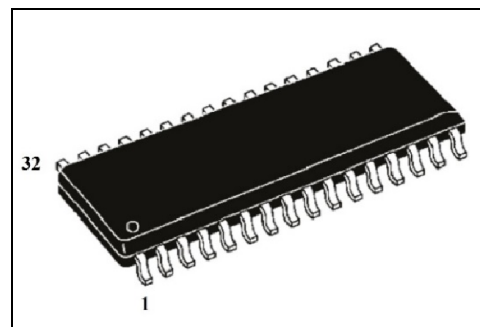


Features

- Embedded 8-bit shift register
- Embedded 8-bit level converter
- $U_{CC1} = 3,3 \pm 0,3 \text{ V}$
- $U_{CC2} = -5 \text{ V} \pm 10\%$
- Temperature range: $-40 \text{ }^{\circ}\text{C}$ to $+85 \text{ }^{\circ}\text{C}$
- Package type: SOIC-32



Description

K5853HP015-S IC is a serial-to-parallel converter with a differential physical interface for a load with a characteristic impedance of 120 ohms.

K5853HP015-S block diagram is shown in Figure 1. The conversion of the serial code into parallel is carried out by an 8-bit shift register. The IC contains two Registers for fast switching of two types of data. The built-in test circuit allows for determination of the IC operational capability. The differential physical interface makes it possible to increase the noise immunity of data transmission to actuating devices.

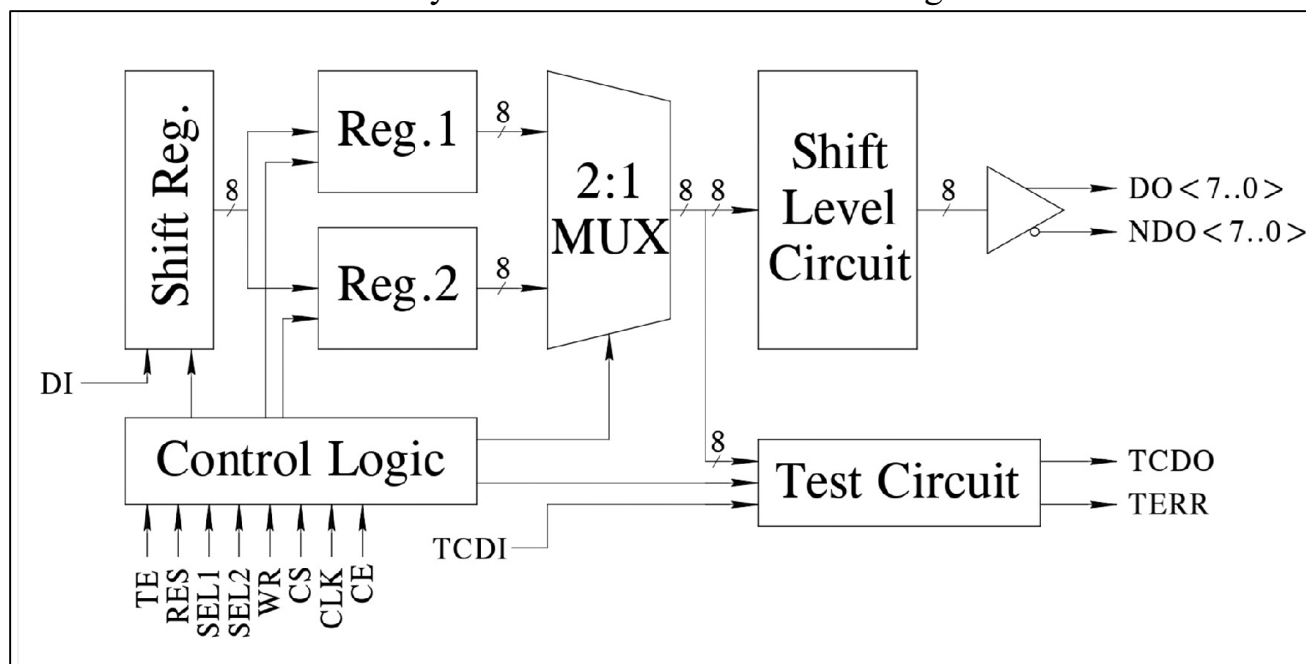
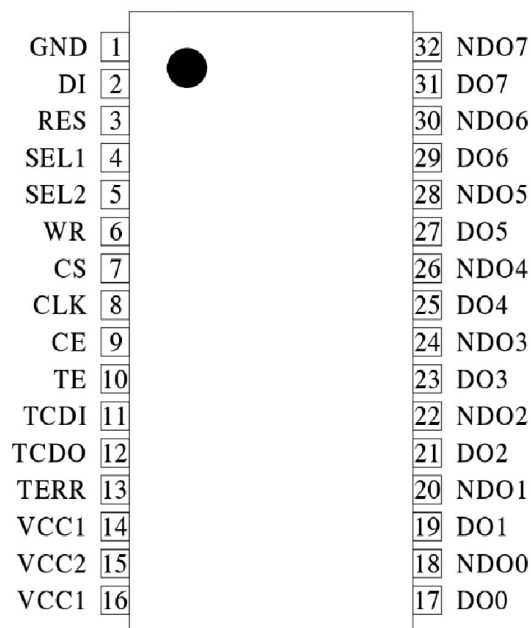


