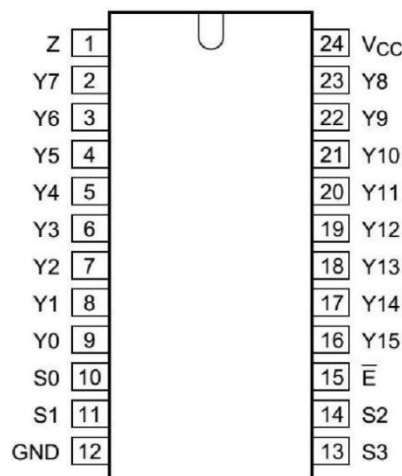## 1. DESCRIPTION

XL4067 and XL4067-SS,XL4067TS are digitally controlled analog switching multiplexer/resolver with low on- resistance, very low cut-off leakage current, and internal address decoding features. The on- resistance remains relatively stable throughout the input signal range, and the circuit can be used for digital or analog applications.

XL4067 and XL4067-SS,XL4067TS are 16-channel multiplexer/resolver with a suppressor and four binary input control terminals A~D. Any switch in the 16 channels can be selected through the corresponding switch selection.

2. FEATURES

- Low turn-off leakage current
- Channel resistance matching
- Low static power consumption Low-current Standby mode
- Crosstalk between low channels
- Wide operating voltage range: 2~10V
- Low noise
- Package option: XL4067 (SOP24), XL4067-SS (SSOP24), XL4067TS (TSSOP24)

3. PIN CONFIGURATIONS

Z	1	24 V_{CC}
Y7	2	23 Y8
Y6	3	22 Y9
Y5	4	21 Y10
Y4	5	20 Y11
Y3	6	19 Y12
Y2	7	18 Y13
Y1	8	17 Y14
Y0	9	16 Y15
S0	10	15 $\overline{E}$
S1	11	14 S2
GND	12	13 S3

4. LIMIT PARAMETERS

Symbol	Parameter	Typ	Unit
V_{DD}	DC voltage range	-0.5 ~ +11V	V
V_{IN}, V_{OUT}	Input or output voltage range (DC or transient)	-0.5 ~ V++0.5	V
I_{IN}	Input current (DC or transient)	±20	mA
I_{SW}	Switching current	±25	mA
P_D	Power dissipation	500	mW
T_A	Ambient temperature range	-25to +85	℃
T_{STG}	Storage temperature range	-65 to +150	℃

5. RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Typ	Unit
V_{DD}	DC voltage range	2 ~ +10V	V
V_{IN}	Input voltage	Gnd～Vdd	V
V_{SW}	Switching voltage	Gnd～Vdd	V
T_A	Operating ambient temperature range	-25to +85	℃

Truth table					
Control input					Select passage
S0	S1	S2	S3	E	
X	X	X	X	H	-
L	L	L	L	L	Y0
H	L	L	L	L	Y1
L	H	L	L	L	Y2
H	H	L	L	L	Y3
L	L	H	L	L	Y4
H	L	H	L	L	Y5
L	H	H	L	L	Y6
H	H	H	L	L	Y7
L	L	L	H	L	Y8
H	L	L	H	L	Y9
L	H	L	H	L	Y10
H	H	L	H	L	Y11
L	L	H	H	L	Y12
H	L	H	H	L	Y13
L	H	H	H	L	Y14
H	H	H	H	L	Y15

