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LB1205

Monolithic Digital IC

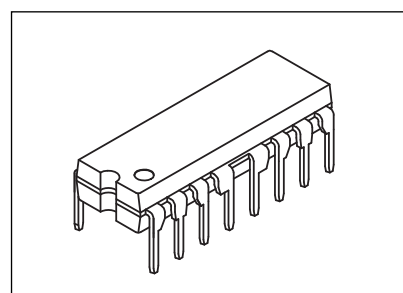
High-Voltage, Large-Current Darlington Driver

Overview

The LB1205 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.



DIP16F(300mil)

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------------|---------------------|--------------------------------|-------------------------------|------------------|
| Maximum supply voltage | $V_{DD\text{ max}}$ | | 7.0 | V |
| | $V_{CC\text{ max}}$ | | 62 | V |
| Output supply voltage | $V_O\text{ max}$ | | 65 | V |
| Input supply voltage | $V_{IN\text{ max}}$ | $V_{IN} \geq \text{GND}$ | $V_{DD}-7.0$ to $V_{DD}-10.0$ | V |
| Output current | $I_O\text{ max}$ | | 1.5 | A |
| Spark killer diode forward current | I_{FS} | | 1.5 | A |
| Allowable power dissipation | $P_d\text{ max}$ | Independent IC | 1.9 | W |
| | | Mounted on the recommended PCB | 2.6 | W |
| Operating temperature | T_{opr} | | -20 to +75 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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 |

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

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

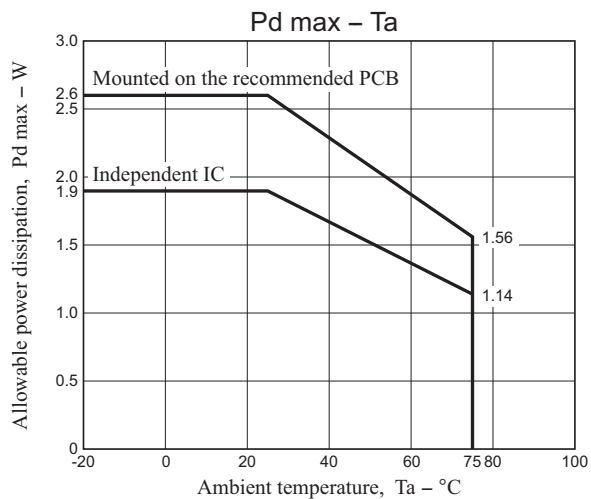
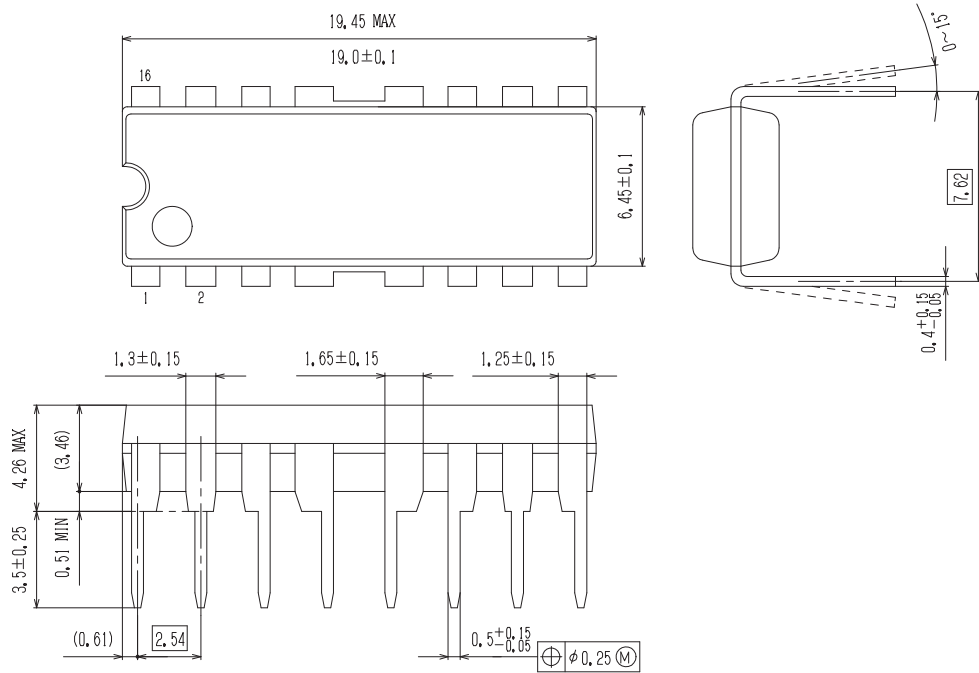
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|------------------------------------|--------------------|--|---------|-----|-----|---------------|
| | | | min | typ | max | |
| Output saturation voltage | $V_{O\text{sat}1}$ | $V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 0.5\text{A}$ | | | 1.2 | V |
| | $V_{O\text{sat}2}$ | $V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 1.0\text{A}$ | | | 1.5 | V |
| | $V_{O\text{sat}3}$ | $V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 1.5\text{A}$ | | | 2.0 | V |
| Output sustain voltage | $V_{O\text{sus}}$ | $I_O = 100\text{mA}$ | 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 |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

