ELN74SZ04

General Description

The ELN74SZ04 is a CMOS inverter, manufactured using silicon gate CMOS fabrication. CMOS low power circuit operation makes high speed LS-TTL operation achievable. The internal circuit is composed of inverter and buffer, which provide high noise immunity and stable output .As the ELN74SZ04 is integrated into mini molded, SOT-353 /SOT23-5L package, high density mounting is possible.

Features

◆High speed operation : tpd = 2.6ns (TYP.)
◆Operating voltage range : 1.2V ~ 6.0V
◆Low power consumption : 1μA (MAX.)
◆CMOS inverter
◆Ultra small package : SOT-353
SOT23-5L

Applications

◆Palmtops
◆Digital equipment
◆Portable electronic products

Package

◆SOT-353/SOT23-5L

(Top View)

Functions

Input	Output
A	**Y**
L	H
H	L

H=High Level
L=Low Level

Pin Configuration

Pin Number	Pin Name	Function Description
1	B	Input B
2	A	Input A
3	GND	Ground
4	Y	Output Y
5	Vcc	Power supply

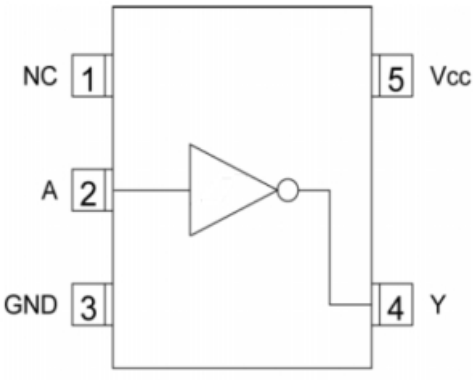


Fig 1. Pin Configuration

Ordering Information

Product name	Package	Mark	Symbol
ELN74SZ04KR	SOT353	Z04K	INV
ELN74SZ04MR	SOT23-5L	Z04M	INV

Absolute Maximum Ratings

Supply voltage----------0.5V to 7V

Output voltage ---------- -0.5V to Vcc+0.3V

Input voltage----------0.5V to 7V

Output current----------±25mA

Ground current----------±50mA

Storage temperature range ----------65℃ to 150℃

Lead temperature(soldering)----------260℃

Power dissipation PD（On PCB board，25）

SOT-353---------- 150mW

SOT23-5L----------250 mW

Recommended Operating Environment

Supply voltage ----------2V to 5.5V

Output voltage ----------0V to VCC

Input voltage ----------0V to VCC

Operating temperature---------- -40℃ to 85℃

Output current----------±4mA@3V

Output current ----------±8mA@4.5V

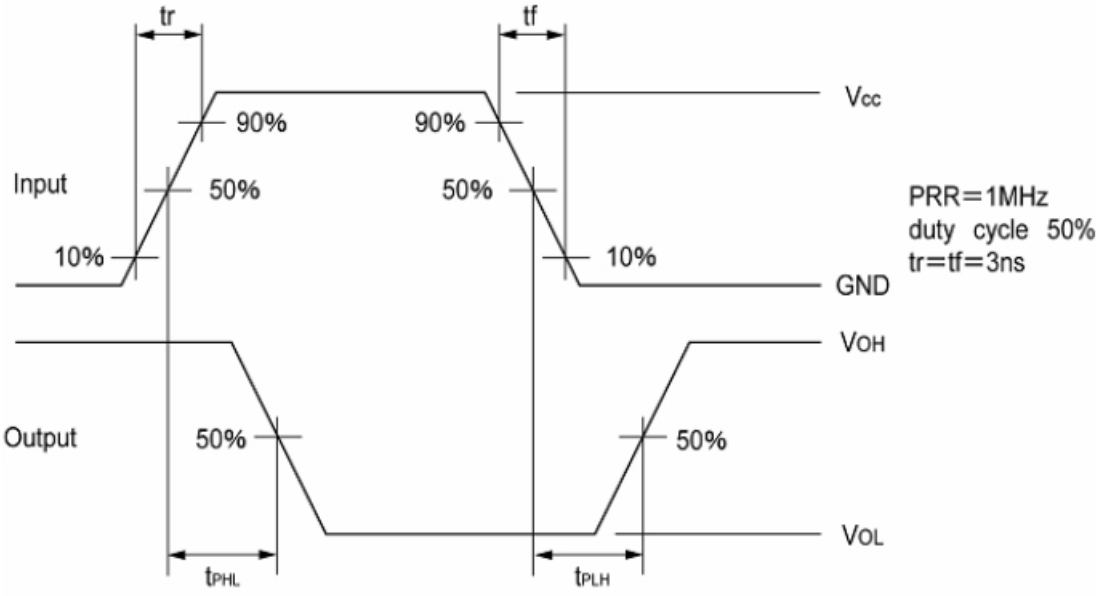
Input signal rise and fall time---------- 0-100ns/V@3.3V

