Ordering number : EN5954

Monolithic Digital IC

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.

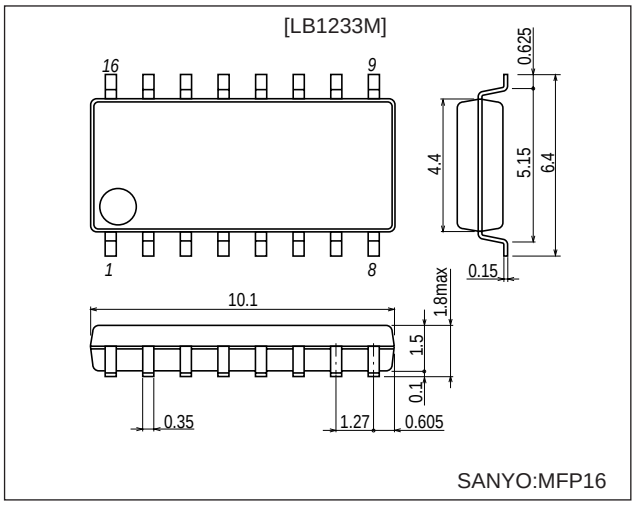
Features

- Designed for high voltage ($V_{CEO} \geq 50V$), large current drive capability (IC max=500 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

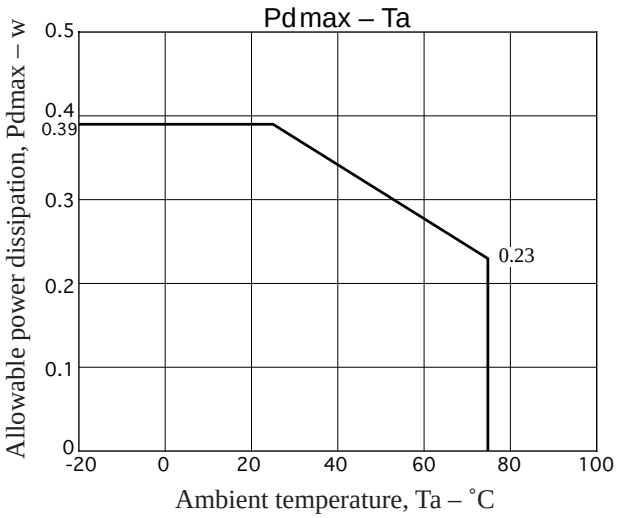
Parameter	Symbol	Conditions	Ratings	Unit
Applied output voltage	V_{OUT}		50	V
Output current	I_{OUT}	Per unit	500	mA
Applied input voltage	V_{IN}		30	V
Ground pin current	I_{GND}	All 7 channels ON, f = 10 Hz, duty = 5%	2.8	A
Allowable power dissipation	Pd max		0.39	W
Operating temperature	Topr		–20 to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

