

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.

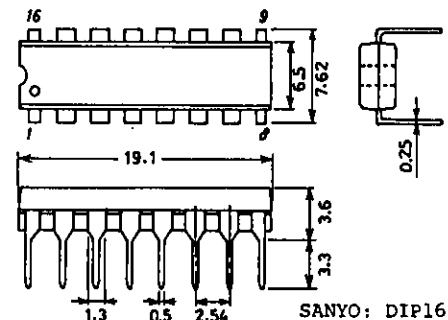
. Direct drivable by C MOS, P MOS output.

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

Package Dimensions 3064-D16TR
(unit : mm)

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LB1231,1232,1233,1234

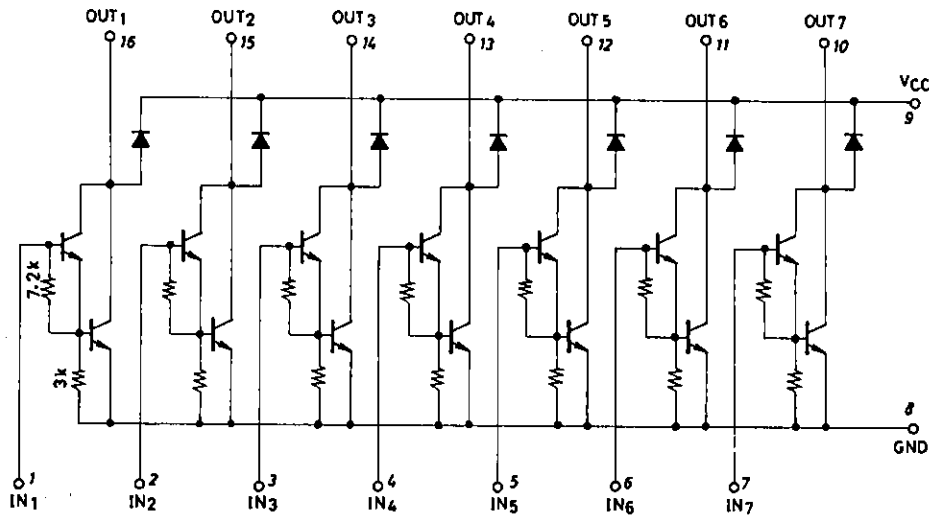
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

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

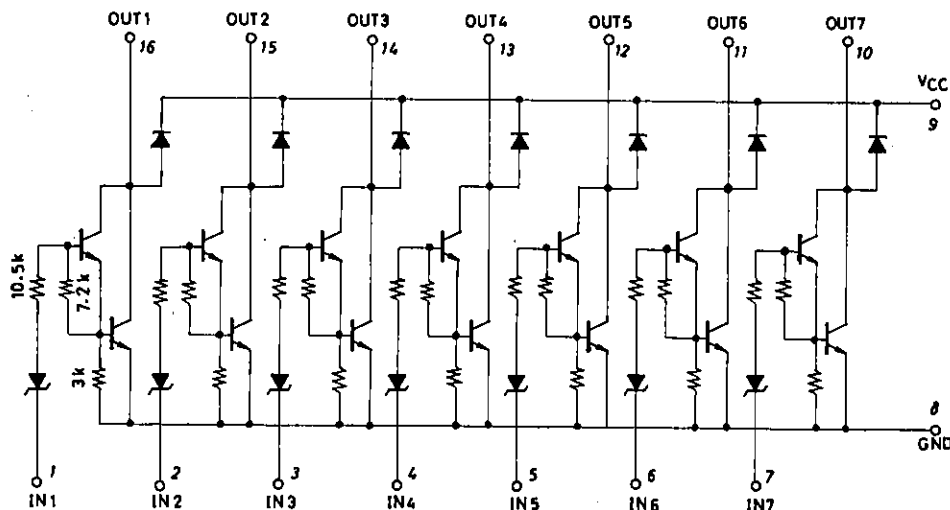
Equivalent Circuits

Unit (resistance: Ω)