Input signal rise and fall time ---------- 0-20ns/V@5.0V

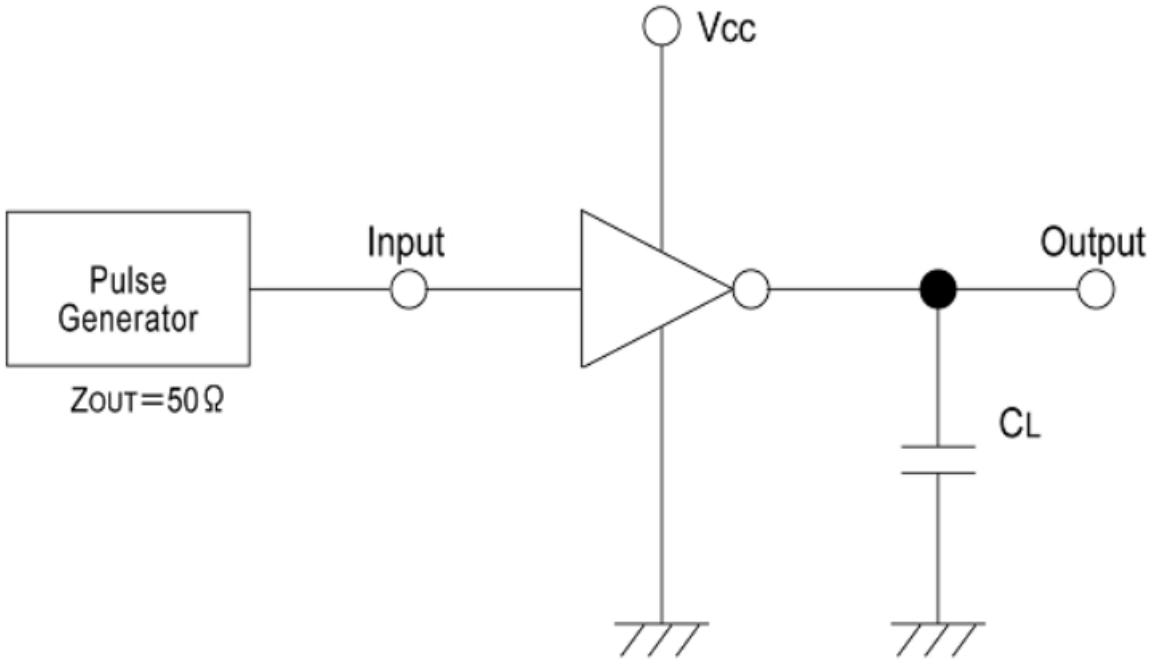
Electrical Characteristics

Parameter	Symbol	Voltage(V)	Conditions		Ta=25℃			Ta=-40-85℃		Unit
					Min	Typ	Max	Min	Max	
Input voltage	V_{IH}	1.2			0.9	—	—	0.9	—	V
		2.0			1.5	—	—	1.5	—	
		3.0			2.1	—	—	2.1	—	
		5.5			3.85	—	—	3.85	—	
	V_{IL}	1.2			—	—	0.3	—	0.3	V
		2.0			—	—	0.5	—	0.5	
		3.0			—	—	0.9	—	0.9	
		5.5			—	—	1.65	—	1.65	
Output voltage	V_{OH}	2.0	$V_{IN}=V_{IH}$ Or $V_{IN}=V_{IL}$	IOH=-50μA	1.9	2.0	—	1.9	—	V
		3.0			2.9	3.0	—	2.9	—	
		4.5			4.4	4.5	—	4.4	—	
		3.0		IOH=-4mA	2.58	—	—	2.48	—	
		4.5		IOH=-8mA	3.94	—	—	3.80	—	
	V_{OL}	2.0	$V_{IN}=V_{IH}$	IOH=50μA	—	—	0.1	—	0.1	V
		3.0			—	—	0.1	—	0.1	
		4.5			—	—	0.1	—	0.1	
		3.0		IOH=4mA	—	—	0.36	—	0.44	
		4.5		IOH=8mA	—	—	0.36	—	0.44	
Input current	I_{IN}	0-5.5	V_{IN}=Vcc or GND		-0.1	—	0.1	-1.0	1.0	μA
Quiescent current	I_{CC}	5.5	V_{IN}=Vcc or GND I_{OUT}=0μA		—	—	1	—	10	μA
Delay time	t_{PLH}	3.3	C_L=15pF		—	2.7	7.1	1.0	8.5	nS
			C_L=50pF		—	4.1	10.6	1.0	12.0	
		5.0	C_L=15pF		—	2.1	5.5	1.0	6.5	
			C_L=50pF		—	3.2	7.5	1.0	8.5	
	t_{PHL}	3.3	C_L=15pF		—	2.5	7.1	1.0	8.5	
			C_L=50pF		—	3.9	10.6	1.0	11.0	
		5.0	C_L=15pF		—	2.0	5.5	1.0	6.5	
			C_L=50pF		—	3.5	7.5	1.0	8.5	
Input capacitance	C_{IN}	5.0	V_{IN}=Vcc or GND		—	2	10	—	10	pF
Power dissipation capacitance	C_{PD}	—	No Load, f=1MHz		—	9.3	—	—	—	pF

