查询TC7SL08F供应商





TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC TC7SL08F, TC7SL08FU

2-INPUT AND GATE

TOSHIBA

The TC7SL08 is a low voltage operative C²MOS 2-INPUT AND GATE fabricated with silicon gate C²MOS technology.

Operating voltage ($V_{CC(opr)}$) is 1~3V equivalent to 1pc or 2pcs of dry cell battery and it achives low power dissipation.

The internal circuit is composed of 3 stages including buffer output, which enables high noise immunity and stable output.

All inputs are equipped with protection circuits against static discharge or transient excess voltage.

FEATURES

- High Speed t_{pd} = 10ns (Typ.) at V_{CC} = 3V
- Low Power Dissipation ……… I_{CC} = 1μA (Max.) at Ta = 25°C
- High Noise Immunity ······· V_{NIH} = V_{NIL}
 - = 28% V_{CC} (Min.)
- Symmetrical Output Impedance |IOH| = IOL = 1mA
- Balanced Propagation Delay Time … t_{pLH}≒t_{pHL}
- Low Voltage Operating VCC (opr) = 1~3.6V

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	Vcc	-0.5~5	V
DC Input Voltage	VIN	-0.5~V _{CC} +0.5	V
DC Output Voltage	Vout	$-0.5 \sim V_{CC} + 0.5$	V
Input Diode Current	ЧК	± 20	mA
Output Diode Current 📂 📄	Іок	± 20	mA
DC Output Current	ΙΟυΤ	± 12.5	mA
DC V _{CC} /Ground Current	Icc	± 25	mA
Power Dissipation	PD	200	mW
Storage Temperature	T _{stg}	- 65~150	°C
Lead Temperature (10s)	ΤL	260	°C



SSOP5-P-0.65A Weight SSOP5-P-0.95 : 0.016g (Typ.) SSOP5-P-0.65A : 0.006g (Typ.)



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LOGIC DIAGRAM





RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	Vcc	1~3.6	V
Input Voltage	VIN	0~V _{CC}	V
Output Voltage	VOUT	0~V _{CC}	V
Operating Temperature	T _{opr}	- 40~85	°C
		0~1000 (V _{CC} = 1.0V)	
Input Rise and Fall Time	t _r , t _f	$0 \sim 500 (V_{CC} = 1.5V)$	ns
		$0 \sim 400 (V_{CC} = 3.0V)$	

DC ELECTRICAL CHARACTERISTICS

						Ta = 25°C			Ta = − 40~85°C		
CHARACTERISTIC SYMBOI		CIR- CUIT	TEST CONDITION		Vcc	MIN.	TYP.	MAX.	MIN.	MAX.	UNIT
High Loyal Input					1.0	0.75	—	—	0.75	—	
High-Level Input Voltage	VIH	—	—		1.5	1.05	—		1.05	—	V
vontage					3.0	2.10	_		2.10	—	
Low-Level Input			_		1.0	—	—	0.25	—	0.25	v
Voltage	VIL	—			1.5	—	—	0.45	—	0.45	
vortage					3.0	—	—	0.90		0.90	
	Vон		V _{IN} = V _{IH}		1.0	0.9	1.0	—	0.9	_	
High-Level Output Voltage				l _{OH} = – 20μΑ	1.5	1.4	1.5	—	1.4	—	
		—			3.0	2.9	3.0	—	2.9	—	V
				I _{OH} = – 1mA	1.5	1.07	1.23	_	0.99	—	
				I _{OH} = – 2.6mA	3.0	2.61	2.68		2.55	—	
	VOL		V _{IN} = V _{IH} or V _{IL}		1.0	—	0.0	0.1	—	0.1	
Low-Level Output Voltage				l _{OL} =20μA	1.5	—	0.0	0.1		0.1	
		—			3.0	—	0.0	0.1		0.1	V
				IOL = 1mA	1.5	—	0.23	0.31	_	0.37	
				IOL = 2.6mA	3.0	—	0.23	0.31		0.33	
Input Leakage Current	IIN	_	$V_{IN} = V_{CC}$	or GND	3.6	_	_	±0.1	_	± 1.0	
Quiescent Supply Current	lcc	_	$V_{IN} = V_{CC}$	or GND	3.6			1.0		10.0	μΑ

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CHARACTERISTIC SYMBOL		TEST	TEST CONDITION	٦				
	CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.			
Output Transition	ttlh				5.0	9.0	ns	
Time	tthl	_	—		5.0	9.0	113	
Propagation	^t PLH				7.5	13.0	ns	
Delay Time	t _{PHL}	_	_	_	7.5	15.0	113	

AC ELECTRICAL CHARACTERISTICS ($C_1 = 15pF$, Input $t_r = t_f = 6ns$, $V_{CC} = 3.3 \pm 0.3V$)

AC ELECTRICAL CHARACTERISTICS ($C_L = 25pF$, Input $t_r = t_f = 6ns$)

CHARACTERISTIC	SYMBOL				Ta = 25°C		Ta = - 4			
CHARACTERISTIC STIVIDOL	CIR- CUIT	TEST CONDITION	V _{CC}	MIN.	TYP.	MAX.	MIN.	MAX.	UNIT	
Output Transition	+			1.0		70	170	_	240	
Time	t _{TLH}	—	—	1.5		25	45	_	55	ns
Time	tthl			3.0		10	15		20	
Propagation	+			1.0	_	70	170	—	210	
Propagation	^t PLH	_	—	1.5		25	45	—	55	ns
Delay Time	^t PHL			3.0	—	10	15	_	20	
Input Capacitance	с _{IN}	_	—			5	10		10	
Power Dissipation	(Note (1)			10				рF
Capacitance	C _{PD}					10				

Note (1): CPD defined as the value of internal equivalent capacitance of IC which is calculated from the operating current consumption without load (refer to Test Circuit).

Average operating current can be obtained by the equation as follows. $I_{CC (opr)} = C_{PD} \cdot V_{CC} \cdot f_{IN} + I_{CC}$

SWITCHING CHARACTERISTICS TEST CIRCUIT





ICC (opr) TEST CIRCUIT



Input waveform is the same as that in case of switching characteristics test.

OUTLINE DRAWING SSOP5-P-0.95







Weight : 0.016g (Typ.)





Weight : 0.006g (Typ.)

Unit : mm