Internal logic circuit

Functional block diagram:
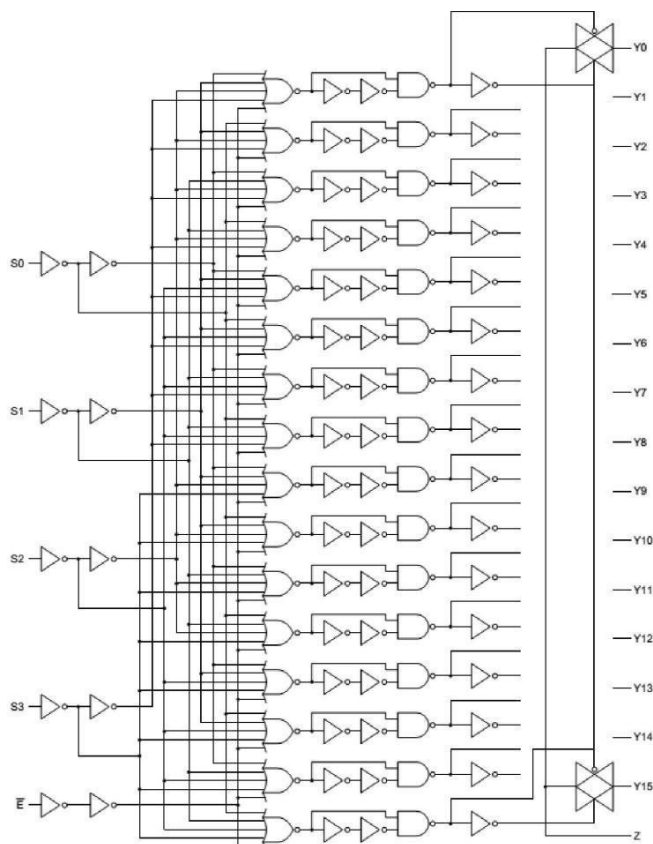
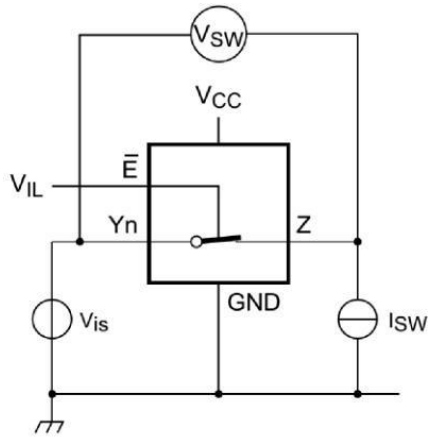## Schematic diagram (single path)
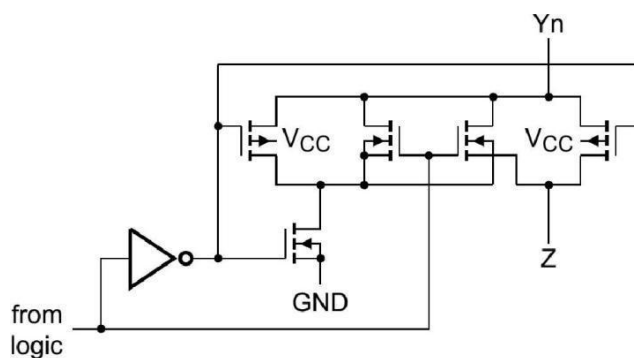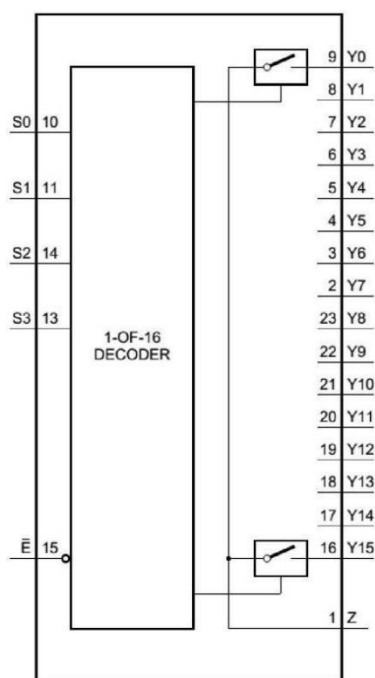
Electrical characteristics: static parameter

| Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{on（Peak）}$	Resistance in the on state (Peak)	Vis＝Vcc to Gnd	-	-	-	-
		Vcc=4.5V;Isw=1000uA	-	110	180	Ω
		Vcc=6.0V;Isw=1000uA	-	95	160	Ω
		Vcc=9.0V;Isw=1000uA	-	75	130	Ω
$R_{on（Rall）}$	Resistance in the on state (Rall)	Vis＝Gnd to Vcc	-	-	-	-
		Vcc=4.5V;Isw=1000uA	-	90	160	Ω
		Vcc=6.0V;Isw=1000uA	-	80	140	Ω
		Vcc=9.0V;Isw=1000uA	-	70	120	Ω
V_{IH}	High level input voltage	Vcc=2.0V	1.5	1.2	-	V
		Vcc=4.5V	3.15	2.4	-	V
		Vcc=6.0V	4.2	3.2	-	V
		Vcc=9.0V	6.3	4.7	-	V
V_{IL}	Low-level input voltage	Vcc=2.0V	-	0.8	0.5	V
		Vcc=4.5V	-	2.1	1.35	V
		Vcc=6.0V	-	3.2	1.80	V
		Vcc=9.0V	-	4.3	2.70	V
I_I	Input leakage current	Vi=Vcc or GND	-	-	-	-
		Vcc=6.0V	-	-	±0.1	μA
		Vcc=10.0V	-	-	±0.2	μA
$I_{S(OFF)}$	Off leakage current	Vcc=10.0V;Vi=Vih or Vil |Vsw|=Vcc-GND	-	-	-	-
		Per channel	-	-	±0.1	μA
		All channels	-	-	±0.8	μA
$I_{S(ON)}$	Open leakage current	Vcc=10.0V; Vi=Vih or Vil |Vsw|=Vcc-GND	-	-	±0.8	μA
I_{CC}	Supply current	Vi=Vcc or Gnd;Vis=GND or Vcc	-	-	-	-
		Vos=Vcc or Gnd	-	-	-	-
		Vcc=6.0V	-	-	8.0	μA
		Vcc=10.0V	-	-	16.0	μA

$$R_{ON} = \frac{V_{SW}}{I_{SW}}$$

Ron test circuit
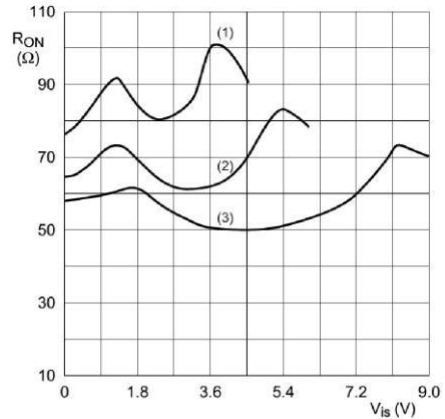
$V_{is} = 0\ V$ to $(V_{CC} - GND)$
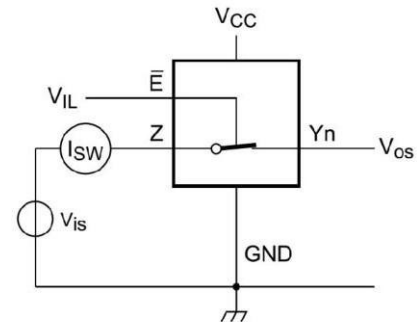
(1) $V_{CC} = 4.5\ V$
(2) $V_{CC} = 6.0\ V$
(3) $V_{CC} = 9.0\ V$

Relationship between Ron and Vis
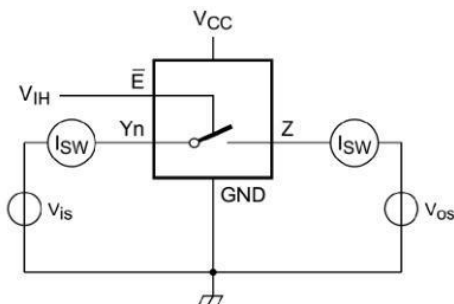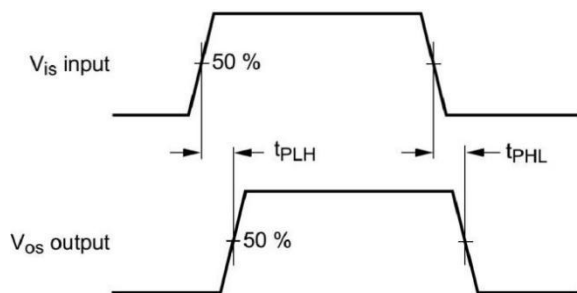
$V_{is} = V_{CC}$ and $V_{os} = GND$
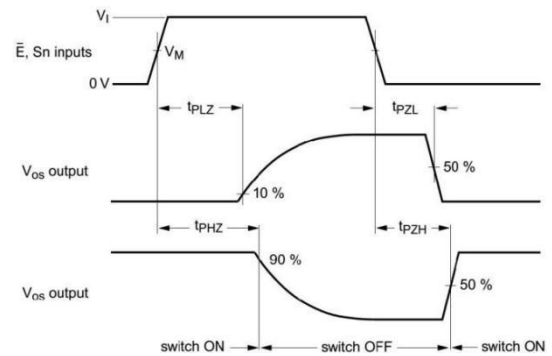$V_{is} = GND$ and $V_{os} = V_{CC}$

