

**SANYO**

NO.1188D

**LB1231 Series****High-Voltage, Large Current  
Darlington Transistor Array**

The circuit configuration of this IC is of 7-channel Darlington transistor array consisting of NPN transistors. It is especially suited for use in hammer drivers and lamp, relay drivers. It contains spark killer diodes against L load.

Features High-voltage ( $V_{CE0} \geq 50V$ ), large-current ( $I_{Cmax} = 500mA$ ) drive

- LB1231 . Drivable by TTL, MOS output
- LB1232 . Contains base current limiting resistors, Zener diodes for level shift.
  - . Direct drivable by 24V P MOS.
- LB1233 . Contains base current limiting resistors.
  - . Direct drivable by TTL, C MOS output.
- LB1234 . Contains base current limiting resistors.
  - . Direct drivable by C MOS, P MOS output.

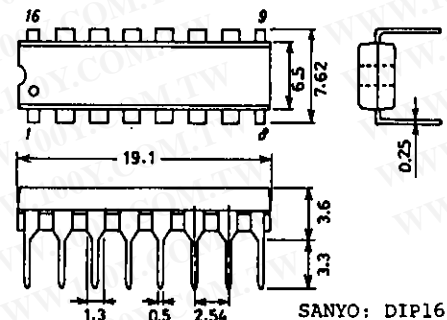
**Absolute Maximum Ratings at  $T_a = 25^\circ C$** 

				unit
Output Supply Voltage	$V_{OUT}$		50	V
Output Current	$I_{OUT}$	Per unit	500	mA
Input Supply Voltage	$V_{IN}$	LB1232/33/34	30	V
Input Current	$I_{IN}$	LB1231 only	25	mA
GND Pin Current	$I_{GND}$	7ch simultaneously on, $f = 10Hz, duty = 23\%$	2.8	A
Allowable Power Dissipation	$P_{dmax}$		1.5	W
Operating Temperature	$T_{opr}$		-20 to +75	$^\circ C$
Storage Temperature	$T_{stg}$		-40 to +150	$^\circ C$

**Allowable Operating Conditions at  $T_a = 25^\circ C$** 

				unit
Output Supply Voltage	$V_{OUT}$		50	V
Input "H" Level Voltage	$V_{IH}$	LB1232	$I_{OUT} = 350mA$	11 to 30
		LB1233	$I_{OUT} = 350mA$	3 to 30
		LB1234	$I_{OUT} = 350mA$	5 to 30
Input "L" Level Voltage	$V_{IL}$	LB1231/33	$I_{OUT} \leq 100\mu A$	-0.3 to +0.3
		LB1232	$I_{OUT} \leq 100\mu A$	-0.3 to +6.0
		LB1234	$I_{OUT} \leq 100\mu A$	-0.3 to +0.7

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

**Package Dimensions 3064-D16TR**  
(unit : mm)

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**  
 TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

O1995YK/7067KI/4055KI/0152KI, TS No.1188-1/4

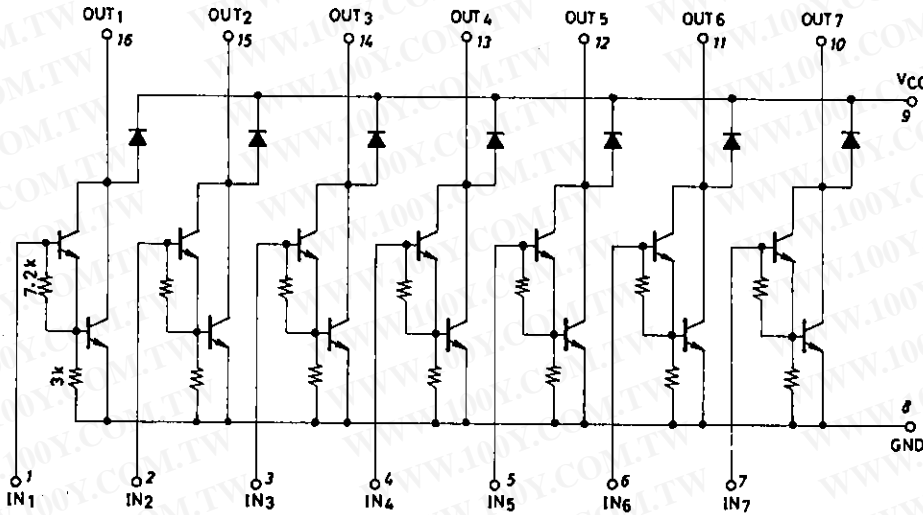
Electrical Characteristics at  $T_a=25^{\circ}\text{C}$

