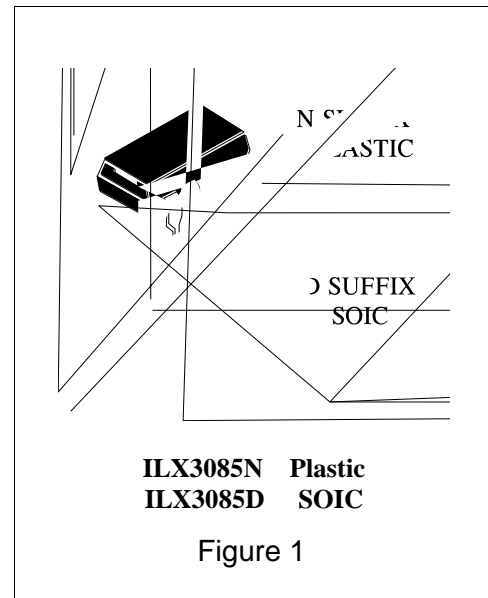


## Interface Transceiver of the Serial Data of the Standard RS -485/RS-422

### Description

The ILX3085 is interface transceiver of serial data under RS - 485 standard with low power consumption.

The ILX3085 is purposed for application in telecom systems under RS485/RS422 standards with low power dissipation, translators of the level, transceiving devices sensitive to electromagnetic radiation, industrial control systems.



### Features

1 transmitter and 1 receivers of the serial data of the standard RS-485

Auto Shutdown function provide low power consumption

Supply voltage range: 5.0V 5%

Operating temperature range: -40 ~

ESD protection up to 2 000V for transmitter input and receiver output (TTL/CMOS levels) and up to 15 000V for transmitter output and receiver input (RS-46(e65(S)(R) 36-BDC1 22[485])TBT1 021.9



Table 1. Pin Description

Pin Number	Symbol	Pin Description
01	RO	TTL/CMOS Receiver data output
02	$\overline{\text{RE}}$	Receiver Output Enable.
03	DE	Transmitter Output Enable.
04	DI	Transmitter input
05	GND	Common pin

Table 2. Transmitter Truth Table

Inputs			Outputs	
$\overline{RE}$	DE	DI	$\overline{B}$	A
X	H	H	L	H
X	H	L	H	L
L	L	X	Z	Z
H	L	X	ZZ	

Note : H high level, L low level, X, Z third state

Table 3. Receiver Truth Table

Inputs			Outputs
$\overline{RE}$	DE	A, $\overline{B}$	RO
L	X		H
L	X		L
L	X		

Table 4. Recommended Operating Condition

Symbol	Parameter	Limit		Unit
		min	max	
$V_{CC}$	Supply voltage	4.75	5.25	V
$V_{IL}$	Input low voltage DI, DE, $\overline{RE}$ pins	0	0.8	V
$V_{IH}$	Input high voltage DI, DE, $\overline{RE}$ pins	2.0	$V_{CC}$	V
$V_{OD}$	Transmitter output voltage	-7.0	12.0	V
$V_{IR}$	Receiver input voltage	-7.0	12.0	V
$V_{OR}$	Receiver output voltage	0	$V_{CC}$	V
$V_{TH}$	Receiver differential threshold voltage	50	200	V
T	Ambient temperature	40	85	°C

Table 5. Maximum Ratings

Symbol	Parameter	Limit		Unit
		min	max	
$V_{CC}$	Supply voltage		7.0	V
$V_{IL}$	Input voltage on pins DI, DE, $\overline{RE}$	-0.3	7.0	V
$V_{OD}$	Transmitter output voltage	-13	13	V
$V_{IR}$	Receiver input voltage	-13	13	V
$V_{OR}$	Receiver output voltage	-0.3	$V_{CC}+0.3$	V

\* Stresses beyond

These are stress ratings only and functional operation of the device at these or any other conditions beyond those are not implied.

