

STRUCTURE Silicon Monolithic Integrated Circuit

TYPE single 2 input NAND gates

PRODUCT SERIES **BU4S11G2**

FEATURES • Low power consumption
 • Wide operating power supply range(3[V]~16[V])

○ ABSOLUTE MAXIMUM RATINGS (Ta=25[°C])

Parameter	Symbol	Limit	Unit
Power Supply Voltage	VDD	(VSS-0.3)~(VSS+18)	V
Power Dissipation	Pd	540(*1)(*2)	mW
Supply current	Iin	±10	mA
Operating temperature	Topr	-40~+85	°C
Storage temperature	Tstg	-55~+150	°C
Input Voltage	Vin	(VSS-0.3)~(VDD+0.3)	V
Maximum junction temperature	Tjmax	150	°C

-This product is designed for protection against radioactive rays.
 (*1) When used at Ta=25[°C] on above, value of above is reduced 4.32[mW] per 1[°C].
 (*2) Power dissipation is the value for mounting 70[mm]×[70mm]×1.6[mm] FR4 glass epoxy circuit board (copper foil area is 3% or less).

○ OPERATING CONDITION (Ta=-40~+85[°C])

Parameter	Symbol	Limit	Unit
Power Supply Voltage	VDD	+3.0~+16.0	V
Input voltage	VIN	0~VDD	V

○ ELECTRICAL CHARACTERISTICS (unless otherwise noted, VSS=VEE=0[V], Ta=25[°C])

Parameter	Symbol	Standard Value			Unit	VDD[V]	Condition
		MIN	TYP	MAX			
Input "H" voltage	VIH	3.5	—	—	V	5	VOUT=0.5[V]
		7.0	—	—	V	10	VOUT=1.0[V]
		11.0	—	—	V	15	VOUT=1.5[V] IOUT <1[μA]
Input "L" voltage	VIL	—	—	1.5	V	5	VOUT=4.5[V]
		—	—	3.0	V	10	VOUT=9.0[V]
		—	—	4.0	V	15	VOUT=13.5[V] IOUT <1[μA]
Input "H" current	I _{IH}	—	—	0.3	μA	15	VIH=15[V]
Input "L" current	I _{IL}	—	—	-0.3	μA	15	VIL=0[V]
Output "H" voltage	VOH	4.95	—	—	V	5	IOUT <1[μA] VIN=VSS
		9.95	—	—	V	10	
		14.95	—	—	V	15	
Output "L" voltage	VOL	—	—	0.05	V	5	IOUT <1[μA] VIN=VDD
		—	—	0.05	V	10	
		—	—	0.05	V	15	
Output "H" current	IOH	-0.51	—	—	mA	5	VOH=4.6[V]
		-2.1	—	—	mA	5	VOH=2.5[V]
		-1.3	—	—	mA	10	VOH=9.5[V]
		-3.4	—	—	mA	15	VIN=13.5[V] VIN=VSS
Output "L" current	IOL	0.51	—	—	mA	5	VOL=0.4[V]
		1.3	—	—	mA	10	VOL=0.5[V]
		3.4	—	—	mA	15	VOL=1.5[V] VIN=VDD
Static supply current	IDD	—	—	0.25	μA	5	VIN=VSS,VDD
		—	—	0.5	μA	10	
		—	—	1.0	μA	15	

○ Switching Characteristics (unless otherwise noted, Ta=25[°C], VSS=VEE=0[V], RL=10[kΩ], CL=50[pF])

Parameter	Symbol	Standard Value			Unit	VDD[V]	Condition
		MIN	TYP	MAX			
Output rising time	t _{TLH}	—	70	—	ns	5	—
		—	35	—	ns	10	
		—	30	—	ns	15	
Output falling time	t _{THL}	—	70	—	ns	5	—
		—	35	—	ns	10	
		—	30	—	ns	15	
Propagation delay time	t _{PLH}	—	85	—	ns	5	—
		—	40	—	ns	10	
		—	30	—	ns	15	
	t _{PHL}	—	85	—	ns	5	—
		—	40	—	ns	10	
		—	30	—	ns	15	
Input capacitance	C _{IN}	—	5	—	pF	—	

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