



SANYO Semiconductors

DATA SHEET

LB1211 Series

Monolithic Digital IC

General-Purpose Transistor Array

Overview

The LB1211 series are general-purpose transistor arrays containing 7 channels. They are especially suited for driving LEDs, lamps, small-sized relays, etc. The transistors can be standardized.

Features

- Common-emitter 7 channels. LB1211, 1212, 1213, 1214
- Common-collector 7 channels. LB1215, 1216
- Built-in base current limiting resistors. LB1212, 1213, 1214, 1216
- Built-in Zener diodes for level shift. LB1212
- Capable of being direct driven with TTL, CMOS, PMOS, etc.
- Wide operating voltage and temperature ranges.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Output supply voltage	V_{OUT}	LB1212/13/14 only	-0.5 to +50	V
Collector to emitter voltage	V_{CEO}	LB1211/15/16 only	35	V
Collector to base voltage	V_{CBO}	LB1211/15/16 only	50	V
Output current	I_{OUT}		200	mA
Input voltage	V_{IN1}	LB1212/13/14 only	-0.5 to +30	V
	V_{IN2}	LB1216 only	-0.5 to +45	V
Input current	I_{IN}	LB1211/15 only	25	mA
GND pin current	I_{GND}		500	mA
Allowable power dissipation	$P_{d\ max}$		960	mW
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

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LB1211,1212,1213,1214,1215,1216

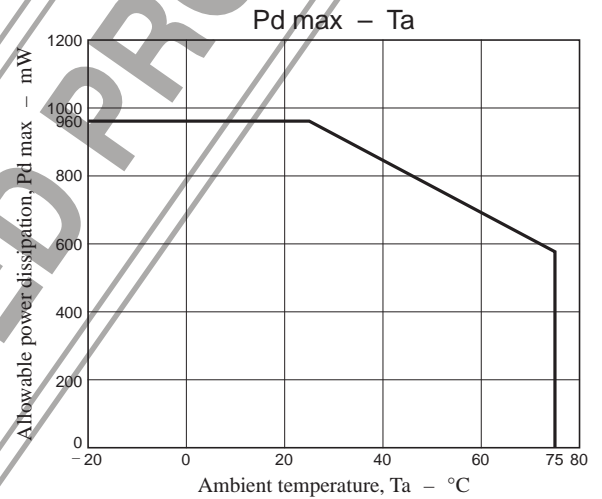
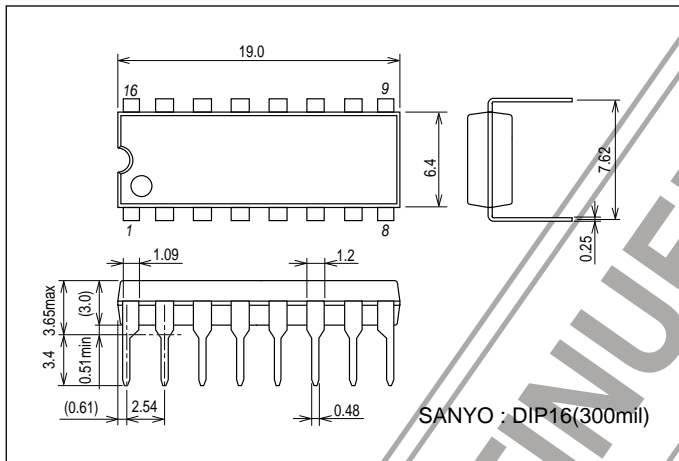
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output voltage	V _{OUT1}	I _{IN} = 1mA, I _{OUT} = 10mA			0.2	V
	V _{OUT2}	I _{IN} = 2mA, I _{OUT} = 100mA LB1212/13/14 only			0.8	V
	V _{OUT3}	I _{IN} = 32mA, I _{OUT} = 100mA LB1211/15/16 only			0.8	V
Output leakage current	I _{OFF}	V _{IN} = 0V, V _{OUT} = 25V			10	μA
Output sustain voltage	V _{OUT (sus)}	I _{OUT} = 100mA	35			V
DC current gain	h _{FE1}	V _{OUT} = 10V, I _{OUT} = 10mA LB1212/13/14 only	50		500	
	h _{FE2}	V _{OUT} = 10V, I _{OUT} = 10mA LB1211/15/16 only	70		500	
Input voltage	V _{IN (on)}	I _{IN} = 1mA, I _{OUT} = 10mA LB1211/15/16 only	0.4			V
Turn-ON time	t _{ON}	Refer to test circuit.		50		ns
Turn-OFF time	t _{OFF}	Refer to test circuit.		200		ns

Package Dimensions

unit : mm (typ)