Figure 1 – K5853HP015-S block diagram

PIN CONNECTIONS



The functional purpose of the pins of the IC is shown in Table 1.

Table 1

Pin #	Pin Designation	Functional pin assignment	Pin type
1	GND	Ground	–
2	DI	Serial Data	In
3	RES	Reset	In
4	SEL1	Select Register 1	In
5	SEL2	Select Register 2	In
6	WR	Write Enable	In
7	CS	Chip Select	In
8	CLK	Clock	In
9	CE	Chip Enable	In
10	TE	Test Enable	In
11	TCDI	Test Control Data Input	In
12	TCDO	Test Control Data Output	Out
13	TERR	Test Error	Out
14	VCC1	Power + 3 V	–
15	VCC2	Power – 5 V	–
16	VCC1	Power + 3 V	–
17	DO0	Direct Data, bit 0	Out
18	NDO0	Inverse Data, bit 0	Out
19	DO1	Direct Data, bit 1	Out

Pin #	Pin Designation	Functional pin assignment	Pin type
20	NDO1	Inverse Data, bit 1	Out
21	DO2	Direct Data, bit 2	Out
22	NDO2	Inverse Data, bit 2	Out
23	DO3	Direct Data, bit 3	Out
24	NDO3	Inverse Data, bit 3	Out
25	DO4	Direct Data, bit 4	Out
26	NDO4	Inverse Data, bit 4	Out
27	DO5	Direct Data, bit 5	Out
28	NDO5	Inverse Data, bit 5	Out
29	DO6	Direct Data, bit 6	Out
30	NDO6	Inverse Data, bit 6	Out
31	DO7	Direct Data, bit 7	Out
32	NDO7	Inverse Data, bit 7	Out

Electrical characteristics

Absolute Maximum Ratings are shown in Table 2.

Table 2

Symbol	Description	Limits	Units
V_{CC1}	Power + 3 V	4,0	V
V_{CC2}	Power – 5 V	-6,0	V
V_I	Input Voltage	-0,5 to $V_{CC1}+0,5$	V
V_{TS}	Voltage applied to High-Z output	-0,5 to $V_{CC1}+0,5$	V
T_{STG}	Storage temperature	-60 to +150	°C
T_L	Lead temperature (soldering, 10sec)	+300	°C

Recommended Operating Conditions are shown in Table 3.