			min	typ	max	unit
Output Leak Current	$I_{OFF}$	$V_{OUT}=50\text{V}$			100	$\mu\text{A}$
Output Voltage	$V_{OH1}$	$I_{IN}=0.25\text{mA}, I_{OUT}=100\text{mA}$	0.9	1.1		V
	$V_{OH2}$	$I_{IN}=0.35\text{mA}, I_{OUT}=200\text{mA}$	1.1	1.3		V
	$V_{OH3}$	$I_{IN}=0.5\text{mA}, I_{OUT}=350\text{mA}$	1.3	1.6		V
	$V_{OH4}$	$I_{IN}=1\text{mA}, I_{OUT}=400\text{mA}$		2.4		V
Input Voltage	$V_{IN}$	LB1231 $I_{IN}=1\text{mA}$	1.35	1.7		V
Input Current	$V_{IN}$	LB1232 $V_{IN}=17\text{V}$	0.82	1.25		mA
		LB1233 $V_{IN}=3.85\text{V}$	0.93	1.35		mA
		LB1234 $V_{IN}=5\text{V}$	0.35	0.5		mA
		LB1234 $V_{IN}=12\text{V}$	1.00	1.45		mA
Spark Killer Diode Leak Current	$I_{R(S)}$	$V_{R(S)}=50\text{V}$			100	$\mu\text{A}$
Spark Killer Diode Forward Voltage	$V_{F(S)1}$	$I_{F(S)}=350\text{mA}$		2.0		V
	$V_{F(S)2}$	$I_{F(S)}=400\text{mA}$		2.4		V

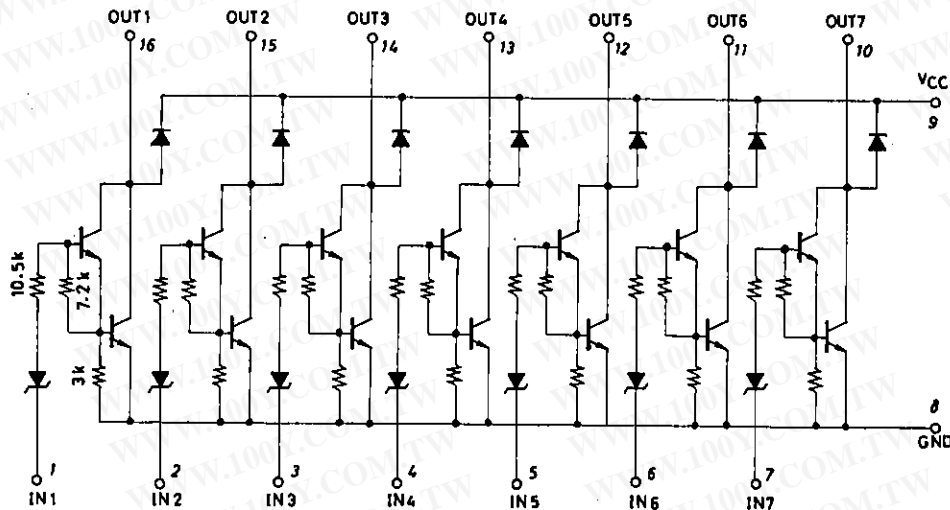
Equivalent Circuits

Unit (resistance:  $\Omega$ )

LB1231



LB1232



Continued on next page.