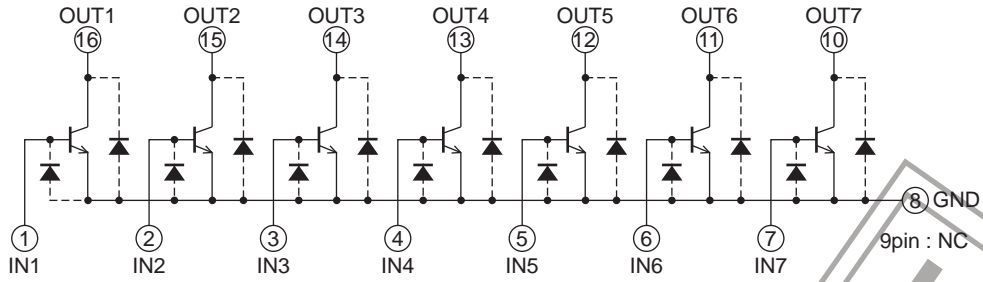
3006C



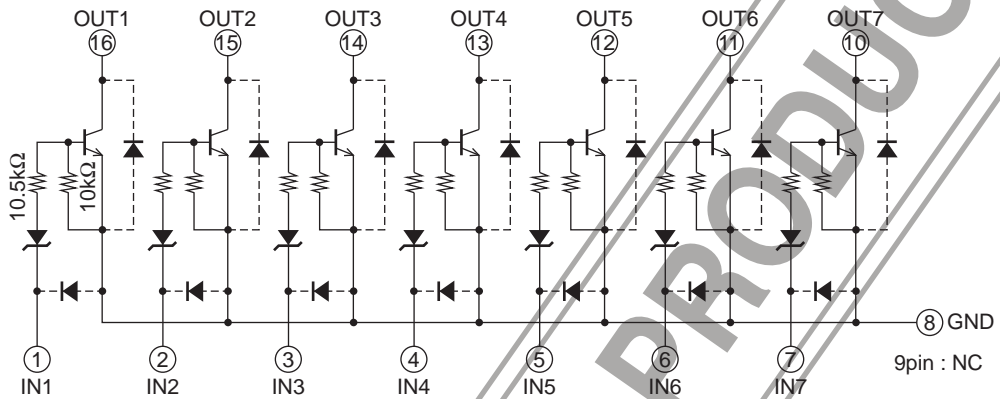
LB1211,1212,1213,1214,1215,1216

Equivalent Circuit

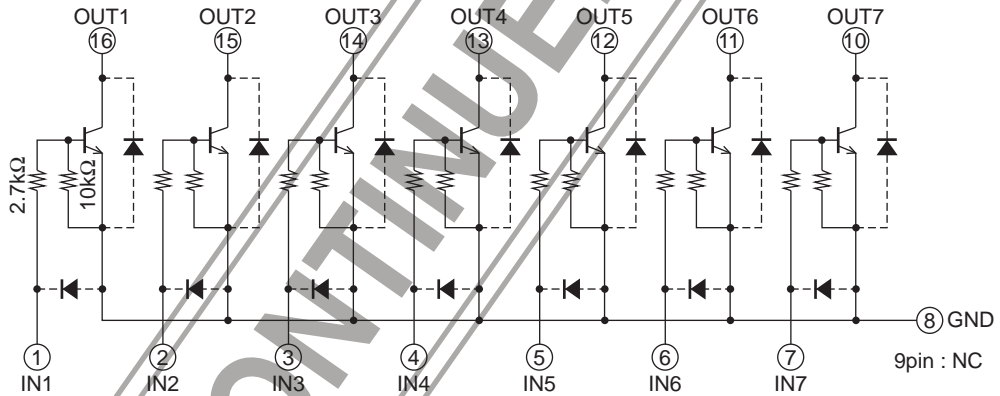
LB1211



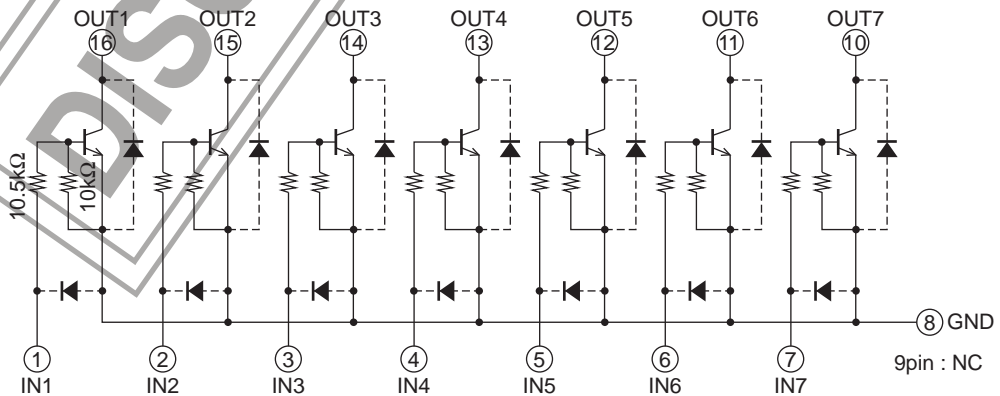
LB1212



LB1213

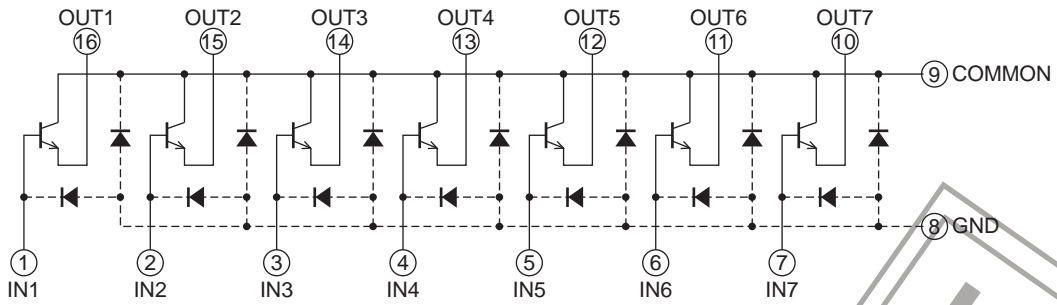


LB1214

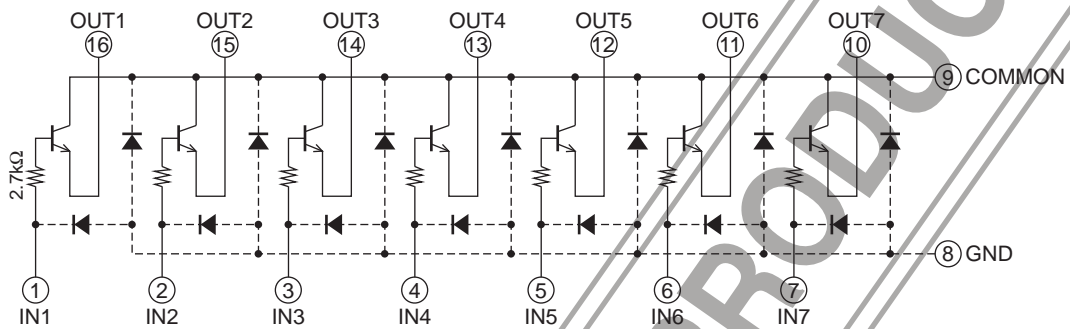


