



DESCRIPTION

The AL2G17 is dual buffers with Schmitt-trigger input. The AL2G17 is designed for 1.65V to 5.5V V_{CC} operation

The AL2G17 contains two buffer and performs the Boolean function $Y=A$.

The AL2G17 function as two independent buffers with Schmitt-trigger inputs so the device has different input threshold levels for positive -going (V_{T+}) and negative going (V_{T-}) signals to provide hysteresis (ΔV_{T+}) which makes the device tolerant to slow or noisy input signals.

The AL2G17 is fully specified for partial-power-down applications using I_{off} . The I_{off} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

The AL2G17 is available in SOT-26 and SC70-6 packages.

ORDERING INFORMATION

Package Type	Part Number	
SOT-26 SPQ: 3,000pcs/Reel	E6	AL2G17E6R
		AL2G17E6VR
SC70-6 SPQ: 3,000pcs/Reel	C6	AL2G17C6R
		AL2G17C6VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

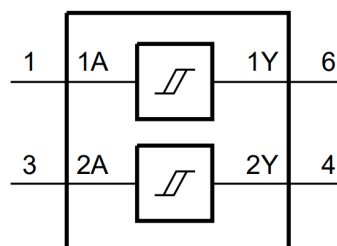
FEATURES

- Wide supply voltage range from 1.65V to 5.5V
- CMOS Low Power Consumption: 1 μ A (Max)
- Supports 5V V_{CC} Operation
- Inputs Accept Voltages to 5.5V
- High Output Drive: ± 24 mA at $V_{CC}=3.0$ V
- I_{off} Supports Partial -Power-Down Mode Operation
- Operating Temperature: -40°C to +125°C

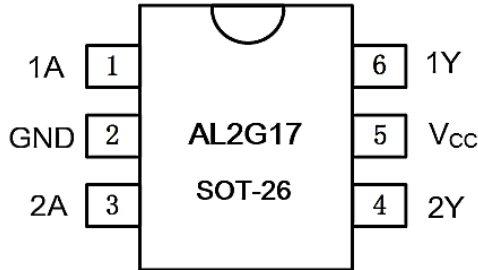
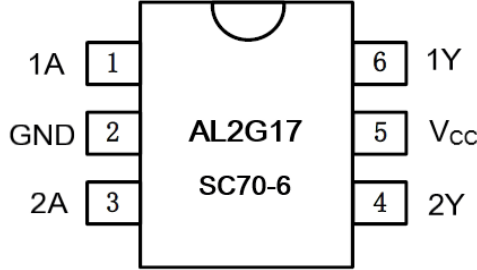
APPLICATION

- AC Receivers
- Audio Docks: Portable
- Blu-ray Players and Home Theaters
- MP3 Players/Recorders
- Personal Digital Assistants (PDAs)
- Power: Telecom/Server AC/DC Supply: Single Controller: Analog and Digital
- Solid State Drives (SSDs): Client and Enterprise
- TVs: LCD/Digital and High-Definition (HDTVs)
- Tablets: Enterprise
- Video Analytics: Server
- Wireless Headsets, Keyboards, and Mice
- Desktops or Notebook PCs
- Digital Video Cameras (DVC)
- Mobile Phones
- Personal Navigation Device (GPS)

FUNCTIONAL BLOCK DIAGRAM



**PIN DESCRIPTION**

 <p>SOT-26, E6 Top View</p>		 <p>SC70-6, C6 Top View</p>	
Pin #		Symbol	Function
SOT-26	SC70-6		
1	1	1A	Input1
2	2	GND	Ground
3	3	2A	Input2
4	4	2Y	Open-drain output 2
5	5	V _{CC}	Power Pin
6	6	1Y	Open-drain output 1