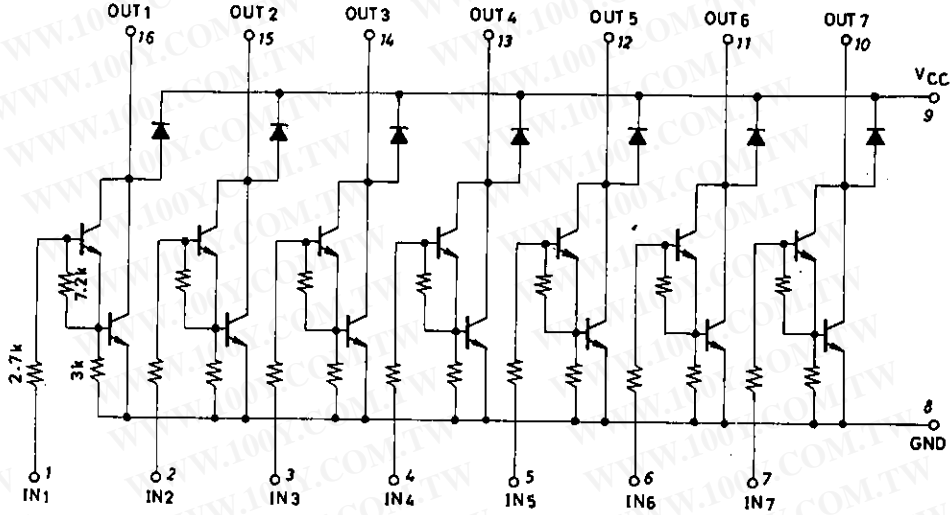
勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

LB1231,1232,1233,1234

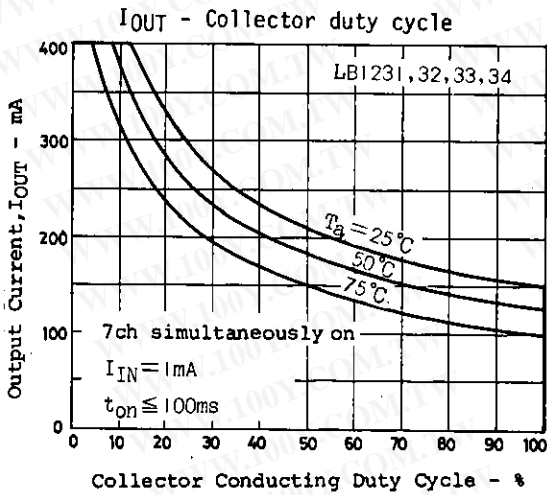
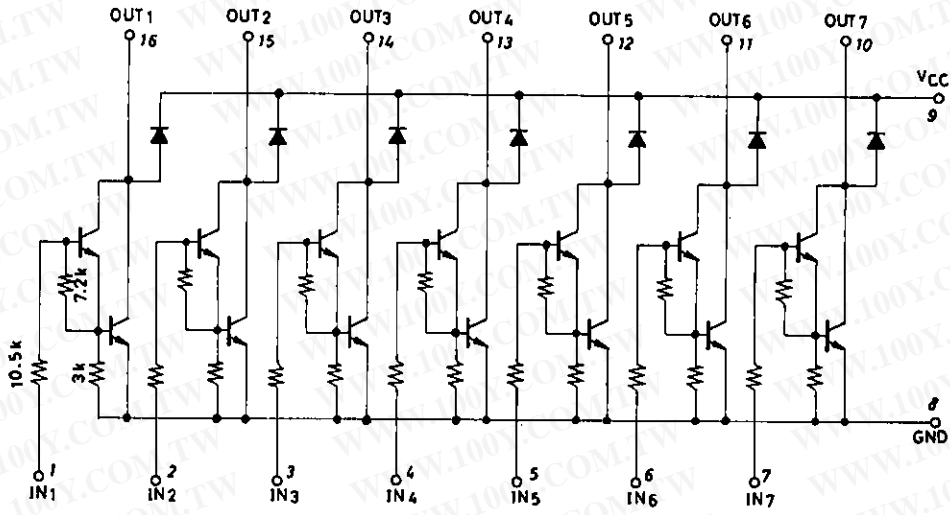
Continued from preceding page.

Unit (resistance:  $\Omega$ )

LB1233



LB1234



勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-34970699  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

- 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.