Monolithic Digital IC

No.863E

LB8050

Intermittent Windshield Wiper Controller

Applications

Intermittent window wiper, seat belt warning lamp, ajar door warning lamp, timer, Schmitt circuit

Features

Performs all functions required for intermittent wipers.

- Any intermittent time settable
- Delayed wipe coupled with washer operation
- 1 to 2 wipes immediately after turning on intermittent switch
- Relay direct driving capability (500mA peak)
- Wide operating voltage range : 8.0 to 16.0V

Absolute Maximum Ratings at Ta = 25°C

				unit
Maximum Supply Voltage	V_{CC} max		16	V
Maximum Output Voltage	V_{OUT} max		18	V
Maximum Output Current	I_O max1	Output : Darlington connection	See Fig.A.	
	I_O max2	Output : Not Darlington connection	See Fig.B.	
Output Surge Current	I_O surge	Pulse width : 5msec. or less, repeat cycle : 1sec. or more, V_{CC} = 8 to 16V, Ta = −30 to +80°C	1000	mA
Allowable Power Dissipation	Pd max	See Fig.C.	690	mW
Storage Temperature	Topr		−50 to +125	°C
Operating Temperature	Topg		−30 to +80	°C

Allowable Operating Range at Ta = 25°C

			unit
Operating Voltage Range	V_{CC}	12±4	V

Electrical Characteristics at Ta = 25°C, V_{CC} = 16V unless otherwise specified

			Test Circuit	min	typ	max	unit
Output Current	I_{OH1}	V_{IN} = 5V, V_{WA} = 2V, V_{WI} = 0V, V_{OH} = 16V	1			100	μA
	I_{OH2}	V_{IN} = 5V, V_{WA} = 2V, V_{WI} = 0V, V_{OH} = 16V	1			100	μA
Output 'L'-Level	V_{OL1}	V_{CC} = 6.4V, I_{O1} = 0.3A, I_{O2} = 4mA, V_{WA} = 0V, V_{WI} = 0V	2			2.1	V
	V_{OL2}	V_{CC} = 6.4V, I_{O1} = 0.3A, I_{O2} = 4mA, V_{WA} = 0V, V_{WI} = 0V	2			1.6	V

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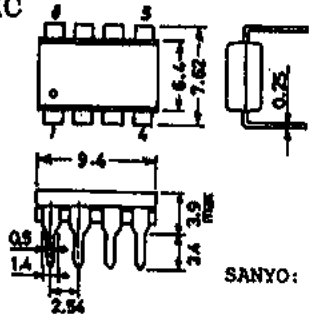
Package Dimensions 3001B-D8IC (unit: mm)



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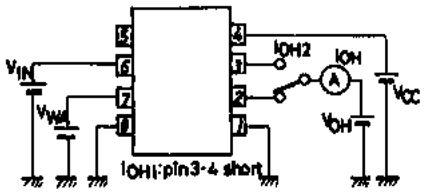
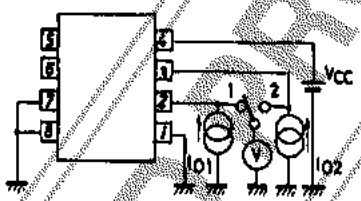
			Test Circuit	min	typ	max	unit
Input 'H'-Level	V_{IH1}	$I_{WA}=50\mu A, V_{WI}=0V$	3	4.7		6.8	V
	V_{IH2}	$I_{IN}=-1mA, V_{WA}=V_{WI}=0V$	4	13.2		15.4	V
	V_{IH3}	$I_{IN}=-1mA, V_{WI}=2V, V_{WA}=0V$	5	13.2		15.4	V
	V_{IH4}	$I_{IN}=-1mA, V_{WA}=V_{WI}=2V$	6	6.6		8.6	V
Input Current	I_{IH1}	$V_{IN}=7V, V_{WA}=2V, V_{WI}=0V$	7			20	μA
	I_{IH2}	$V_{CC}=6.4V, V_{IN}=2.2V, V_{WI}=0V$	8			2	μA
	I_{WA}	$V_{WA}=10V$	9	5		10	mA
	I_{WI}	$V_{WI}=10V$	10	5		10	mA
Supply Current	I_{CC1} ON	$V_{WA}=V_{WI}=0V$	11	5		13	mA
	I_{CC2} OFF	$V_{WA}=V_{WI}=2V$	12	4		9	mA
	I_{CC3} OFF	$V_{WA}=2V, V_{WI}=0V$	13	4		8.5	mA

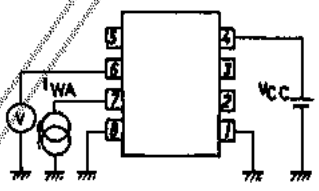
Test Circuits



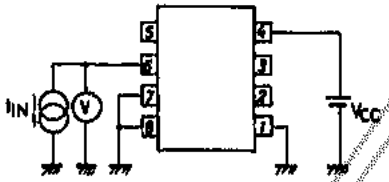
Test Circuit 1 : I_{OH1},I_{OH2}



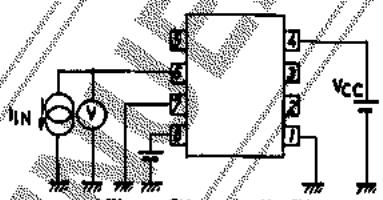
Test Circuit 2 : V_{OL1},V_{OL2},SW_1,SW_2



