



# LB1233M

## High-Voltage/Large-Current Darlington Transistor Array

### Overview

The LB1233M is a Darlington transistor array using NPN transistors. It is suitable for applications such as hammer drive, lamp control, relay drive, etc. It also incorporates a spark killer diode for the L load.

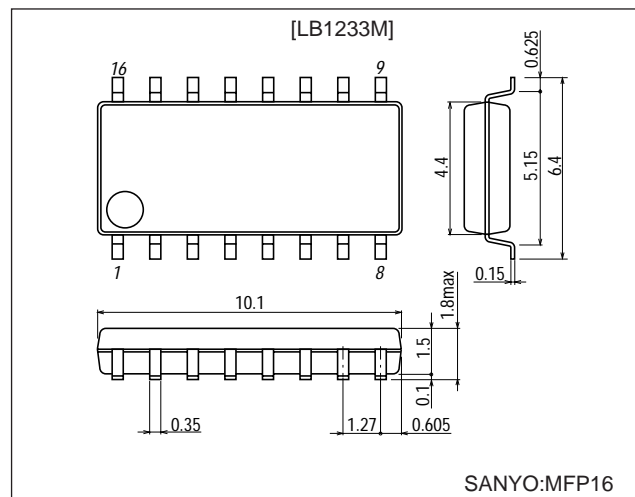
### Features

- Designed for high voltage ( $V_{CE0} \geq 50V$ ), large current drive capability ( $I_C \text{ max}=500 \text{ mA}$ )
- Integrated base current limiting resistor
- Direct drive capability with TTL, CMOS output

### Package Dimensions

unit:mm

3035A-MFP16



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## Specifications

### Absolute Maximum Ratings at Ta = 25°C

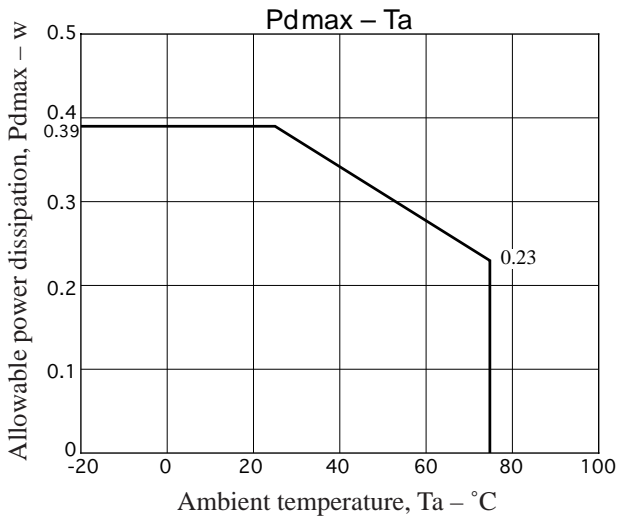
Parameter	Symbol	Conditions	Ratings	Unit
Applied output voltage	V <sub>OUT</sub>		50	V
Output current	I <sub>OUT</sub>	Per unit	500	mA
Applied input voltage	V <sub>IN</sub>		30	V
Ground pin current	I <sub>GND</sub>	All 7 channels ON, f = 10 Hz, duty = 5%	2.8	A
Allowable power dissipation	Pd max		0.39	W
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +150	°C

