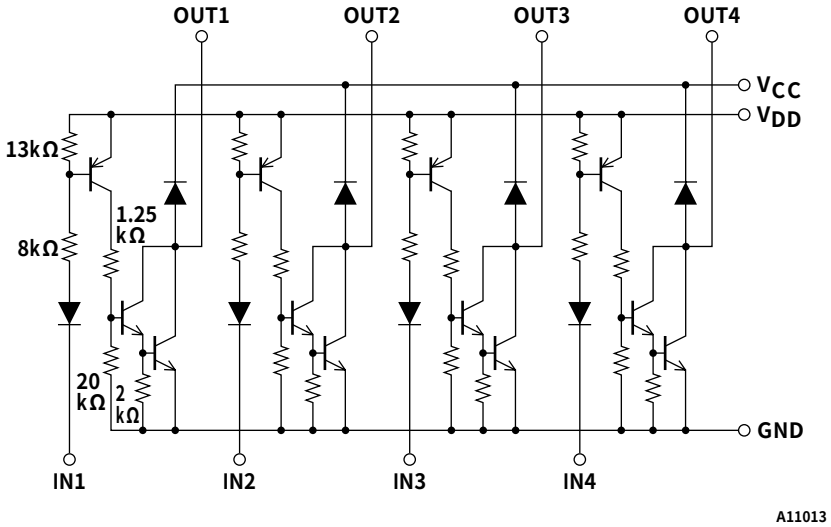
## Allowable Operating Ranges at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Power supply voltage | $V_{DD}$ | | 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 μA | $V_{DD}$ – 0.3 to $V_{DD}$ + 10.0 | V |

## Electrical Characteristics at Ta = 25°C, $V_{DD}$ = 5.0V

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

## Equivalent Circuit

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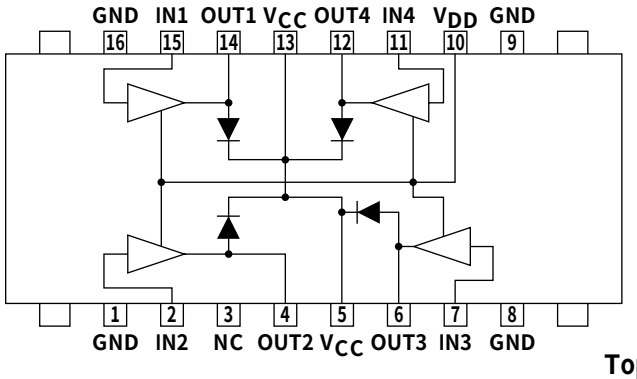
## Pin Assignment




Top view

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