Exposure to absolute-

Table 6. **Electrical Parameters**  
(V)



Table 6. Electrical Parameters (continued)

Symbol	Parameter	Mode	Limit		T <sub>A</sub> , C	Unit
			Min	Max		
<b>Transmitter</b>						
I <sub>OSD</sub>	Short circuit current	7.0 V V <sub>OD</sub> V <sub>CC</sub>		240		mA
				250	40; 85	
		0 V V <sub>OD</sub> 12 V		240		
				250	40; 85	
		0 V V <sub>OD</sub> V <sub>CC</sub>		26		
				25	40; 85	
V <sub>hD</sub>	Hysteresis			200	25 10	V
t <sub>P<sub>HL</sub>D</sub> , t <sub>P<sub>LH</sub>D</sub>	Transmitter input to output switching delay	C <sub>L1</sub> = C <sub>L2</sub> = 100 pF R <sub>DIFF</sub> = 54	330	800		ns
			250	1000	40; 85	
t <sub>SKEW D</sub>	Transmitter output skew	C <sub>L1</sub> = C <sub>L2</sub> = 100 pF R <sub>DIFF</sub> = 54		90		ns
				100	40; 85	
t <sub>PZH D</sub> , t <sub>PZL D</sub>	Transmitter enable time from OFF to output high (low)	C <sub>L</sub> = 100 pF		2200		ns
				2500	40; 85	

