

M75471L,P

DUAL PERIPHERAL DRIVER

DESCRIPTION

The M75471 is a semiconductor integrated circuit that incorporates dual positive logic AND driver which consists TTL, large current, high voltage output. It provides an open collector output, permits a current inflow of 700 mA maximum per circuit when the output is Low, and achieves voltage application of up to 80V when the output is High. The average propagation delay time is 100 ns so that high-speed switching is possible. The supply voltage is $5V \pm 5\%$ and the TTL logic device. The M75471 can be used for a variety of applications including relays, lamp drivers, and MOS memory driver.

FEATURES

- Large output current ($I_O = 700\text{mA}$)
- High output voltage ($V_O = 80\text{V}$)
- High-speed switching ($t_{pd} = 100\text{ ns}$)

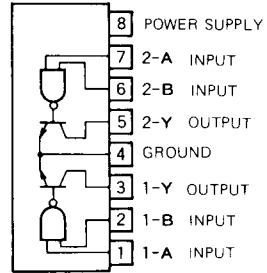
APPLICATION

General digital equipment for industrial or home use

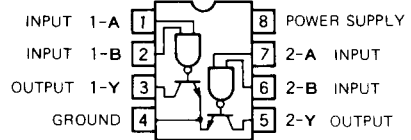
RECOMMENDED OPERATING CONDITIONS

Supply voltage range 4.75V ~ 5.25V
 Supply voltage rating 5V
 Output voltage (when the output is "High") 70V
 "Low" output current (when $V_{OL} = 0.4\text{V}$) 100mA
 "Low" output current (when $V_{OL} = 0.7\text{V}$) 300mA

PIN CONFIGURATION (TOP VIEW)



Outline 8P5

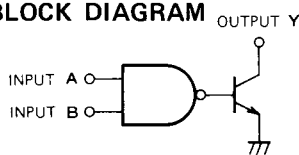


Outline 8P4

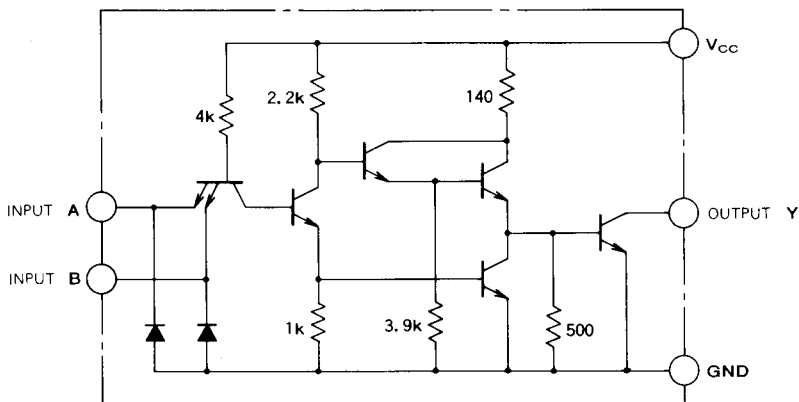
FUNCTION TABLE

A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

BLOCK DIAGRAM



EQUIVALENT CIRCUIT DIAGRAM



* TWO SETS OF THE ABOVE CIRCUIT ARE INCORPORATED.

Unit: Ω

DUAL PERIPHERAL DRIVER

ABSOLUTE MAXIMUM RATINGS ($T_a = 0 \sim 75^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage		7	V
V_I	Input voltage		5.5	V
V_{IE}	Input-emitter voltage		5.5	V
V_O	Output voltage	When the output is High	80	V
I_O	Output current	When the output is Low	700	mA
P_d	Power consumption	$T_a \leq 25^\circ\text{C}$	1.2 (L) / 1 (P)	W
T_{opr}	Operating ambient temperature		0 ~ 75	$^\circ\text{C}$
T_{stg}	Storage temperature		-65 ~ +150	$^\circ\text{C}$

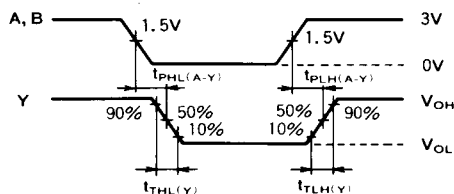
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{IH}	"High" input voltage		2		0	V
V_{IL}	"Low" input voltage				0.8	V
V_{IC}	Input clamp voltage	$V_{CC} = 4.75\text{V}$, $I_{IC} = -12\text{mA}$			-1.5	V
I_{OH}	"High" output current	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{OH} = 80\text{V}$			100	μA
V_{OL}	"Low" output voltage	$V_{CC} = 4.75\text{V}$, $I_{OL} = 100\text{mA}$		0.15	0.4	V
		$V_{IL} = 0.8\text{V}$, $I_{OL} = 300\text{mA}$		0.35	0.7	
I_{IH}	"High" input current	$V_{CC} = 5.25\text{V}$	$V_I = 2.4\text{V}$		40	μA
			$V_I = 4.5\text{V}$		60	
I_{IL}	"Low" input current	$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$		-0.8	-1.6	mA
I_{OCH}	"High" output state supply current	$V_{CC} = 5.25\text{V}$, $V_I = 5\text{V}$		5	11	mA
I_{OCL}	"Low" output state supply current	$V_{CC} = 5.25\text{V}$, $V_I = 0\text{V}$		41	65	mA

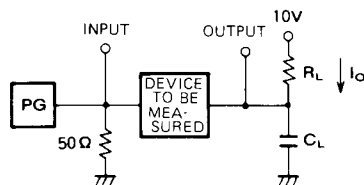
SWITCHING CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
t_{PLH}	"L"→"H"/"H"→"L" output propagation time	$V_{CC} = 5\text{V}$ $f_O \approx 200\text{mA}$ $C_L = 15\text{pF}$, $R_L = 50\ \Omega$ (Note)		100	200	ns
t_{PHL}	Output Y from input A/B			80	145	
t_{TLH}	"L"→"H"/"H"→"L" transition time			25	80	ns
t_{THL}	Output Y			20	80	

TIMING DIAGRAM (Reference voltage = 1.5V)



Note: The following measurement circuit is used.



- (1) PG characteristic: PRR = 1MHz, $t_{PW} = 500\text{ns}$, $V_p = 3V_{p,p}$, $Z_0 = 50\ \Omega$.
- (2) The capacitance C_L includes the floating capacitance of entire wiring as well as the probe input capacitance.