### Allowable Operating Ranges at Ta = 25°C

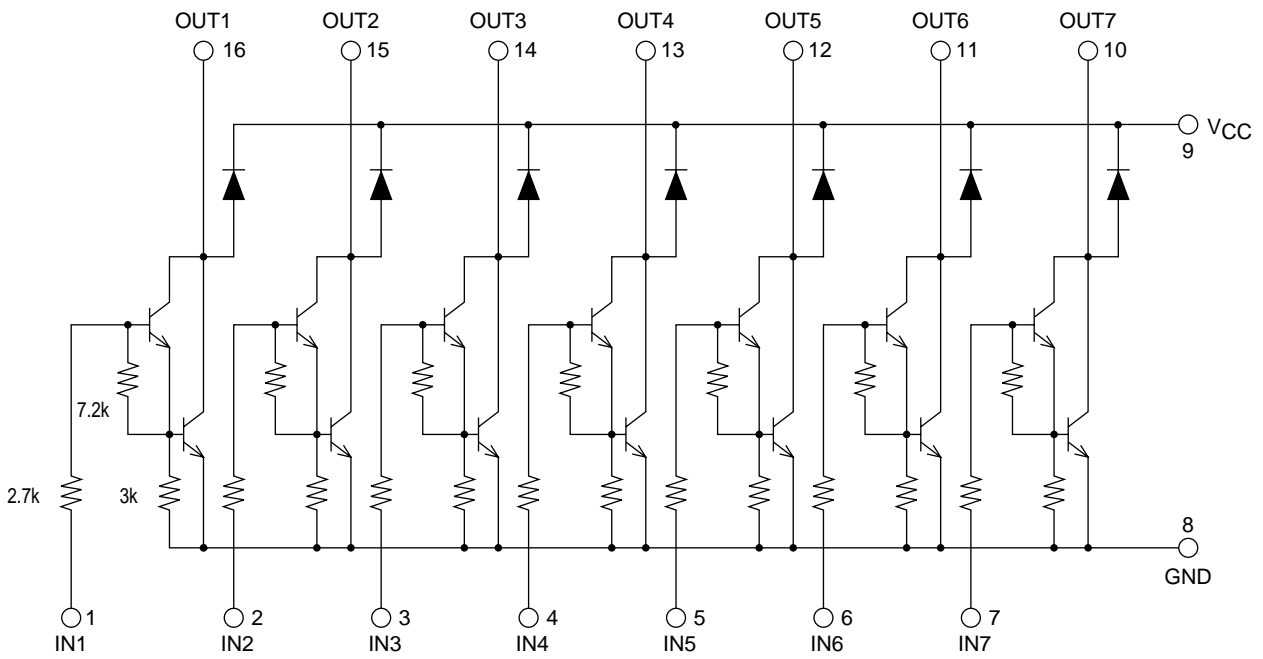
Parameter	Symbol	Conditions	Ratings	Unit
Applied output voltage	V <sub>OUT</sub>		50	V
Input high level voltage	V <sub>IH</sub>	I <sub>OUT</sub> = 350 mA	3 to 30	V
Input low level voltage	V <sub>IL</sub>	I <sub>OUT</sub> ≤ 100 μA	-0.3 to +0.3	V