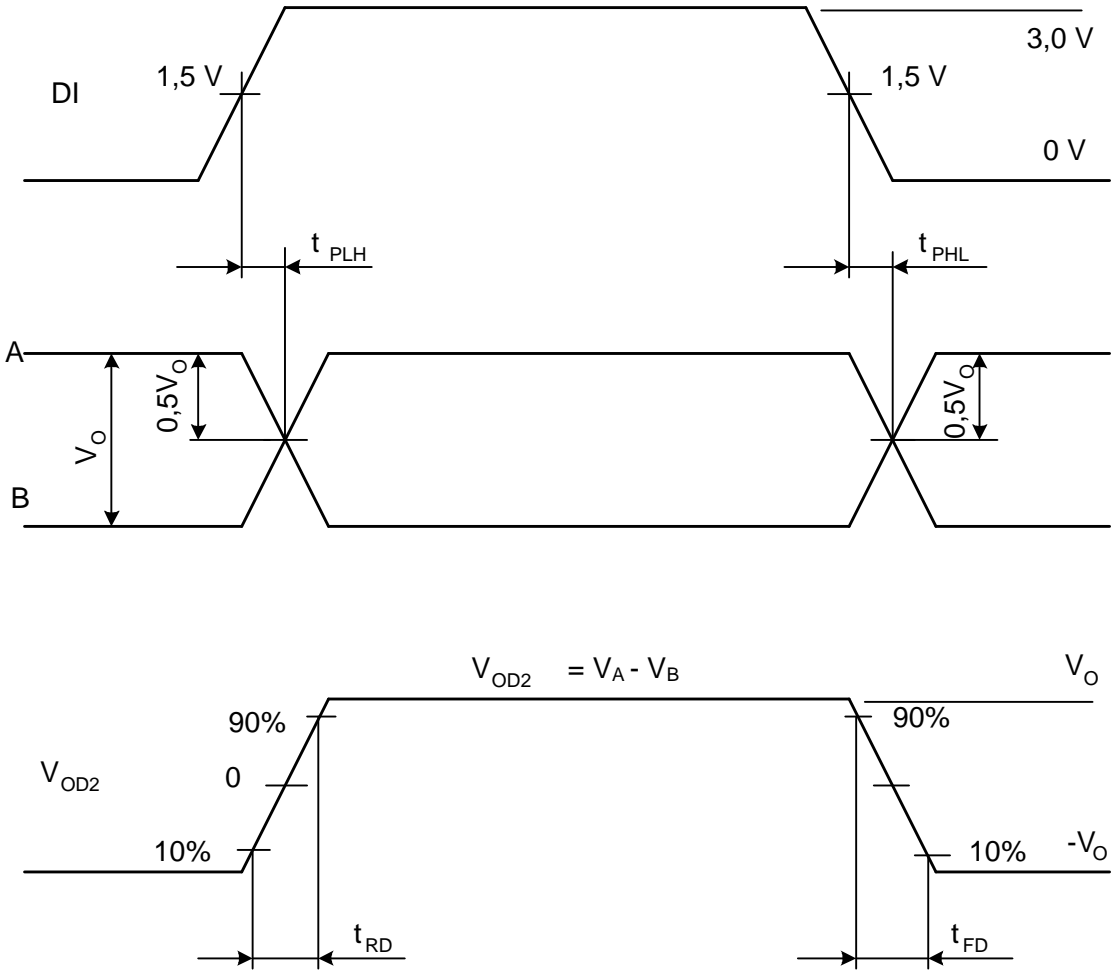
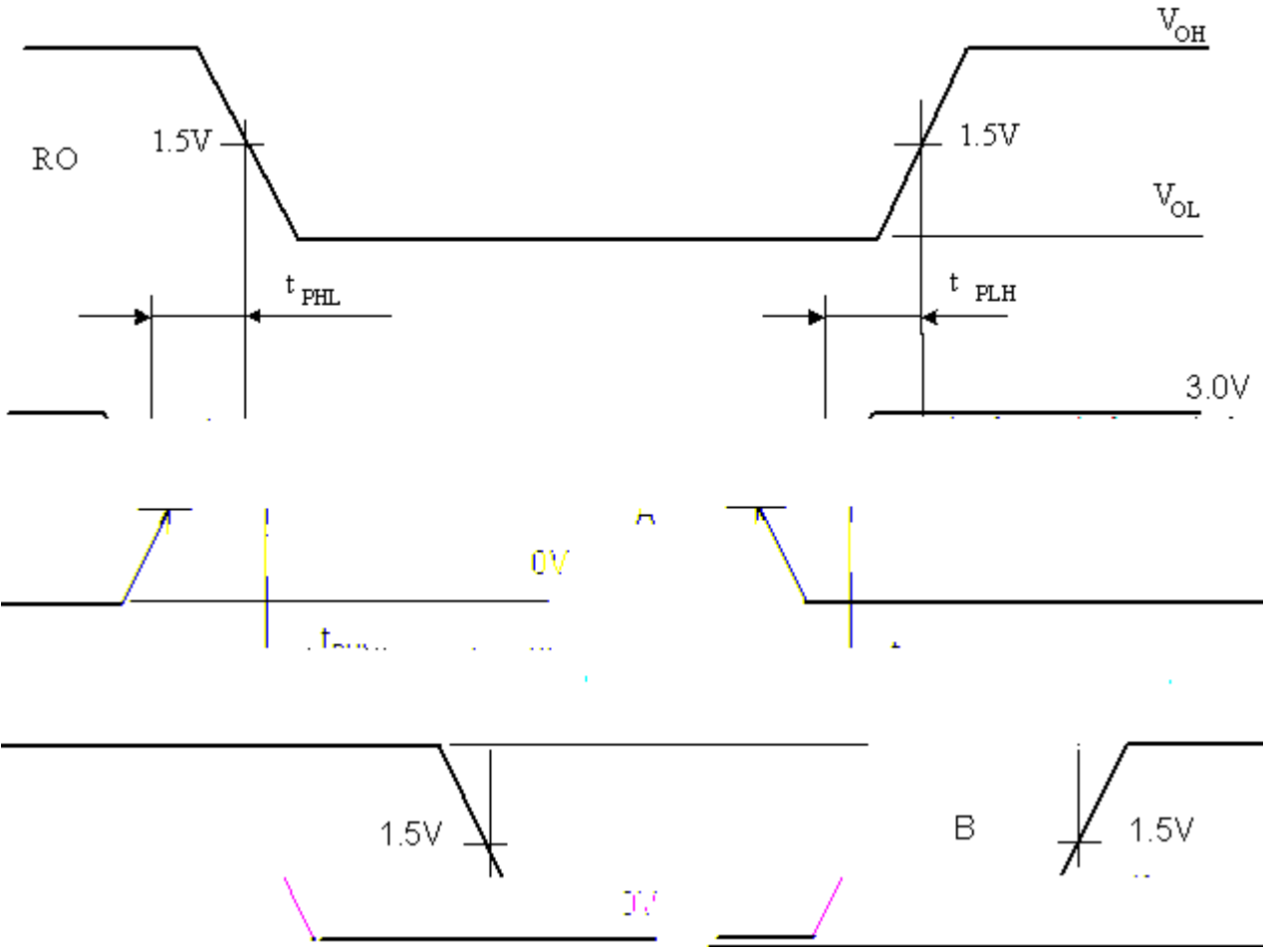


Figure 4. Transmitter output & input signals time diagram





During the input signal A is changing DC voltage 1.5 V is supplied to input B  
During the input signal B is changing DC voltage 1.5 V is supplied to input A

