

<b>SANYO</b>	No.1042F	<b>LB1211 Series</b>
		<b>General-Purpose Transistor Array</b>

The LB1211 series are general-purpose transistor arrays containing 7 channels (5 channels : LB1217 only). 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
- Independent 5 channels. LB1217
- 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

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

				unit
Output Supply Voltage	V <sub>OUT</sub>	LB1212/13/14 only	-0.5 to +50	V
Collector to Emitter Voltage	V <sub>CEO</sub>	LB1211/15/16/17 only	35	V
Collector to Base Voltage	V <sub>CBO</sub>	LB1211/15/16/17 only	50	V
Output Current	I <sub>OUT</sub>		200	mA
Input Voltage	V <sub>IN1</sub>	LB1212/13/14 only	-0.5 to +30	V
	V <sub>IN2</sub>	LB1216 only	-0.5 to +45	V
Input Current	I <sub>IN</sub>	LB1211/15/17 only	25	mA
GND Pin Current	I <sub>GND</sub>		500	mA
Allowable Power Dissipation	P <sub>d max</sub>		960	mW
Operating Temperature	T <sub>opr</sub>		-20 to +75	°C
Storage Temperature	T <sub>stg</sub>		-40 to +150	°C

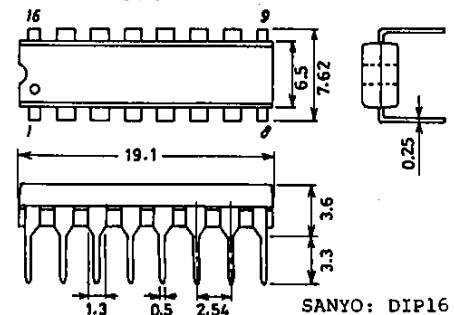
### Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Output Voltage	V <sub>OUT1</sub>	I <sub>IN</sub> = 1mA, I <sub>OUT</sub> = 10mA			0.2	V
	V <sub>OUT2</sub>	I <sub>IN</sub> = 2mA, I <sub>OUT</sub> = 100mA			0.8	V
	V <sub>OUT3</sub>	LB1212/13/14 only I <sub>IN</sub> = 3mA, I <sub>OUT</sub> = 100mA			0.8	V
Output Leakage Current	I <sub>OFF</sub>	V <sub>IN</sub> = 0V, V <sub>OUT</sub> = 25V			10	μA
Output Sustain Voltage	V <sub>OUT (sus)</sub>	I <sub>OUT</sub> = 100mA	35			V
DC Current Gain	h <sub>FE1</sub>	V <sub>OUT</sub> = 10V, I <sub>OUT</sub> = 10mA	50		500	
	h <sub>FE2</sub>	LB1212/13/14 only V <sub>OUT</sub> = 10V, I <sub>OUT</sub> = 10mA	70		500	
		LB1211/15/16/17 only				

Continued on next page.

### Package Dimensions 3064

(unit : mm)