Allowable Operating Ranges at Ta = 25°C

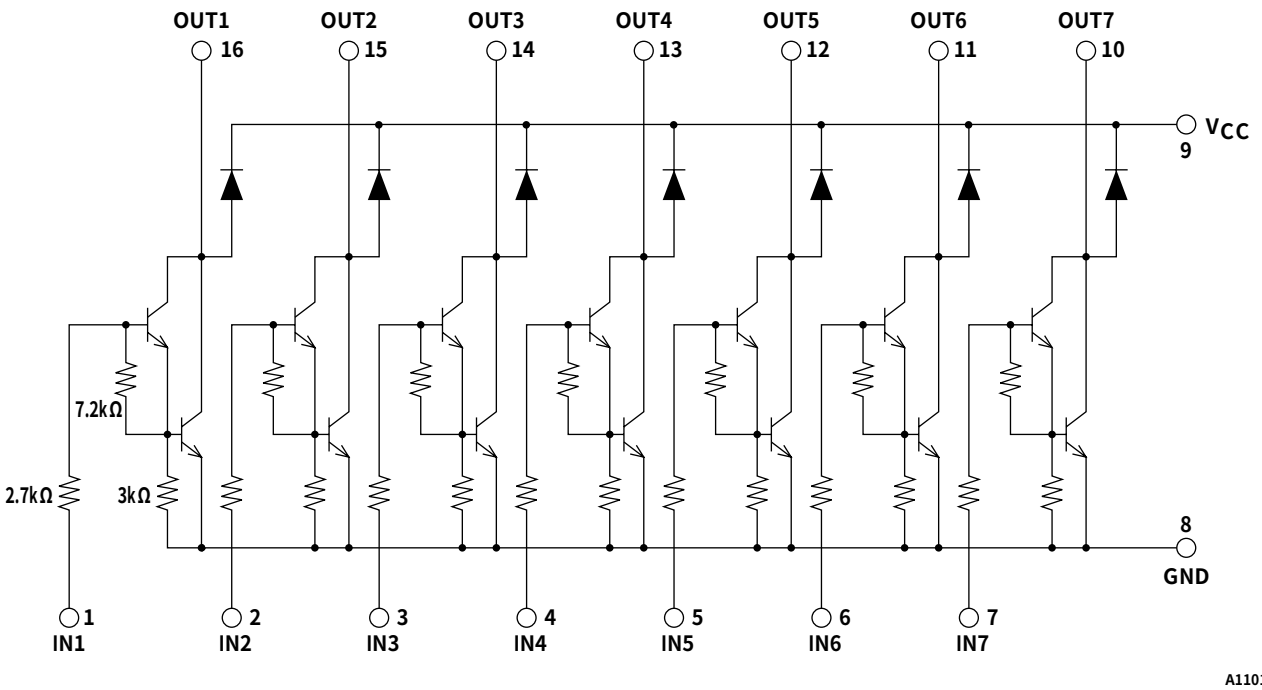
Parameter	Symbol	Conditions	Ratings	Unit
Applied output voltage	V_{OUT}		50	V
Input high level voltage	V_{IH}	I_{OUT} = 350 mA	3 to 30	V
Input low level voltage	V_{IL}	$I_{OUT} \leq$ 100 µA	-0.3 to +0.3	V

Electrical Characteristics at Ta = 25°C

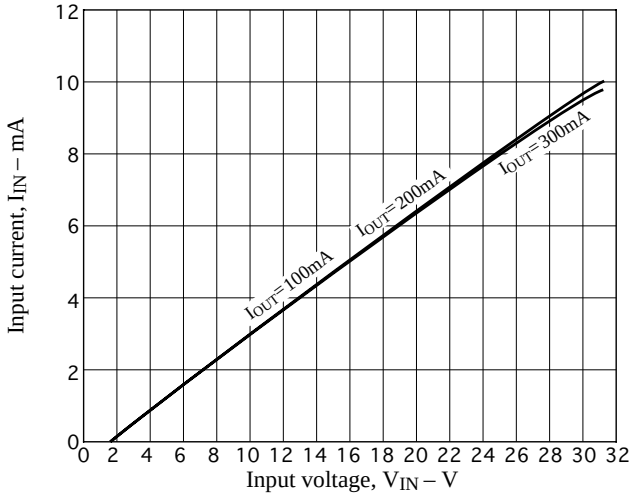
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output leakage current	I_{OFF}	V_{OUT} = 50V			100	µA
Output voltage	$V_{OH}1$	I_{IN} = 0.25 mA, I_{OUT} = 100 mA		0.9	1.1	V
	$V_{OH}2$	I_{IN} = 0.35 mA, I_{OUT} = 200 mA		1.1	1.3	V
	$V_{OH}3$	I_{IN} = 0.5 mA, I_{OUT} = 350 mA		1.3	1.6	V
	$V_{OH}4$	V_{IN} = 1 mA, I_{OUT} = 400 mA			2.4	V
Input current	I_{IN}	V_{IN} = 3.85V		0.93	1.35	mA
Spark killer diode leakage current	I_R (S)	V_R (S) = 50V			100	µA
Spark killer diode forward current	V_F (S)1	I_F (S) = 350 mA			2.0	V
	V_F (S)2	I_F (S) = 400 mA			2.4	V