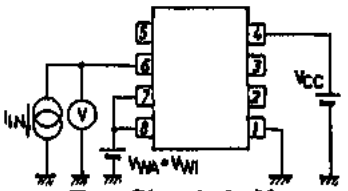
Test Circuit 3 : V_{IH1}



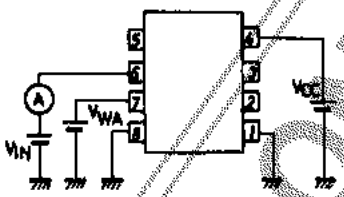
Test Circuit 4 : V_{IH2}



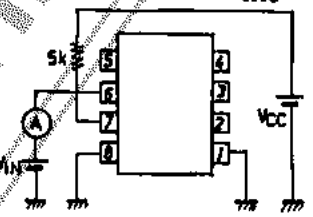
Test Circuit 5 : V_{IH3}



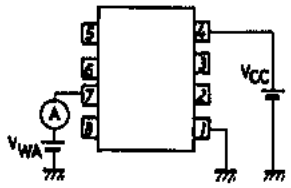
Test Circuit 6 : V_{IH4}



Test Circuit 7 : I_{IH1}

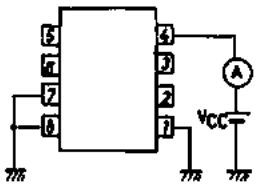


Test Circuit 8 : I_{IH2}

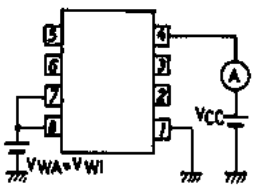


Test Circuit 9 : I_{WA}

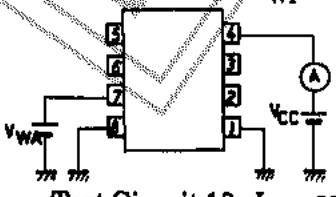
Test Circuit 10 : I_{WI}



