LIN Transceiver, Dual

NCV7422

Description

The NCV7422 is a two channel physical layer device using the Local Interconnect Network (LIN) protocol. It allows interfacing of two independent LIN physical buses and the LIN protocol controllers. The device is compliant to ISO 17987−4, LIN2.2a, LIN2.2, LIN2.1, LIN 2.0 and SAEJ2602 standards.

The NCV7422 LIN device is a member of the in−19060 TDdesignedef-T0 mun TDe wo Tf.54 0 TD.05922Tc e6y7vehj1118 Al

BLOCK DIAGRAM

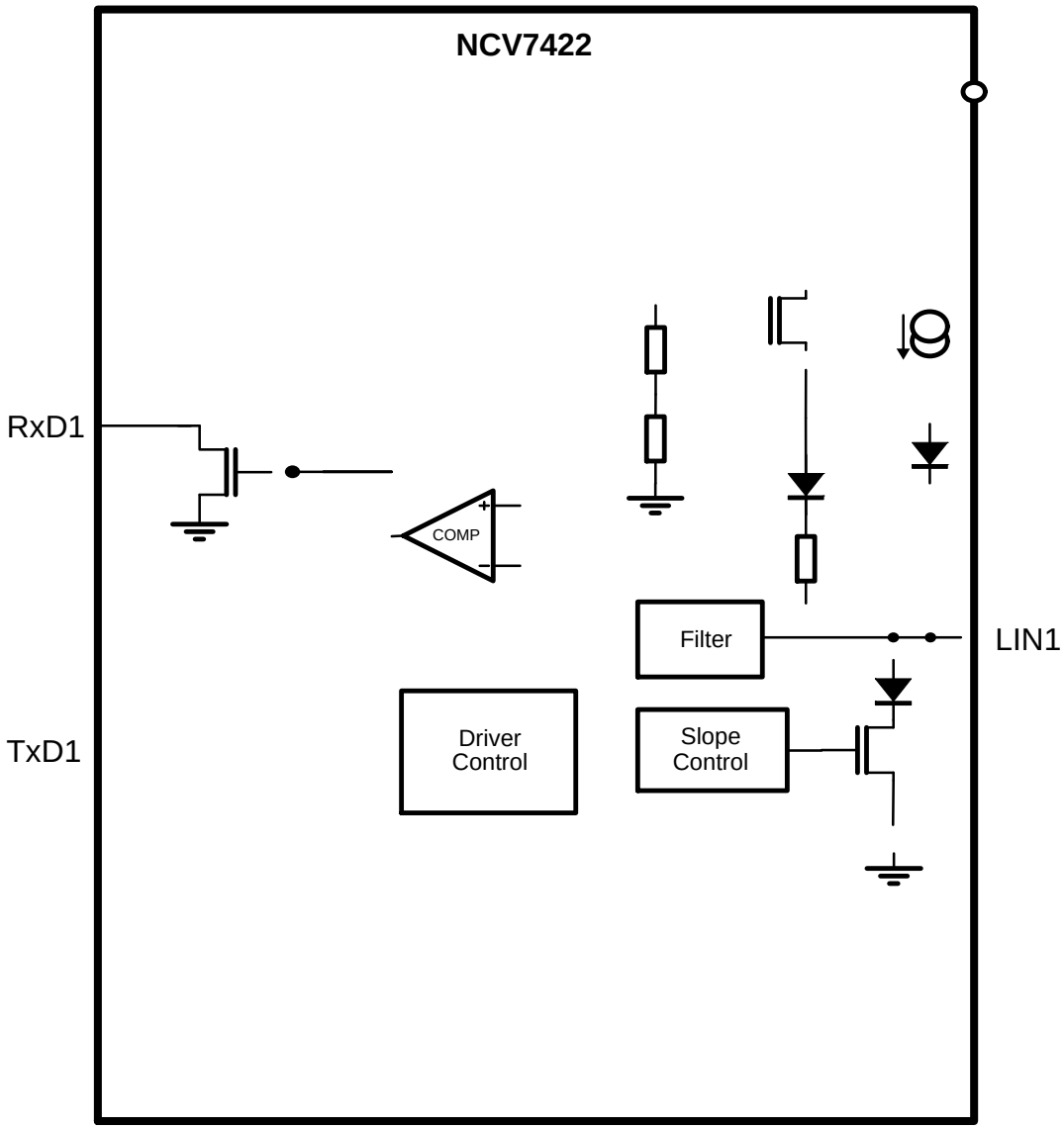


Figure 1. Block Diagram

TYPICAL APPLICATION DIAGRAM

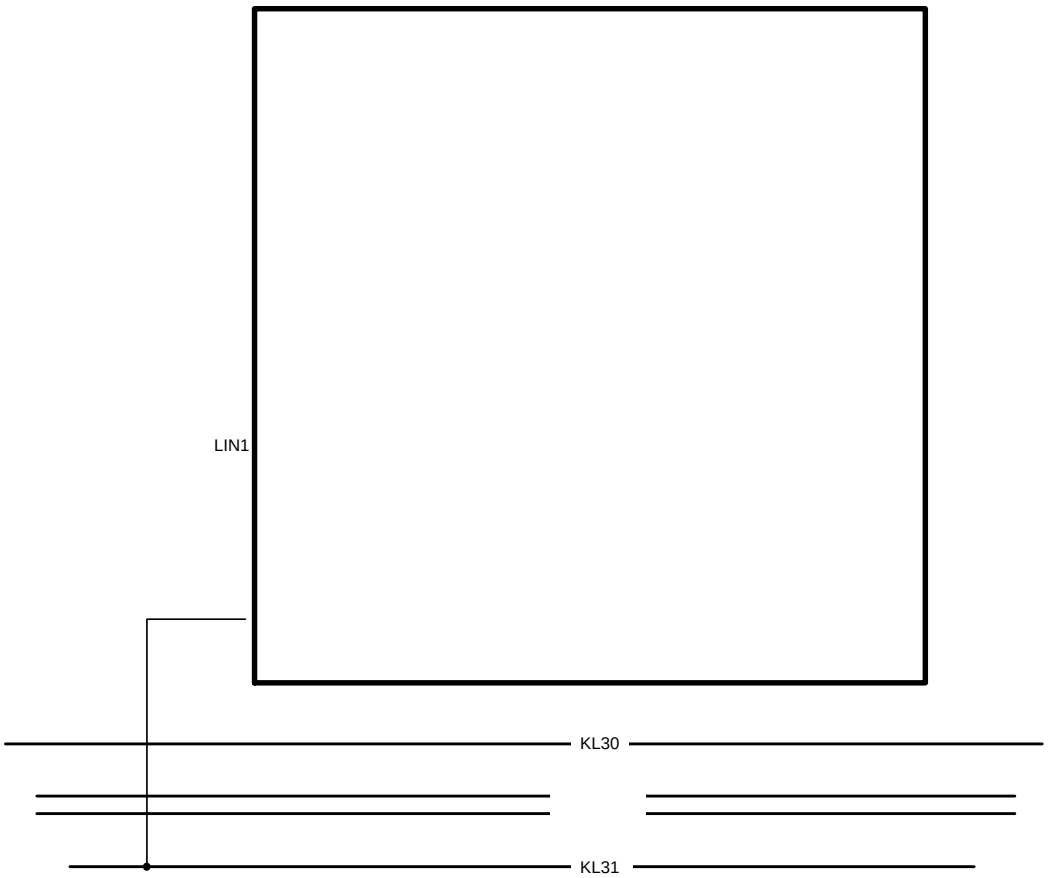
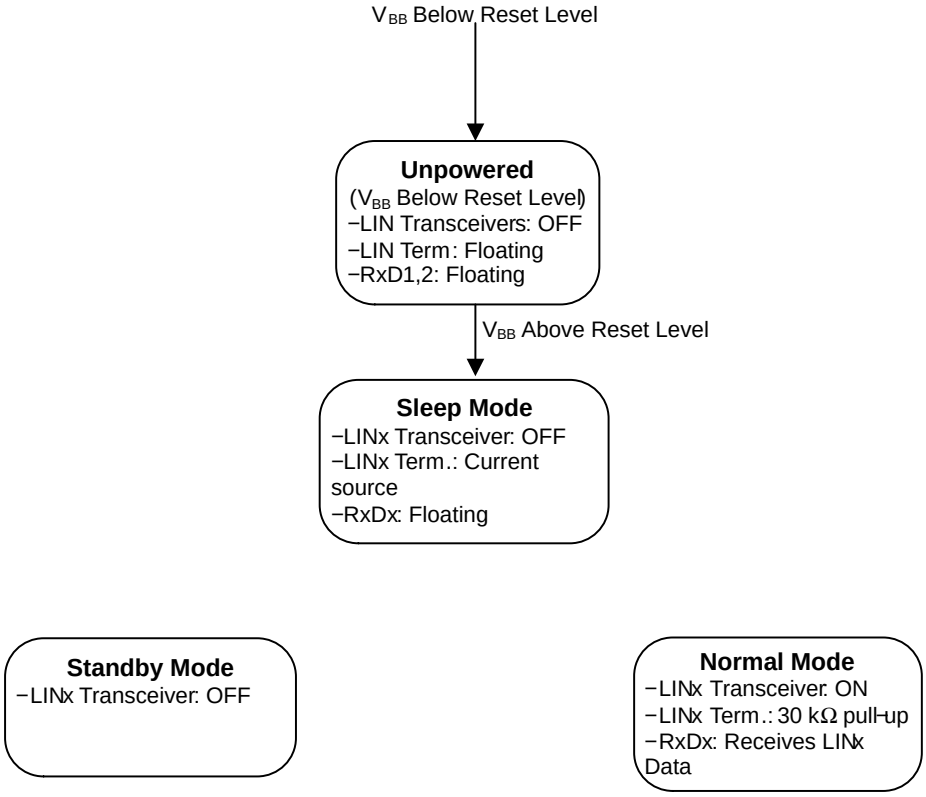


Figure 2. Application Diagram


V_{BB} Below Reset Level
Unpowered
(V_{BB} Below Reset Level)
−LIN Transceivers: OFF
−LIN Term: Floating
−RxD1,2: Floating
V_{BB} Above Reset Level
Sleep Mode
−LINx Transceiver: OFF
−LINx Term.: Current source
−RxDx: Floating
Standby Mode
−LINx Transceiver: OFF
Normal Mode
−LINx Transceiver: ON
−LINx Term.: 30 kΩ pull−up
−RxDx: Receives LINx Data

ELECTRICAL CHARACTERISTICS

Definitions

All voltages are referenced to GND unless otherwise specified. Positive currents flow into the IC. Sinking current means the current is flowing into the pin; sourcing current means the current is flowing out of the pin.