Figure 5. Receiver output & input signals time diagram



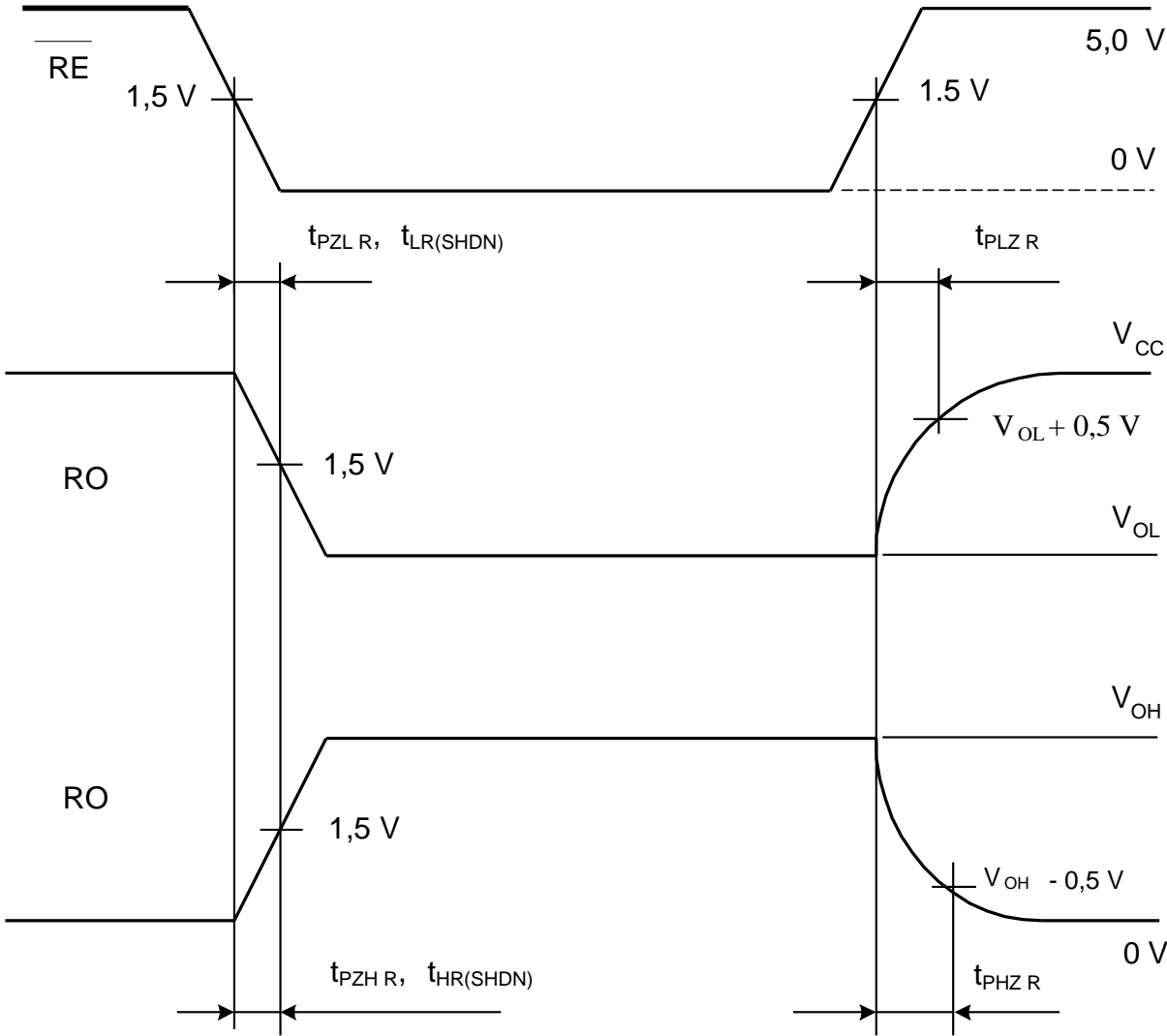
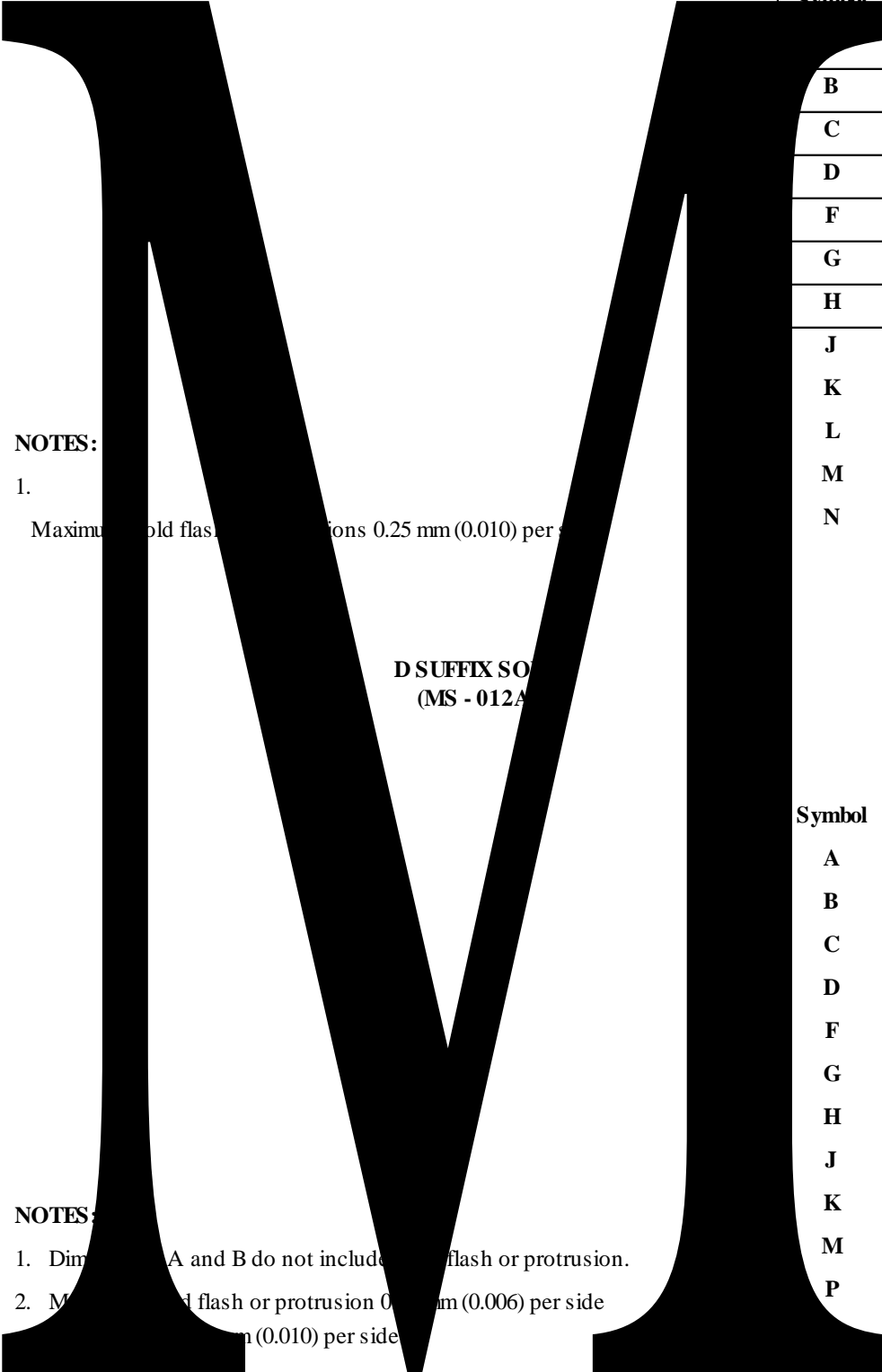