Table 3

Symbol	Description	Limits		Units
		Min	Max	
V _{CC1}	Power + 3 V	3,0	3,6	V
V _{CC2}	Power – 5 V	-5,5	-4,5	V
V _{IL}	Input Low Voltage	0	0,8	V
V _{IH}	Input High Voltage	2,0	V _{CC1}	V
V _{OL}	Ouput Low Voltage (Power + 3 V)	–	0,8	V
V _{OH}	Ouput High Voltage (Power + 3 V)	2,0	–	V
V _{OD}	Differential Drive Output	-5,0	-1,5	V
I _{CC1}	No-Load Supply Current (Power + 3 V)	–	100	μA
I _{CC2}	No-Load Supply Current (Power – 5 V)	–	50	μA
T _A	Operating ambient temperature	-40	+85	°C

Switching characteristics

Switching characteristics are shown in Table 4.

Table 4

Symbol	Description	Limits		Units
		Min	Max	
f _C	Clock Frequency		20	MHz
t _{PLH} , t _{PLH}	Driver Clock to Output	10	60	ns
t _{SKEW}	Driver Output Skew to Output		10	ns
t _R , t _F	Driver Rise or Fall Time	3	40	ns

Package outline

SOIC-32 Package outline is shown in Fig. 2.

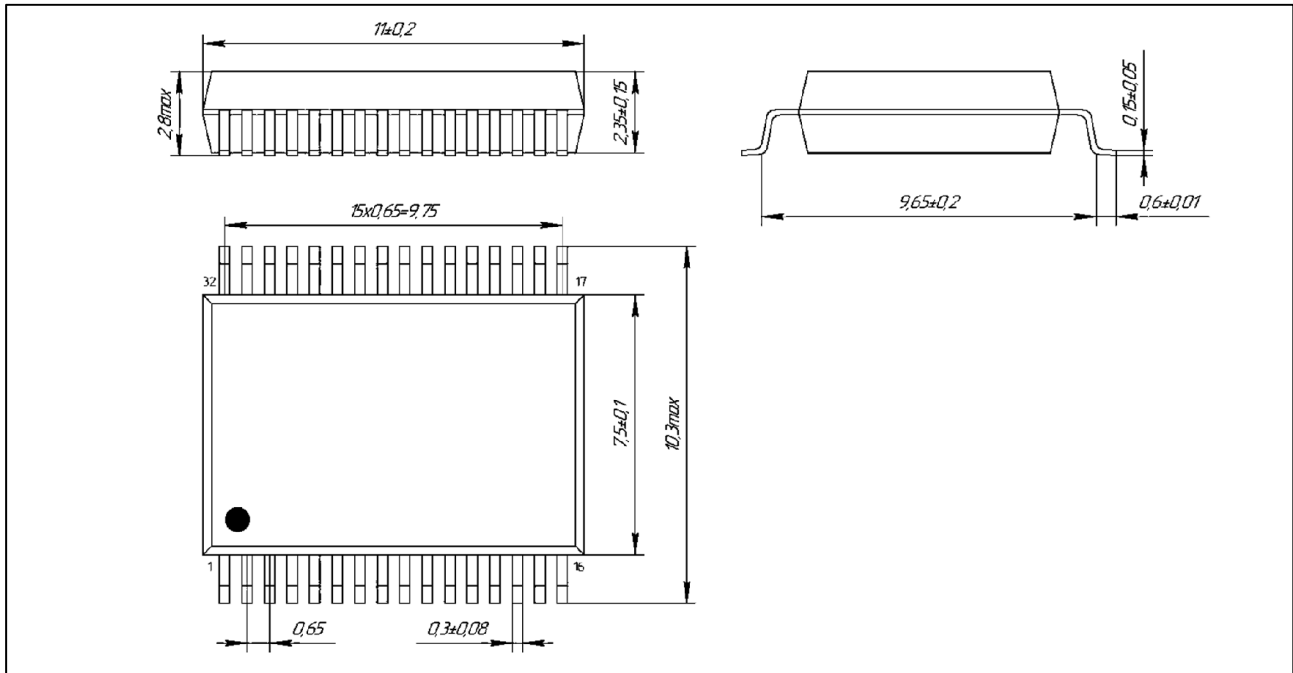


Fig. 2 – SOIC-32 Package

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