FUNCTION TABLE

Input	Output
A	Y
H	H
L	L

Y=A

H=Hight Voltage

L=Low Voltage Level



ABSOLUTE MAXIMUM RATINGS

Over operating free-air temperature range, unless otherwise noted ⁽¹⁾

V _{CC} , Supply Voltage Range		-0.5V ~ 6.5V
V _I , Input Voltage Range ⁽²⁾		-0.5V ~ 6.5V
V _O , Voltage range applied to any output in the high-impedance or power-off state ⁽¹⁾		-0.5V ~ 6.5V
V _O , Voltage range applied to any output in the high or low state ^{(1) (2)}		-0.5V ~ V _{CC} +0.5V
I _{IK} , Input Clamp Current	V _I <0	-50mA
I _{OK} , Output Clamp Current	V _O <0	-50mA
I _O , Continuous Output Current		±50mA
Continuous Current Through V _{CC} or GND		±100mA
T _J , Junction Temperature		150°C
T _{STG} , Storage Temperature		-65°C ~ 150°C
R _{θJA} , Junction-to-Ambient thermal resistance	SOT-25	273.8 °C/W
	SC70-6	214.7 °C/W
V _(ESD) , Electrostatic Discharge	Human-body model (HBM)	±8000V
	Machine model (CDM)	±500V

Stresses above may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

(1)The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.

(2)The value of V_{CC} is provided in the Recommended Operating Conditions table.

RECOMMENDED OPERATING CONDITIONS

T_A = +25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Max.	Unit
Supply Voltage	V _{CC}	Operating	1.65	5.5	V
		Data retention only	1.5	5.5	
Input voltage	V _I		0	5.5	V
Output voltage	V _O		0	5.5	V
Operating temperature	T _A		-40	125	°C

All unused inputs of the device must be held at V_{CC} or GND to ensure proper device operation.

AC ELECTRICAL CHARACTERISTICS

T_A = +25°C, unless otherwise noted.

Parameter	Symbol	Conditions		Temp	Min.	Typ.	Max.	Unit
Propagation Delay	t _{pd}	V _{CC} =1.8V±0.15V	C _L =30pF, R _L =500Ω	-40°C~+125°C	-	21	-	ns
		V _{CC} =2.5V±0.2V	C _L =30pF, R _L =500Ω	-40°C~+125°C	-	7.8	-	
		V _{CC} =3.3V±0.3V	C _L =50pF, R _L =500Ω	-40°C~+125°C	-	5.7	-	
		V _{CC} =5V±0.5V	C _L =50pF, R _L =500Ω	-40°C~+125°C	-	4.2	-	
Input Capacitance	C _i	V _{CC} =3.3V	V _I =V _{CC} or GND	+25°C	-	4	-	pF
Power Dissipation Capacitance	C _{pd}	V _{CC} =1.8V	f=10MHz	+25°C	-	21	-	pF
		V _{CC} =2.5V			-	22	-	
		V _{CC} =3.3V			-	22	-	
		V _{CC} =5V			-	25	-	

All unused inputs of the device must be held at V_{CC} or GND to ensure proper device operation.



DC ELECTRICAL CHARACTERISTICS

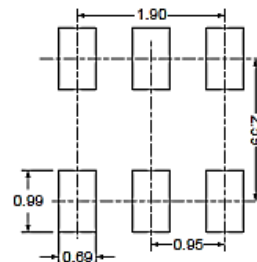
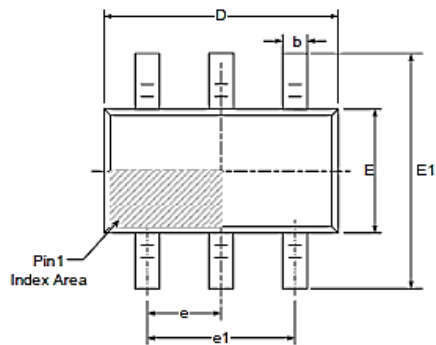
T_A = +25°C, unless otherwise noted.