Timing Chart



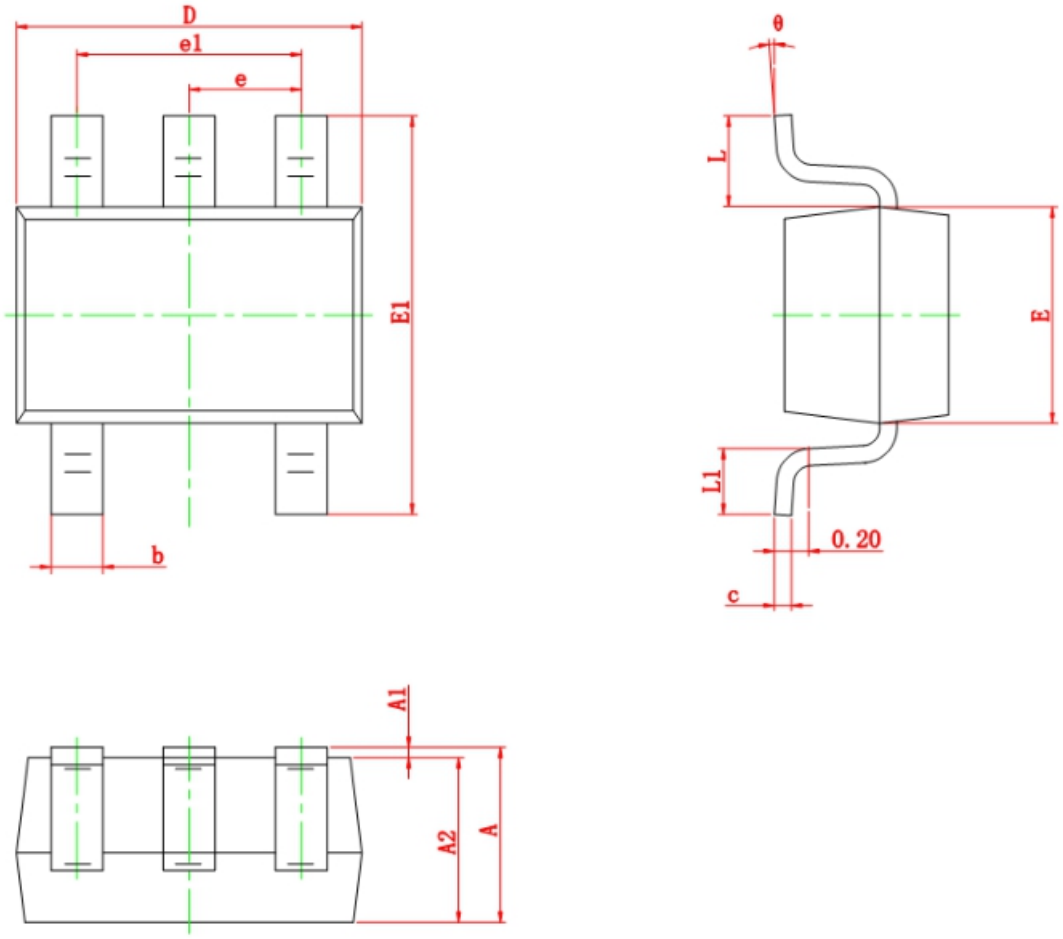
Test Circuit



Note: Open output when measuring supply current

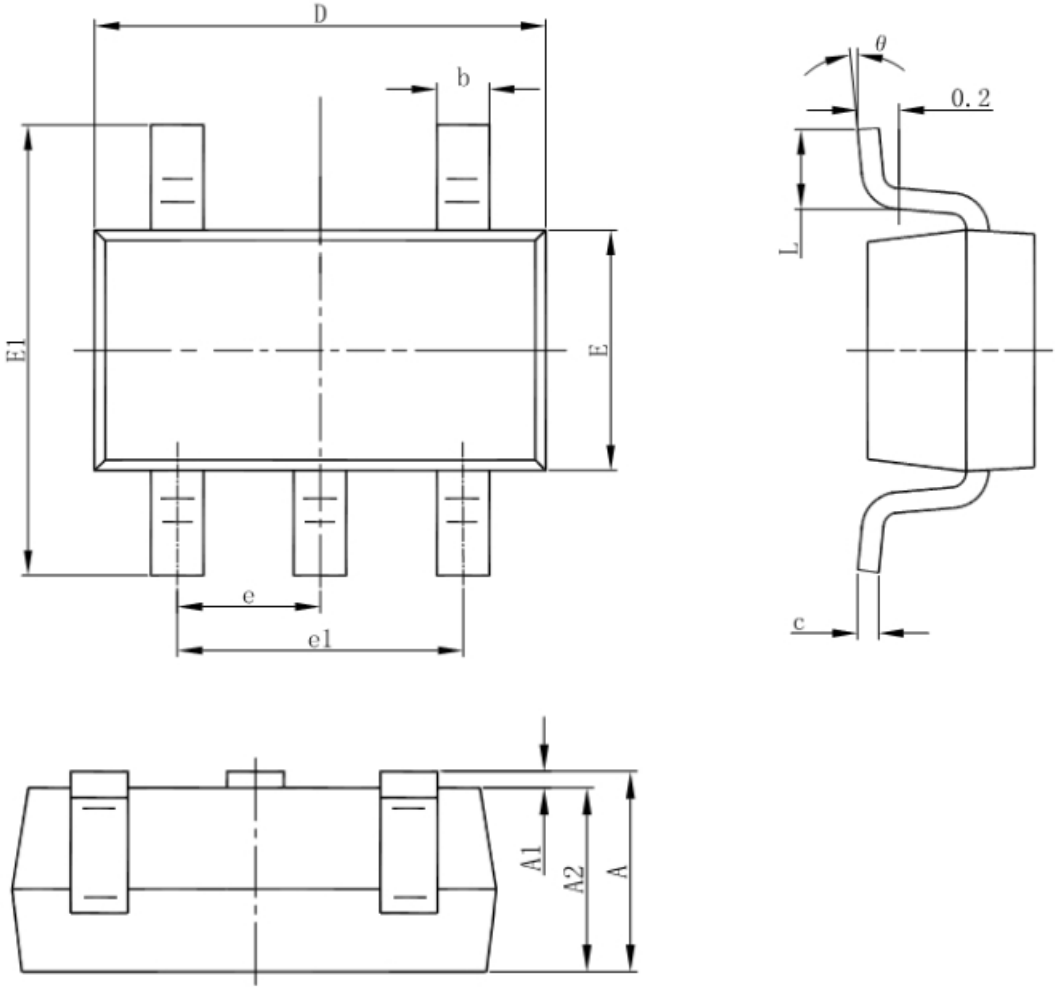
Package Information

◆SOT-353



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

◆SOT23-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°