Off leakage current test circuit

$V_{is} = V_{CC}$ and $V_{os} = open$
$V_{is} = GND$ and $V_{os} = open$

Open leakage current test circuit
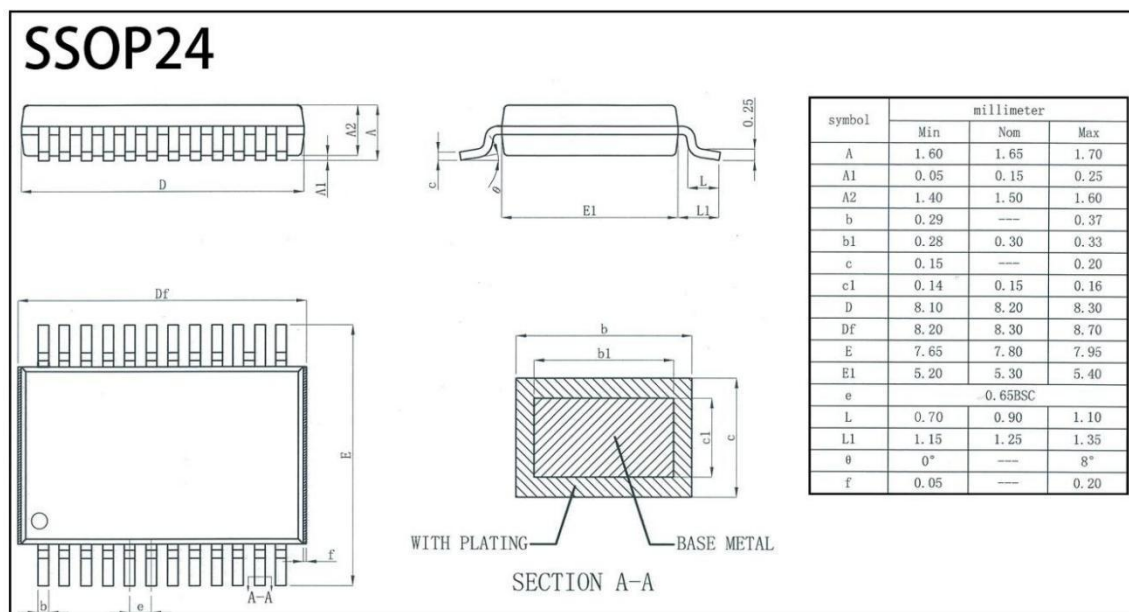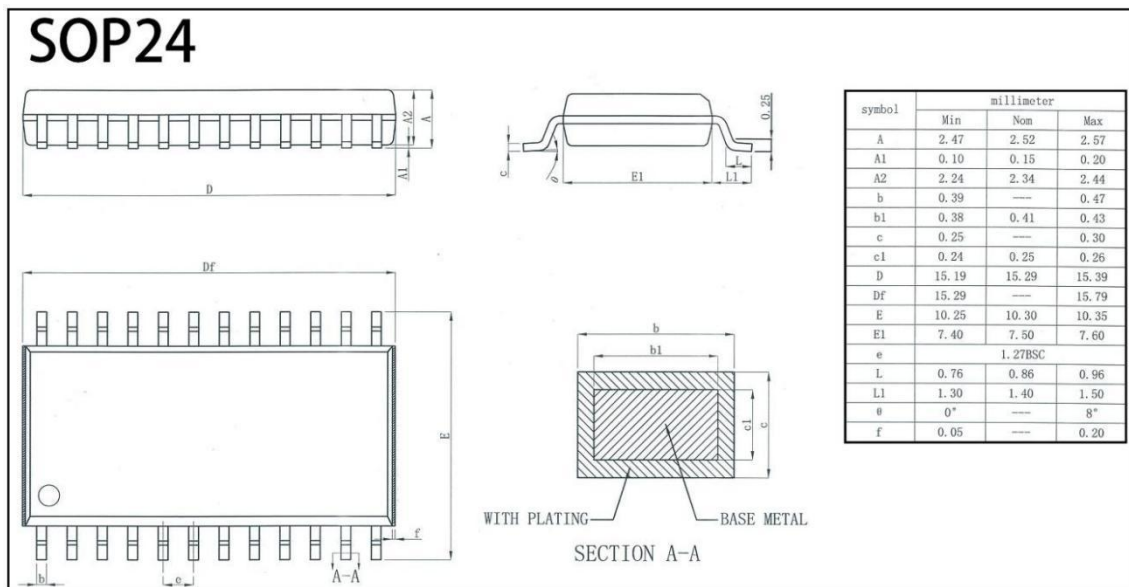
Delay from input Vis to output Vos

