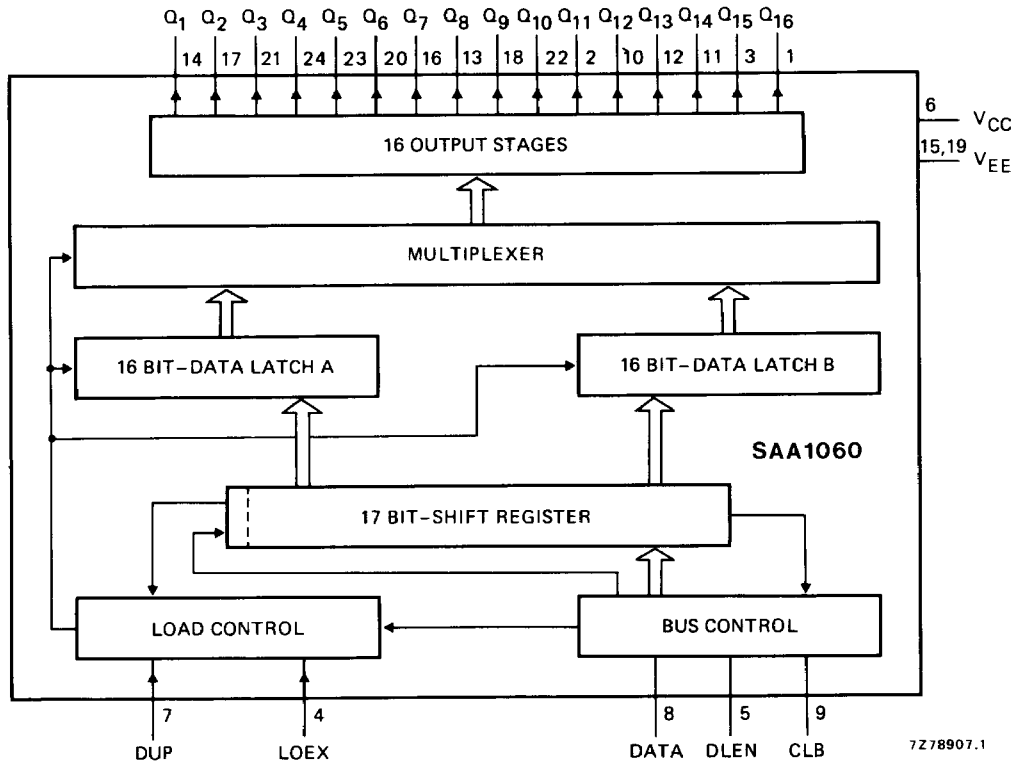


LED DISPLAY/INTERFACE CIRCUIT



Features

Fig. 1 Block diagram.

- Driving 7, 14, 16-segment displays.
- Driving linear displays, bar graph displays for analogue functions.
- Serial to parallel decoder.
- Bus control for the selection of 18-bit words.
- 2 x 16-bit latch.
- Duplex operation for two modes of output: static (16 bit) or dynamic (2 x 16 bit).
- Data transfer control.
- 2 outputs for higher output current (80 mA).

QUICK REFERENCE DATA

Supply voltage range	V_{CC}	4 to 6 V
Operating ambient temperature range	T_{amb}	-20 to +80 °C
Maximum input frequency	f_I	typ. 50 kHz
Supply current	I_{CC}	typ. 60 mA
Output current	I_Q	< 40 mA
Output current (Q_8 and Q_{16} only)	I_Q	< 80 mA

PACKAGE OUTLINE

24-lead DIL; plastic (SOT101A).

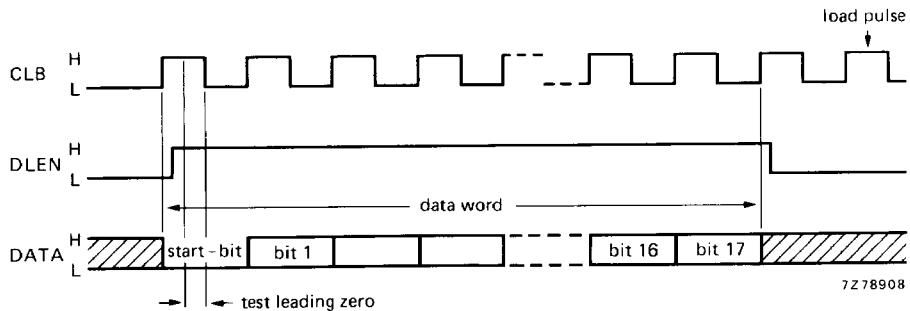


Fig. 3 Pulse diagram of the 16-bit data transmission.