LB1231



LB1232



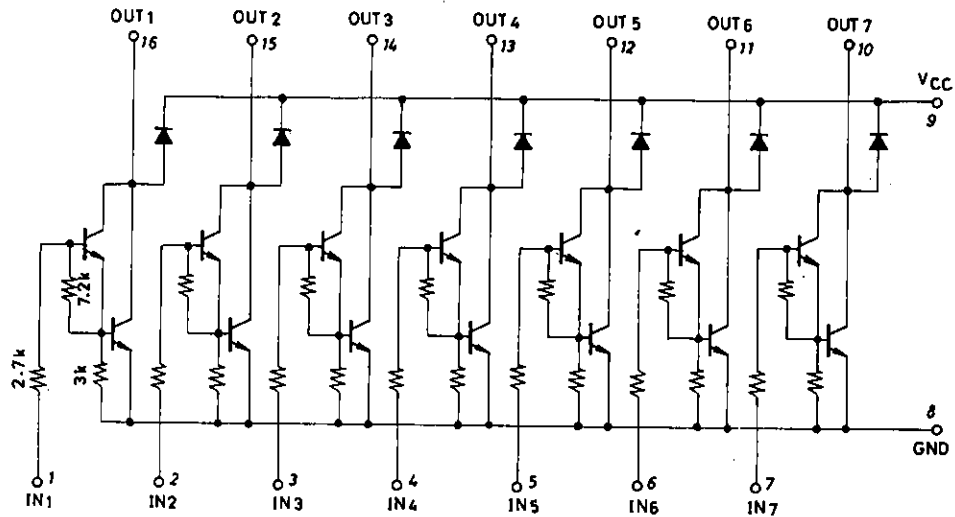
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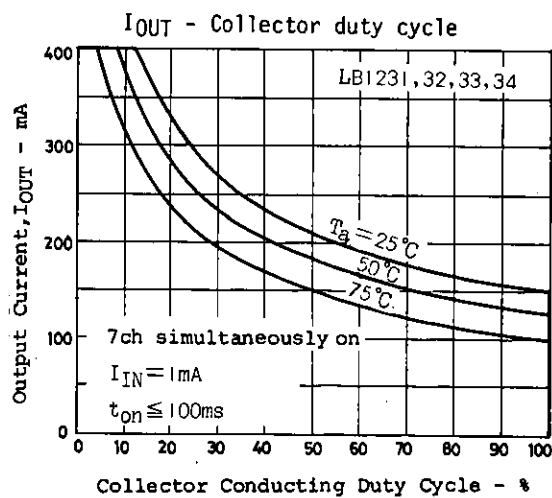
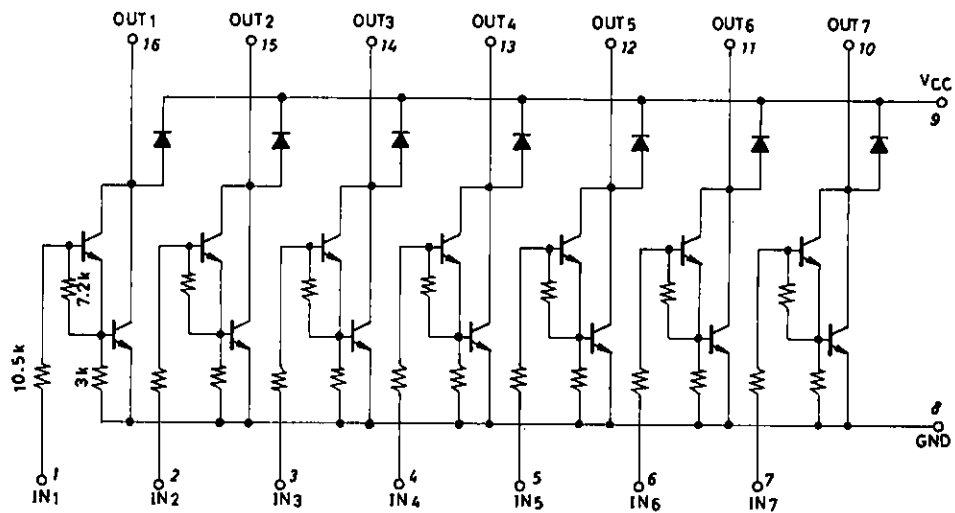
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Unit (resistance: Ω)

LB1233



LB1234



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