

**LB1257****8-Unit, Low-Saturation Driver****Applications**

- 4-phase stepping motor driver of 2 channels.
- Especially suited for X-Y plotter driver (Meeting the requirements for Alps DPG plotter).
- General-purpose 8-unit large current & low saturation voltage driver (Relay, LED, lamp, solenoid, etc.).

**Features**

- Large current capacity (400mA) and low saturation voltage (0.5V max),
- With spark killer diode provided.

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		-0.3 to +7.0	V
Output supply voltage	$V_{OUT}$		-0.3 to +10.0	V
Input supply voltage	$V_{IN}$		-0.3 to +7.0	V
Maximum output current	$I_{OUT}$	Per unit	400	mA
Maximum forward current	$I_{FSM}$	Spark killer diode, pulse width $\leq$ 35ms, duty 5%	400	mA
GND pin flow-out current	$I_{GND}$	Pulse width $\leq$ 35ms	3000	mA
Instantaneous current drain	$I_{CCP}$	Pulse width $\leq$ 35ms, duty 5%	3000	mA
Allowable power dissipation	$P_d\text{ max}$		1.13	W
Operating temperature	$T_{opr}$		-20 to +75	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +125	$^\circ\text{C}$

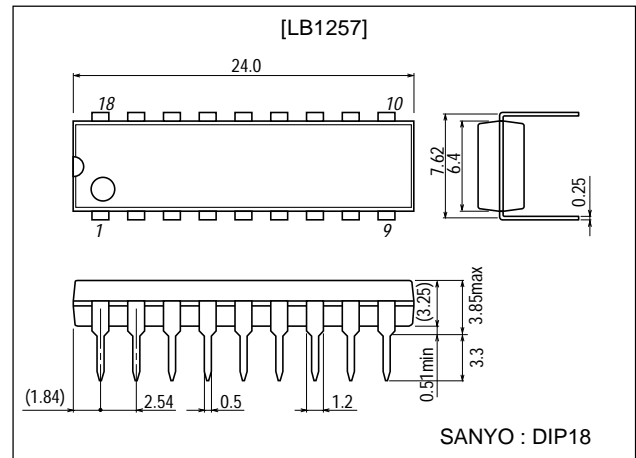
**Allowable Operating Ranges** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	$V_{CC}$		2.3 to 6.0	V
Input H-level voltage	$V_{IH}$	$I_{OUT}=200\text{mA}$	2.3 to 7.0	V
Input L-level voltage	$V_{IL}$	$I_{OUT}\leq 100\mu\text{A}$	-0.3 to +0.7	V

**Package Dimensions**

unit:mm

3007B-DIP18



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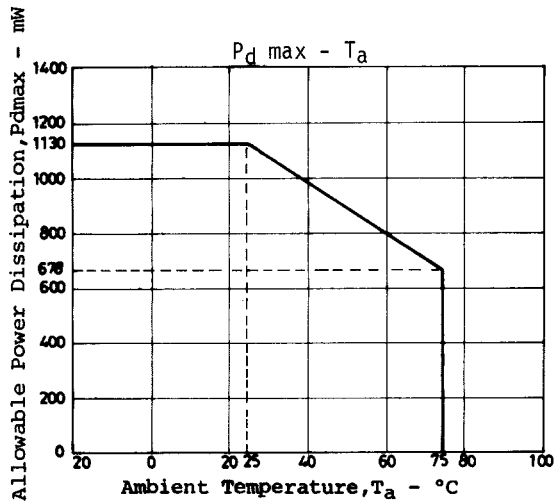
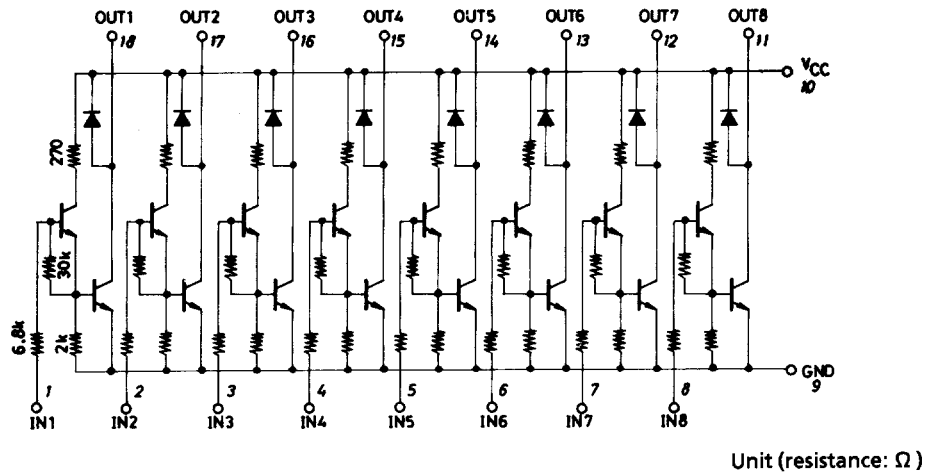
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

# LB1257

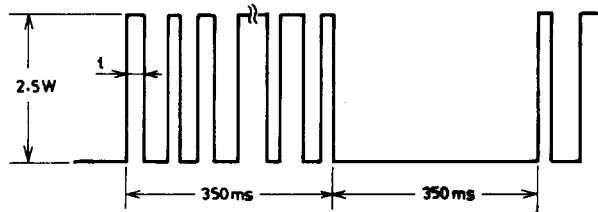
## Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output voltage	$V_{OUT1}$	$V_{IN}=V_{CC}=2.3\text{V}, I_{OUT}=200\text{mA}$			0.4	V
	$V_{OUT2}$	$V_{IN}=3.0\text{V}, V_{CC}=3.5\text{V}, I_{OUT}=200\text{mA}$			0.25	V
	$V_{OUT3}$	$V_{IN}=5.5\text{V}, V_{CC}=6.0\text{V}, I_{OUT}=400\text{mA}$			0.5	V
Output sustain voltage	$V_{O(sus)}$	$V_{IN}$ : open, $I_{OUT}=400\text{mA}, t \leq 10\mu\text{s}$	10			V
Output leakage current	$I_{off}$	$V_{IN}=0.7\text{V}, V_{CC}=6.0\text{V}, V_{OUT}=6.0\text{V}$			100	$\mu\text{A}$
Input current	$I_{IN}$	$V_{IN}=6.0\text{V}, I_{OUT}=0$			1.0	mA
Spark killer diode reverse current	$I_{leak(s)}$	$V_{OUT}=0\text{V}, V_{CC}=6.0\text{V}$			30	$\mu\text{A}$
Spark killer diode forward voltage	$V_{F(s)}$	$I_{F(s)}=400\text{mA}$			3.0	V

## Equivalent Circuit



The loss of the following waveform is allowed at  $T_a=60^\circ\text{C}$



$t(35\text{ms and } 40\% \text{ duty of } 350\text{ms } (P_d=0.5\text{W}))$

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