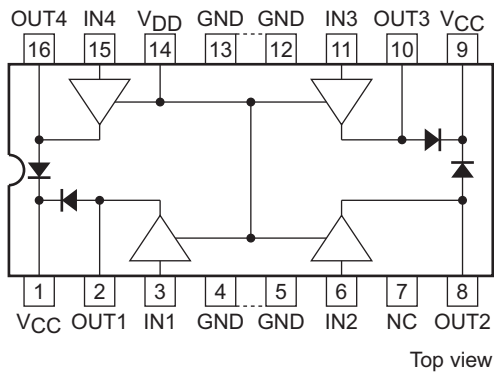
Package Dimensions

unit : mm

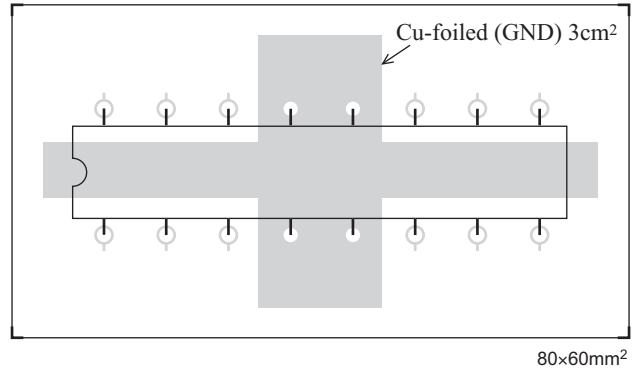
PDIP16 FUSED LEADS / DIP16F (300 mil)
CASE 646AQ
ISSUE O



Pin Assignment

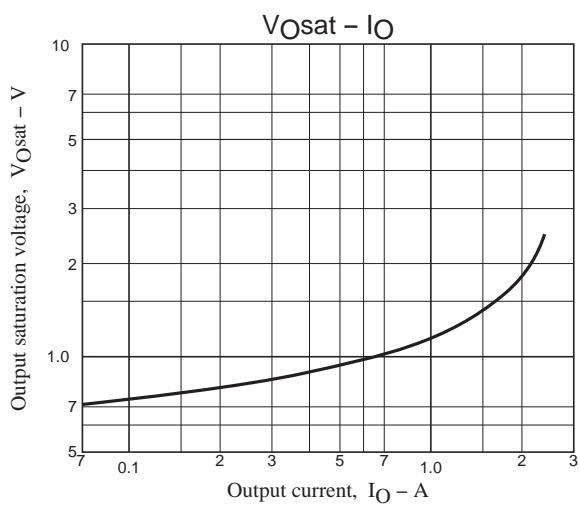
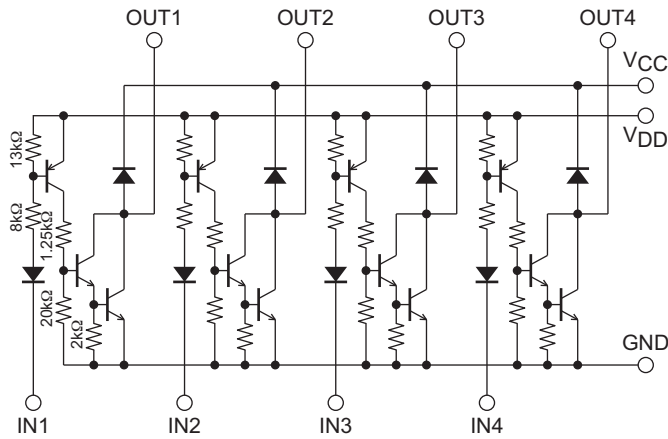


Recommended PCB



Note: VCC (pins 1 and 9) is shorted internally.

Equivalent Circuit



LB1205

ORDERING INFORMATION

| Device | Package | Shipping (Qty / Packing) |
|------------|--|--------------------------|
| LB1205-E | DIP16F(300mil) (Pb-Free / Halogen Free) | 25 / Fan-Fold |
| LB1205-L-E | DIP16F(300mil) (Pb-Free / Halogen Free) | 25 / Fan-Fold |
| LB1205L-E | DIP16F(300mil) (Pb-Free / Halogen Free) | 25 / Fan-Fold |
| LB1205Z-E | DIP16F(300mil) (Pb-Free / Halogen Free) | 25 / Fan-Fold |

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