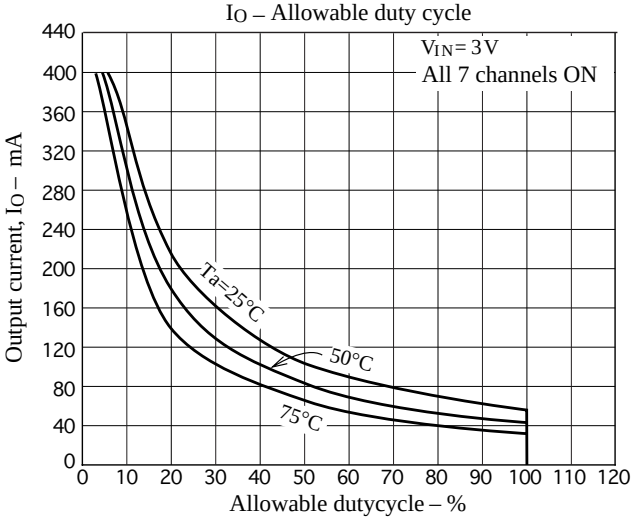
Equivalent Circuit



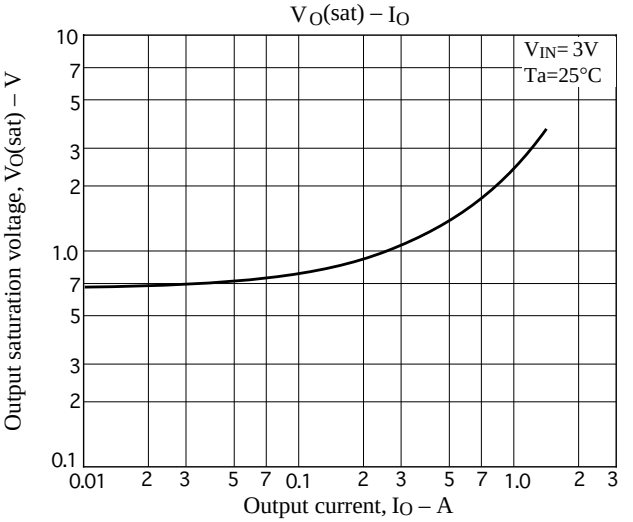
$I_{IN} - V_{IN}$



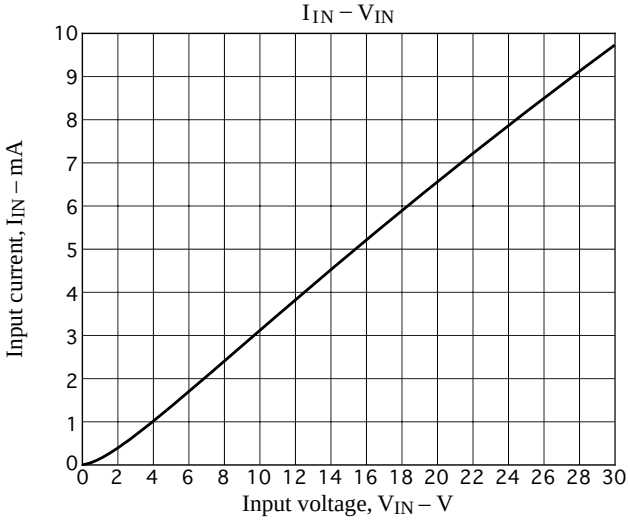
I_O – Allowable duty cycle



$V_O(sat) - I_O$



$I_{IN} - V_{IN}$



$I_F - V_F$