Parameter		Conditions	Temp	Min.	Typ.	Max.	Unit
V _{T+}	Positive going input threshold voltage	V _{CC} =1.65V	-40°C~+125°C	0.75	-	1.05	V
		V _{CC} =2.3V		1.25	-	1.55	
		V _{CC} =3.0V		1.50	-	2.10	
		V _{CC} =4.5V		2.30	-	3.00	
		V _{CC} =5.5V		2.80	-	3.40	
V _{T-}	Negative going input threshold voltage	V _{CC} =1.65V	-40°C~+125°C	0.30	-	0.60	V
		V _{CC} =2.3V		0.35	-	0.65	
		V _{CC} =3.0V		0.45	-	0.75	
		V _{CC} =4.5V		0.70	-	1.00	
		V _{CC} =5.5V		0.85	-	1.15	
V _{T+}	Hysteresis (V _{T+} -V _{T-})	V _{CC} =1.65V	-40°C~+125°C	0.35	-	0.60	V
		V _{CC} =2.3V		0.60	-	1.20	
		V _{CC} =3.0V		1.05	-	1.65	
		V _{CC} =4.5V		1.60	-	2.00	
		V _{CC} =5.5V		19.5	-	2.25	
V _{OH}		I _{OH} = -100μA, V _{CC} =1.65V to 5.5V	-40°C~+125°C	V _{CC} -0.1	-	-	V
		I _{OH} =-4mA, V _{CC} =1.65V		1.2	-	-	
		I _{OH} =-8mA, V _{CC} =2.3V		1.9	-	-	
		I _{OH} =-16mA, V _{CC} =3V		2.4	-	-	
		I _{OH} =-24mA, V _{CC} =3V		2.3	-	-	
		I _{OH} =-32mA, V _{CC} =4.5V		3.8	-	-	
V _{OL}		I _{OL} =100μA, V _{CC} =1.65V to 5.5V	-40°C~+125°C	-	-	0.1	V
		I _{OL} =4mA, V _{CC} =1.65V		-	-	0.45	
		I _{OL} =8mA, V _{CC} =2.3V		-	-	0.3	
		I _{OL} =16mA, V _{CC} =3V		-	-	0.4	
		I _{OL} =24mA, V _{CC} =3V		-	-	0.55	
		I _{OL} =32mA, V _{CC} =4.5V		-	-	0.55	
I _I	A input	V _I =5.5V or GND, V _{CC} = 0V to 5.5V	+25°C	-	±0.1	±1	μA
			-40°C~+125°C	-	-	±5	
I _{off}		V _I or V _O =5.5V, V _{CC} =0V	+25°C		±0.1	±1	μA
			-40°C~+125°C			±10	
I _{CC}		V _I =5.5V or GND, I _O =0, V _{CC} =1.65V to 5.5V	+25°C	-	0.1	1	μA
			-40°C~+125°C	-	-	10	
ΔI _{CC}		One input at V _{CC} - 0.6V, Anther inputs at V _{CC} or GND V _{CC} =3V to 5.5V	-40°C~+125°C	-	-	500	μA

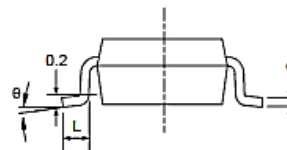
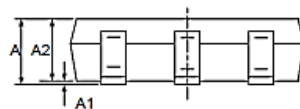


PACKAGE INFORMATION

Dimension in SOT-26 (Unit: mm)



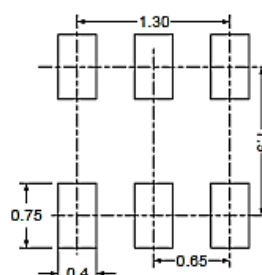
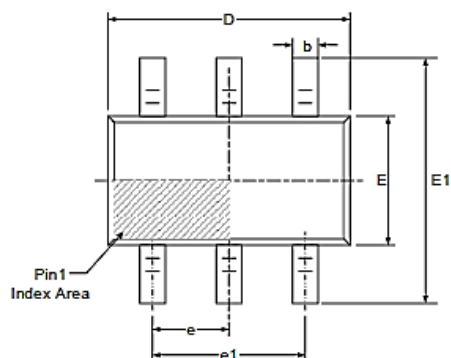
RECOMMENDED LAND PATTERN



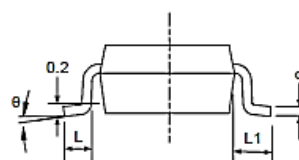
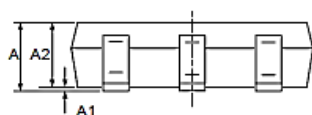
Symbol	Millimeters	
	Min	Max
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950 BSC	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°



Dimension in SC70-6 (Unit: mm)



RECOMMENDED LAND PATTERN



Symbol	Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 BSC	
e1	1.300 BSC	
L	0.260	0.460
L1	0.525	
θ	0°	8°



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