**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

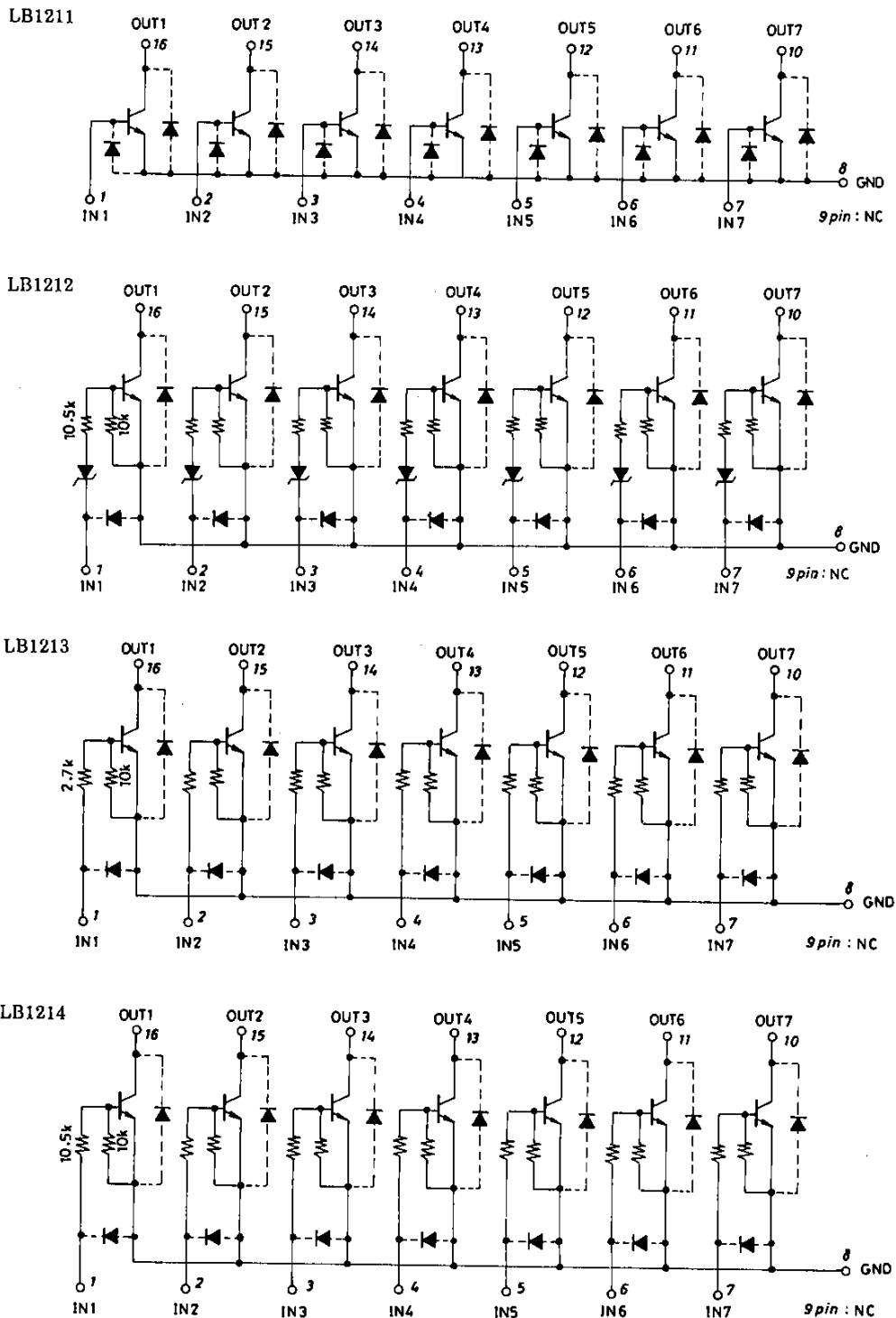
N010TS/4050YT/4078TA/7067KI/3295KI/7072KI,TS No.1042-1/4

LB1211,1212,1213,1214,1215;1216,1217

Continued from preceding page.

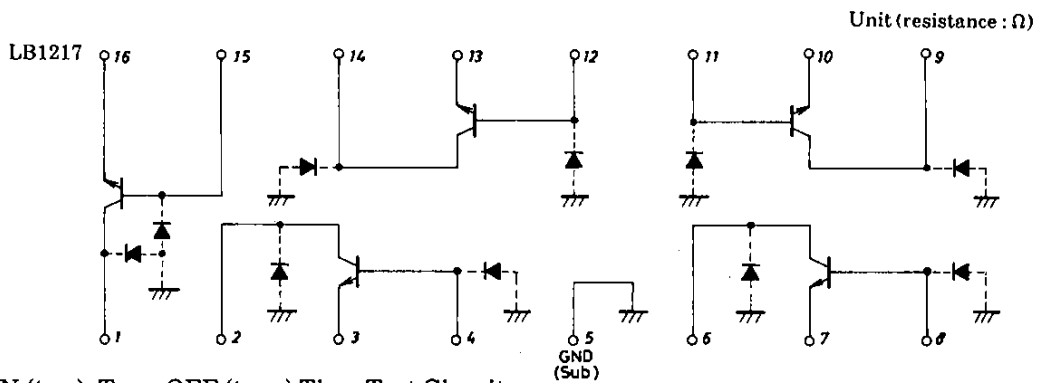
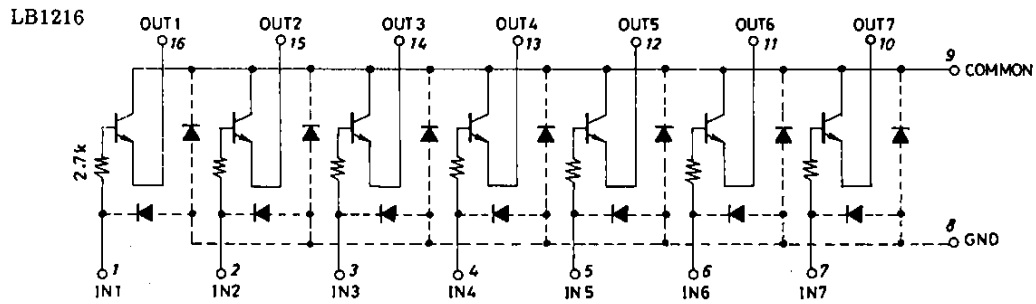
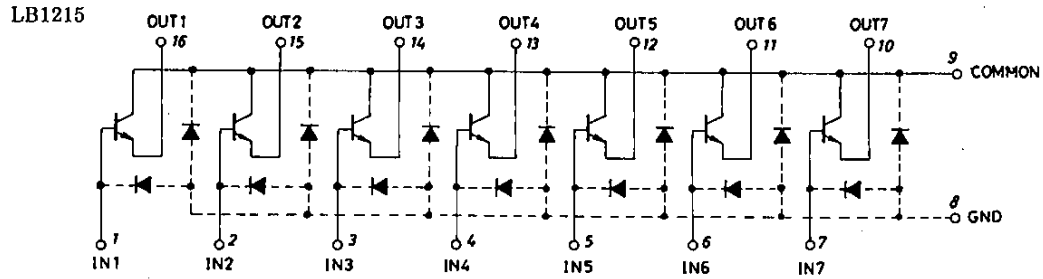
		$I_{IN}=1mA, I_{OUT}=10mA$	min	typ	max	unit
Input Voltage	$V_{IN(on)}$	LB1211/15/16/17 only	0.4			V
Turn-ON Time	$t_{ON}$	Refer to Test Circuit.		50		ns
Turn-OFF Time	$t_{OFF}$	Refer to Test Circuit.		200		ns