Each data word must start with a leading zero. The SAA1060 checks the data word for the correct length (18 bits) and also for the leading zero.

The actual data is switched directly to the appropriate outputs. For switching on a segment, a '0' (LOW) is necessary at the appropriate data bit.

Data selection input (DUP)

The logic states at input DUP determine which of the two latch contents can be found on the output.

- 0 = latch A contents
- 1 = latch B contents

Load control input (LOEX)

Input LOEX determines the operation mode in which the device is able to work.

- 0 = duplex mode, i.e. output synchronized with the duplex signal
- 1 = d.c. mode, i.e. output direct from the by DUP selected data latch.

When operating in duplex mode at 50 Hz, the time between two data words to be transmitted must be > 21 ms.

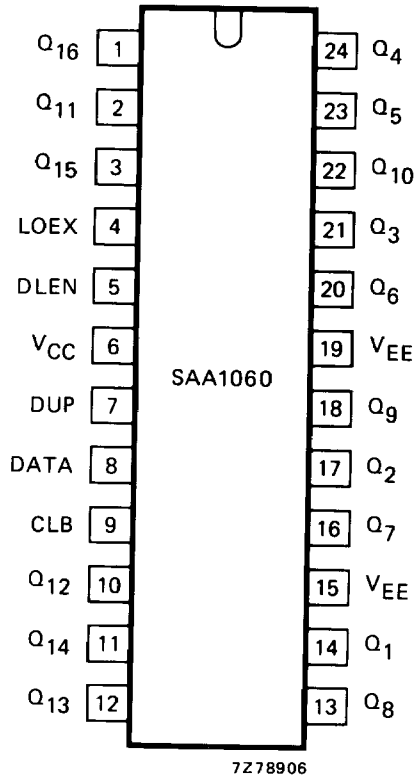


Fig. 4 Pinning diagram.

RATINGS ($V_{EE} = 0$)

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Supply voltage range

 V_{CC} $-0,3$ to $+7$ V

Total power dissipation

 P_{tot} max. 900 mW

Operating ambient temperature range

 T_{amb} -20 to $+80$ °C

Storage temperature range

 T_{stg} -25 to $+125$ °C

CHARACTERISTICS

 $V_{EE} = 0$; $T_{amb} = 25\text{ }^{\circ}\text{C}$; unless otherwise specified

	V_{CC} V	symbol	min.	typ.	max.		conditions
Supply voltage	—	V_{CC}	4	5	6	V	
Supply current	5	I_{CC}	—	60	—	mA	
Inputs DATA, CLB, DLEN, LOEX							
input voltage HIGH	5	V_{IH}	2	—	5	V	$V_I = 0$
input voltage LOW	5	V_{IL}	—	—	1	V	
input current LOW	5	$-I_{IL}$	—	—	20	μA	
maximum input frequency	5	f_I	—	50	—	kHz	
Input DUP							
input voltage HIGH	5	V_{IH}	0,8	—	12	V	
input voltage LOW	5	V_{IL}	—6	—	0,4	V	
input current HIGH	5	I_{IH}	0,01	—	12	mA	
maximum input frequency	5	f_I	—	50	—	kHz	
Outputs Q_1 to Q_7 , Q_9 to Q_{15}							
output voltage HIGH	5	V_{QH}	—	—	16,8	V	$I_{QH} = 0$ $I_{QL} = 40\text{ mA}$
output voltage LOW	5	V_{QL}	—	—	0,5	V	
output current LOW duplex mode	5	I_{QL}	—	—	60	mA	{ peak value at sinusoidal voltage
d.c. mode	5	I_{QL}	—	20	40	mA	
Outputs Q_8 and Q_{16}							
output voltage HIGH	5	V_{QH}	—	—	16,8	V	$I_{QH} = 0$ $I_{QL} = 80\text{ mA}$
output voltage LOW	5	V_{QL}	—	—	0,5	V	
output current LOW duplex mode	5	I_{QL}	—	—	120	mA	{ peak value at sinusoidal voltage
d.c. mode	5	I_{QL}	—	40	80	mA	