LB1211,1212,1213,1214,1215,1216

LB1215

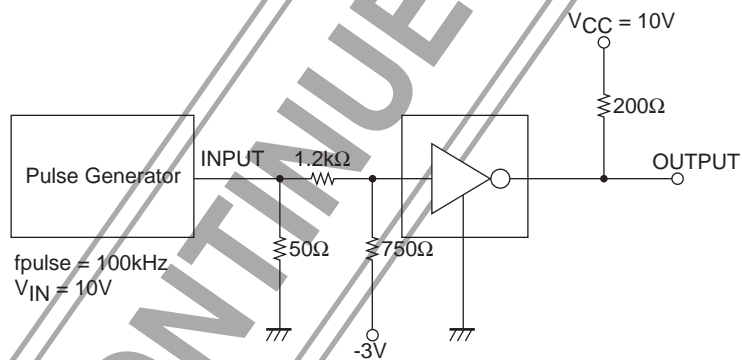


LB1216

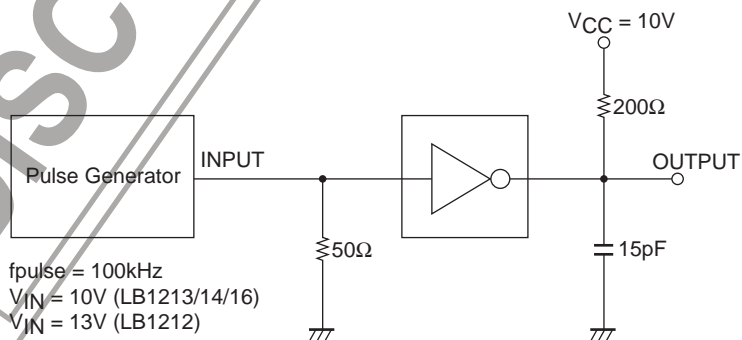


Turn-ON (tON), Turn-OFF (tOFF) Time Test Circuits

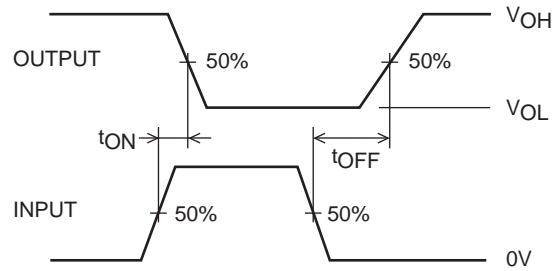
LB1211/15



LB1212/13/14/16



Input/output waveforms



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