Equivalent Circuit

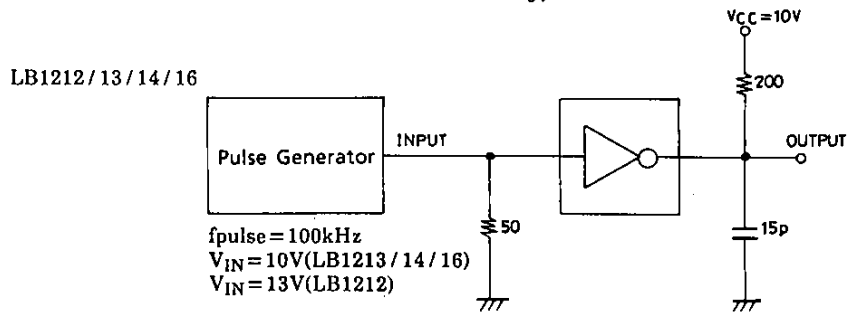
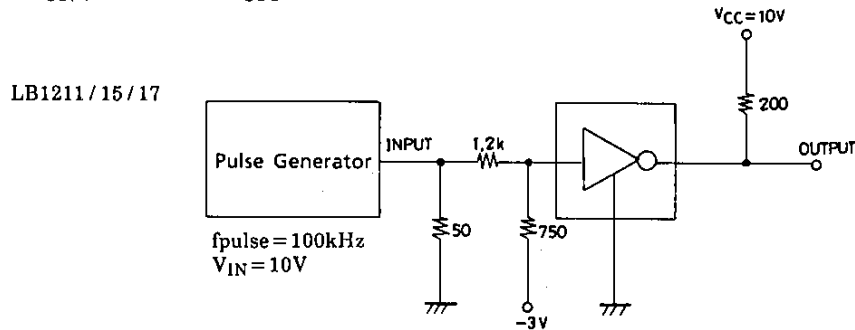


Unit (resistance :  $\Omega$ )

LB1211,1212,1213,1214,1215,1216,1217

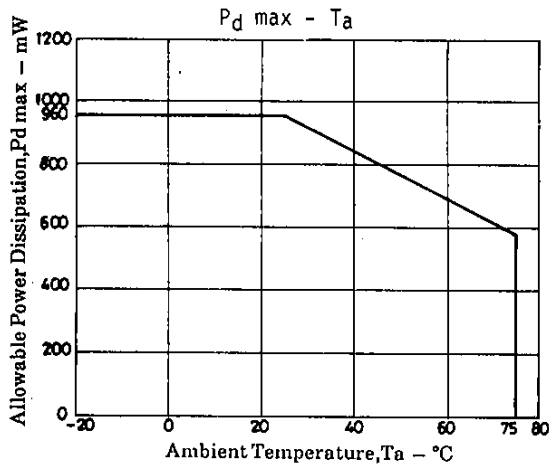
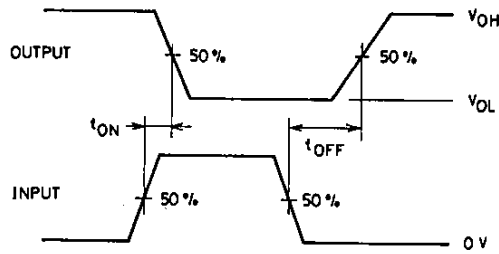


Turn-ON ( $t_{ON}$ ), Turn-OFF ( $t_{OFF}$ ) Time Test Circuits



Unit (resistance: Ω, capacitance: F)

## Input/Output Waveforms



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.