Table 3. ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min	Max	Unit
V_{BB}	Supply Voltage on Pin V_{BB}	−0.3	+42	V
V_{LINx}	LIN Bus Voltage with respect to GND	−42	+42	V
	LIN Bus Voltage with respect to V_{BB}	−42	+42	V
$V_{\_DIG\_IO}$	DC Voltage on Pins (ENx, RxDx, TxDx)	−0.3	+7	V
V_{ESD}	Human Body Model (LINx pin) (Note 1)	−8	+8	kV
	Human Body Model (All pins) (Note 1)	−4	+4	kV
	Charge Device Model (All pins) (Note 2)	−750	+750	V
	Machine Model (All pins) (Note 3)	−200	+200	V
V_{ESDIEC}	Electrostatic Discharge Voltage (LINx Pin) System Human Body Model (Note 4) Conform to IEC 61000−4−2	−8	+8	kV
T_J	Junction Temperature	−40	+150	°C
T_{STG}				

Table 6. AC CHARACTERISTICS (V_{BB} = 5 V to 18 V; T_J = −40 to +150°C; unless otherwise specified. For the transmitter parameters, the following bus loads are considered: L1 = 1 kΩ / 1 nF; L2 = 660 Ω / 6.8 nF; L3 = 500 Ω / 10 nF)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
LIN TRANSMITTER						
D1	Duty Cycle 1 = $t_{BUS\_REC(MIN)}$ / (2xt_{BIT}); See Figure 5	$TH_{REC(max)}$ = 0.744 x V_{BB} $TH_{DOM(max)}$ = 0.581 x V_{BB}				

LIN

— — 50 %

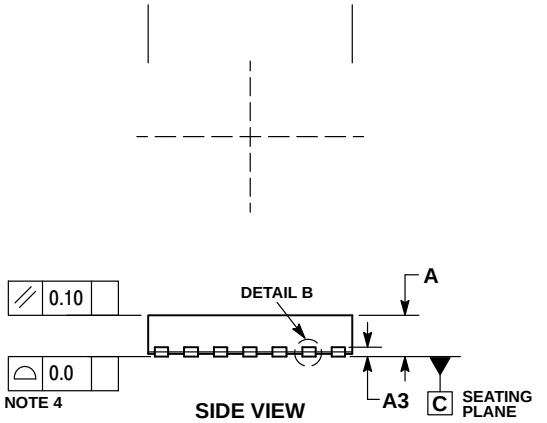
3.60 1.75

0.6
PITC

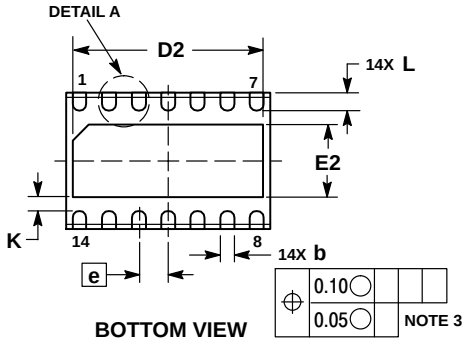
DFNW14 4.5x3, 0.65P
CASE 507AC
ISSUE D

1
SCALE 2:1

DATE 03 JUL 2018



SIDE VIEW



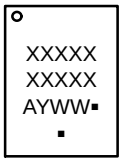
BOTTOM VIEW

RECOMMENDED

NOTES:
1. DIMENSIONS AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMESNION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETV 0.15 AND 0.30 MM FROM TERMINAL
4. COPLANARITY APPLIES TO THE EX PAD AS WELL AS THE TERMINALS.
5. THIS DEVICE CONTAINS WETTABLE DESIGN FEATURES TO AID IN FILLE MATION ON THE LEADS DURING MC

DIM	MILLIMETERS MIN	NOM	MAX
A	0.80	0.85	
A1	---	---	
A3			
A4			
b	0.25	0.30	
D	4.40	4.50	
D2	4.13	4.20	
E			
E2	1.53	1.60	
e	0.65 BSC		
K			
L	0.35	0.40	
L3			

GENERIC MARKING DIAGRAM*



XXXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package
(*Note: Microdot may be in either location)

DOCUMENT NUMBE

DESCRIPTIO

D

E

*For additional information on our Pb−Free strategy and soldering
details, pleo659.301 711.78 491.924 -586.035 reW nBT9 0 0 9 542.4274 673.3984 Tm0 Tc0 Tw(8)TjETQBT/F1 1 Tf8 0 0 8 61.3984 672.9449 Tm-.001