Figure 7. Receiver output & input signals time diagram

Package Dimensions

N SUFFIX PLASTIC DIP  
 \*OU"6"223DC+



NOTES:

- 1. Maximum mold flash or protrusion 0.25 mm (0.010) per side

D SUFFIX SOIC  
 (MS - 012A)

NOTES:

- 1. Dimensions A and B do not include mold flash or protrusion.
- 2. Maximum mold flash or protrusion 0.05 mm (0.006) per side

Symbol	Dimension, mm	
	MIN	MAX
	8.51	10.16
<b>B</b>	6.1	7.11
<b>C</b>		5.33
<b>D</b>	0.36	0.56
<b>F</b>	1.14	1.78
<b>G</b>	2.54	
<b>H</b>	7.62	
<b>J</b>	0°	10°
<b>K</b>	2.92	3.81
<b>L</b>	7.62	8.26
<b>M</b>	0.2	0.36
<b>N</b>	0.38	

Symbol	Dimension, mm	
	MIN	MAX
<b>A</b>	4.8	5
<b>B</b>	3.8	4
<b>C</b>	1.35	1.75
<b>D</b>	0.33	0.51
<b>F</b>	0.4	1.27
<b>G</b>	1.27	
<b>H</b>	5.72	
<b>J</b>	0°	8°
<b>K</b>	0.1	0.25
<b>M</b>	0.19	0.25
<b>P</b>	5.8	6.2
	0.25	0.5