### Electrical Characteristics at Ta = 25°C

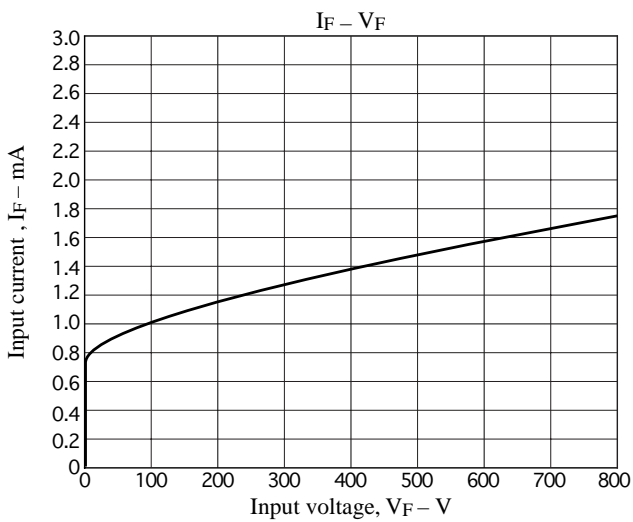
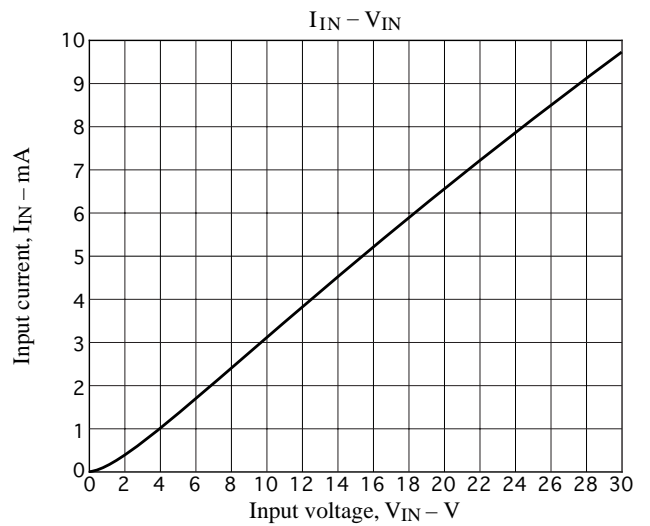
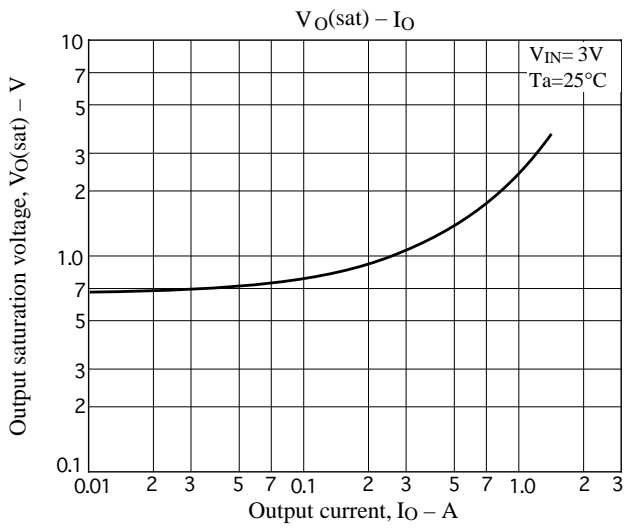
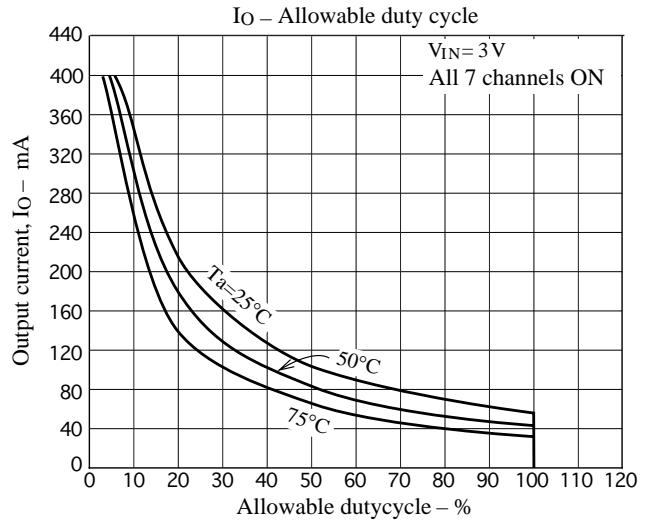
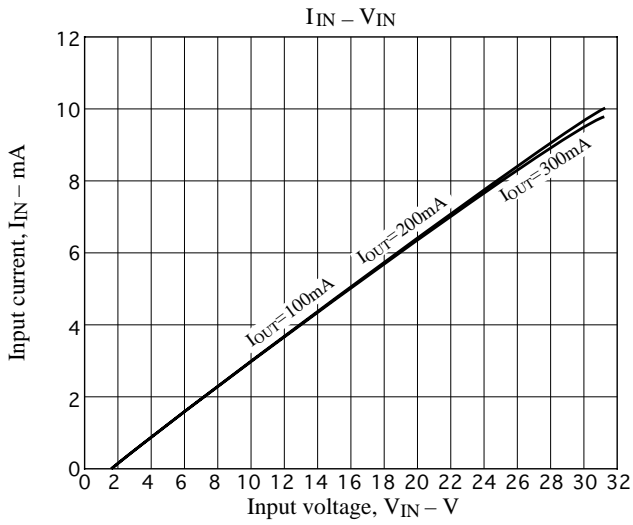
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output leakage current	I <sub>OFF</sub>	V <sub>OUT</sub> = 50V			100	μA
Output voltage	V <sub>OH1</sub>	I <sub>IN</sub> = 0.25 mA, I <sub>OUT</sub> = 100 mA		0.9	1.1	V
	V <sub>OH2</sub>	I <sub>IN</sub> = 0.35 mA, I <sub>OUT</sub> = 200 mA		1.1	1.3	V
	V <sub>OH3</sub>	I <sub>IN</sub> = 0.5 mA, I <sub>OUT</sub> = 350 mA		1.3	1.6	V
	V <sub>OH4</sub>	V <sub>IN</sub> = 1 mA, I <sub>OUT</sub> = 400 mA			2.4	V
Input current	I <sub>IN</sub>	V <sub>IN</sub> = 3.85V		0.93	1.35	mA
Spark killer diode leakage current	I <sub>R</sub> (S)	V <sub>R</sub> (S) = 50V			100	μA
Spark killer diode forward current	V <sub>F</sub> (S)1	I <sub>F</sub> (S) = 350 mA			2.0	V
	V <sub>F</sub> (S)2	I <sub>F</sub> (S) = 400 mA			2.4	V



**Equivalent Circuit**



A11015



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