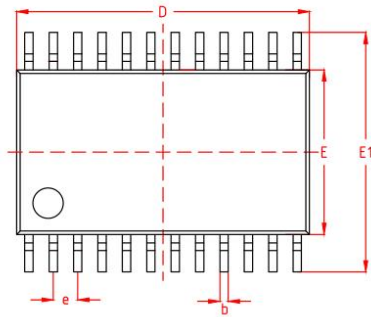On or off time

6. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (℃)	MSL	Transport Media	Package Quantity
XL4067	XL4067	SOP24	15.29 * 7.50	- 25to 85	MSL3	T&R	2000
XL4067-SS	XL4067-SS	SSOP24	8.20 * 5.30	- 25to 85	MSL3	Tube 50	2500
XL4067TS	XL4067TS	TSSOP24	7.80 * 4.40	- 25to 85	MSL3	Tube 50	2500

7. DIMENSIONAL DRAWINGS

SOP24

symbol	millimeter		
	Min	Nom	Max
A	2.47	2.52	2.57
A1	0.10	0.15	0.20
A2	2.24	2.34	2.44
b	0.39	----	0.47
b1	0.38	0.41	0.43
c	0.25	----	0.30
c1	0.24	0.25	0.26
D	15.19	15.29	15.39
Df	15.29	----	15.79
E	10.25	10.30	10.35
E1	7.40	7.50	7.60
e	1.27BSC		
L	0.76	0.86	0.96
L1	1.30	1.40	1.50
θ	0°	----	8°
f	0.05	----	0.20

WITH PLATING — BASE METAL

SECTION A-A

SSOP24

symbol	millimeter		
	Min	Nom	Max
A	1.60	1.65	1.70
A1	0.05	0.15	0.25
A2	1.40	1.50	1.60
b	0.29	----	0.37
b1	0.28	0.30	0.33
c	0.15	----	0.20
c1	0.14	0.15	0.16
D	8.10	8.20	8.30
Df	8.20	8.30	8.70
E	7.65	7.80	7.95
E1	5.20	5.30	5.40
e	0.65BSC		
L	0.70	0.90	1.10
L1	1.15	1.25	1.35
θ	0°	----	8°
f	0.05	----	0.20

WITH PLATING — BASE METAL

SECTION A-A

TSSOP24

TOP VIEW

SIDE VIEW
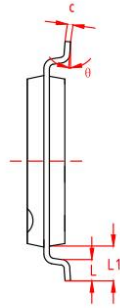
SIDE VIEW
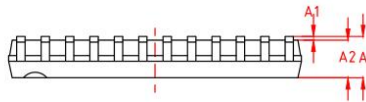
Dimensions			
SYMBOL	MIN	NOMINAL	MAX
A	–	–	1.20
A1	0.05	–	0.15
A2	0.80	1.00	1.05
b	0.19	–	0.30
c	0.09	–	0.20
D	7.70	7.80	7.90
E	4.30	4.40	4.50
E1	6.20	6.40	6.60
e	0.65 BSC		
L1	1.00 REF		
L	0.45	0.60	0.75
θ	0°	–	8°

Unit:mm

[if you need helpcontact us. Xinluda reserves the right to changethe above information withoutpriornotice]