Test Circuit 11 : I_{CC1} ON



Test Circuit 12 : I_{CC2} OFF



Test Circuit 13 : I_{CC3} OFF

Fig.A

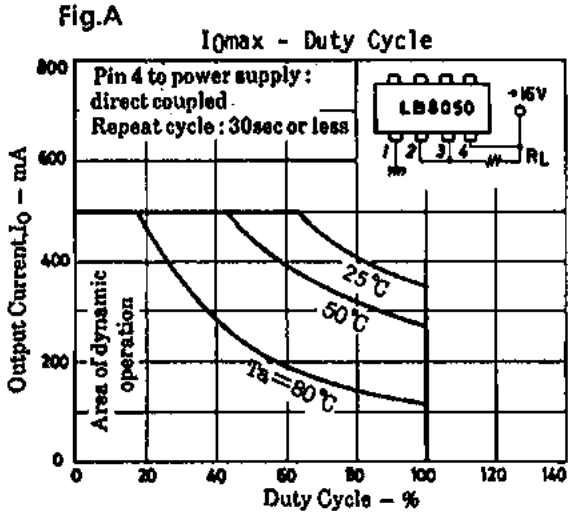


Fig.B

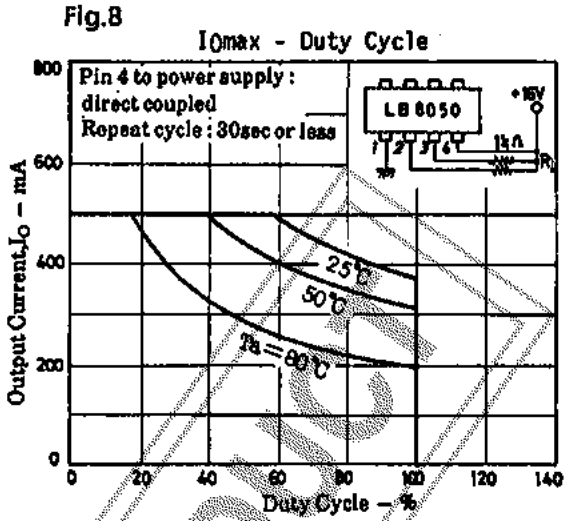
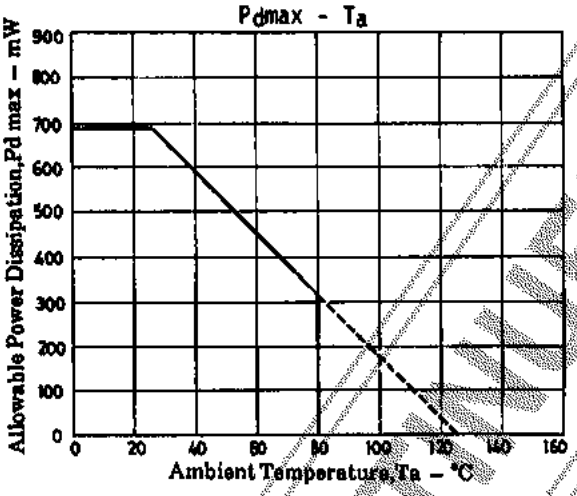
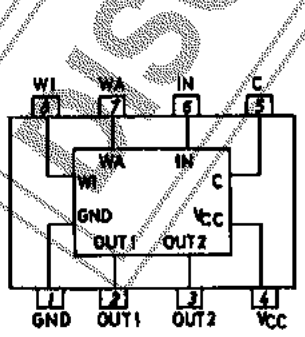
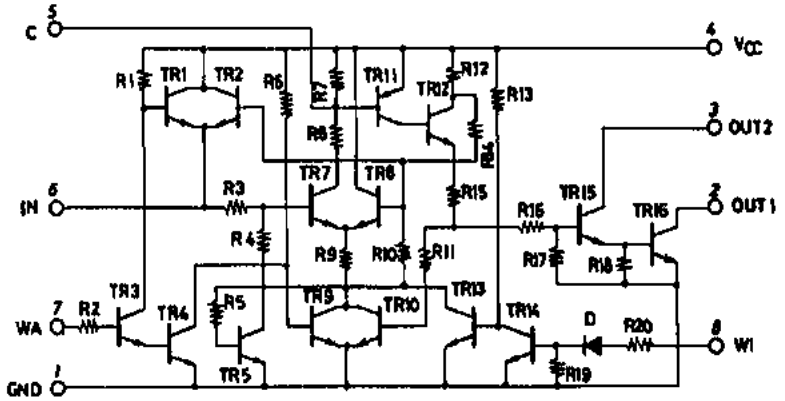


Fig.C

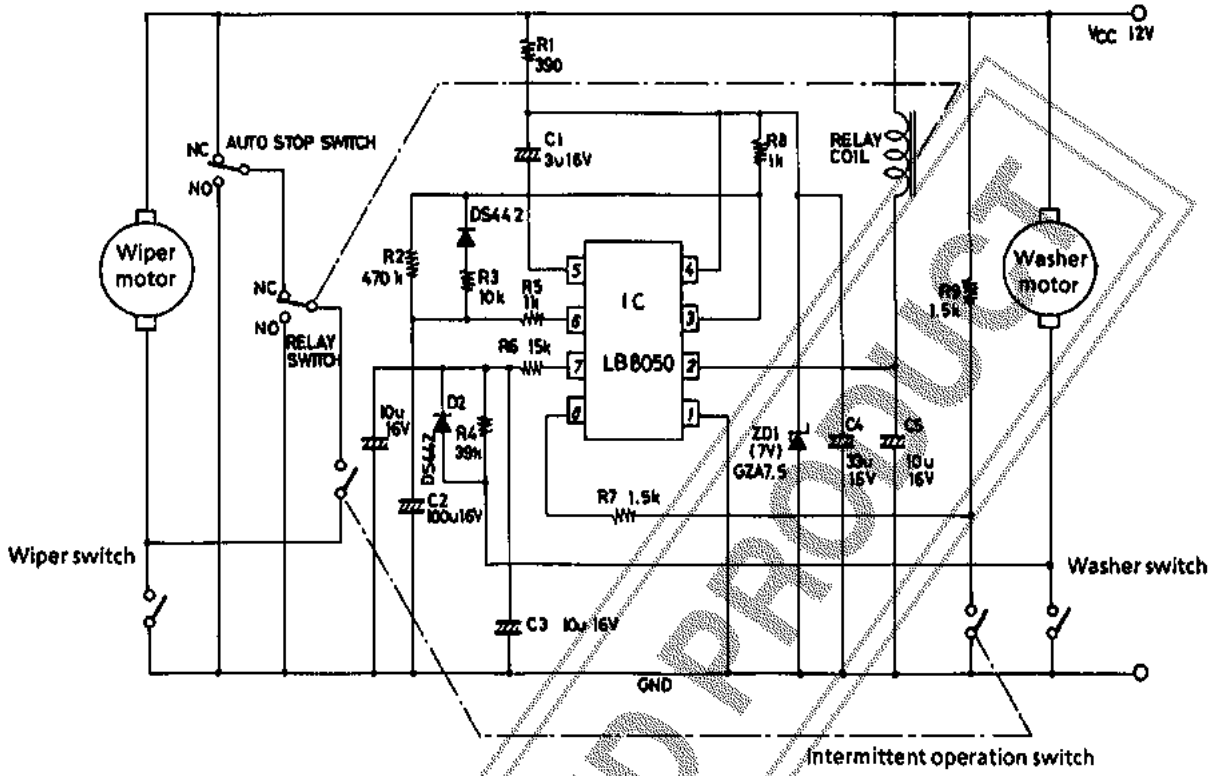


Equivalent Circuit and Block Diagram





Sample Application Circuit : Asynchronous intermittent wiper control



Unit (resistance: Ω, capacitance: F)