AMIS-30600

LIN Transceiver

General Description

The single−wire transceiver AMIS−30600 is a monolithic integrated circuit in a SOIC−8 package. It works as an interface between the protocol controller and the physical bus.

The AMIS−30600 is especially suitable to drive the bus line in LIN systems in automotive and industrial applications. Further it can be used in standard ISO9141 systems.

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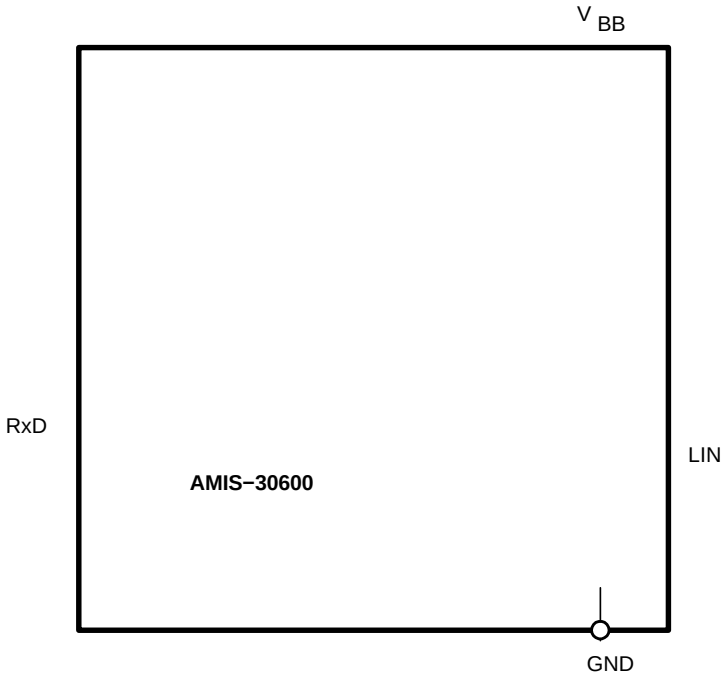
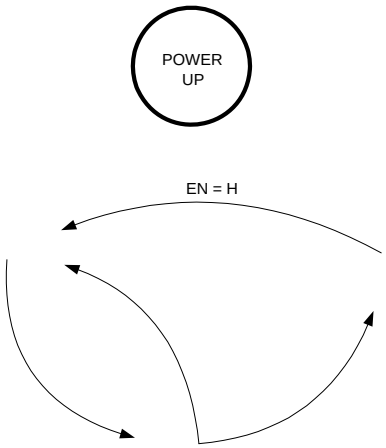

V BB
RxD
LIN
AMIS−30600
GND

Table 1. PIN LIST AND DESCRIPTIONS

Pin	Name	Description
1	RxD	Receive data output; low in dominant state
2	EN	Enable input; transceiver in normal operation mode when high
3	VCC	5V supply input
4	TxD	Transmit data input; low in dominant state; internal 40 kΩ

APPLICATION INFORMATION



V_{CC} = on
permanently

V_{CC} controlled by INH:
INH = Float V_{CC} = off
INH = H V_{CC} = on

Table 4. DC CHARACTERISTICS V_{CC} = 4.75 V to 5.25 V; V_{BB} = 7.3 V to 18 V,V_{EN} < V_{ENon}, T_A = −40°C to +125°C; R_L = 500 Ω unless specified otherwise. All voltages with respect to ground, positive current flowing into pin, unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
SUPPLY (Pin V_{CC} and Pin V_{BB})						

Table 5. AC ELECTRICAL CHARACTERISTICS ACCORDING TO LIN V13 V_{CC} = 4.75 V to 5.25 V; V_{BB} = 7.3 V to 18 V,V_{EN} < V_{ENon}, T_A = −40°C to +125°C; R_L = 500 Ω unless otherwise specified. Load for slope definitions (typical loads) = [L1] 1 nF 1 kΩ / [L2] 6.8 nF 600 Ω / [L3] 10 nF 500 Ω.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
t_slope_F	Slope Time Falling Edge; (Note 5)	See Figure 5	4	−	24	μs
t_slope_R	Slope Time Rising Edge; (Note 5)	See Figure 5	4	−	24	μs
t_slope_Sym	Slope Time Symmetry; (Note 5)	t_slope_F − t_slope_R	−8	−	+8	μs
T_rec_F	Propagation Delay Bus Dominant to RxD = Low; (Note 6)	See Figures 4 and 5		2	6	μs
T_rec_R	Propagation Delay Bus Recessive to RxD = High; (Note 6)	See Figures 4 and 5		6	6	μs
t_{WAKE}	Wake−up Delay Time		30	100	200	μs

5. Guaranteed by design; not measured for all supply/load combinations on ATE.
6. Not measured on ATE.

Table 6. AC ELECTRICAL CHARACTERISTICS ACCORDING TO LIN v2.0 V_{CC} = 4.75 V to 5.25 V; V_{BB} = 7.3 V to 18 V,V_{EN} < V_{ENon}, T_A = −40°C to +125°C; R_L = 500 Ω unless otherwise specified. Load for slope definitions (typical loads) = [L1] 1 nF 1 kΩ / [L2] 6.8 nF 600 Ω / [L3] 10 nF 500 Ω.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
DYNAMIC RECEIVER CHARACTERISTICS ACCORDING TO LIN v2.0						
trx_pdr	Propagation Delay Bus Dominant to RxD = Low; (Note 7)	See Figure 6			6	μs
trx_pdf	Propagation Delay Bus Recessive to RxD = High; (Note 7)	See Figure 6			6	μs
trx_sym	Symmetry of Receiver Propagation Delay	trx_pdr − trx_pdf	−2	−	+2	μs
DYNAMIC TRANSMITTER CHARACTERISTICS ACCORDING TO LIN v2.0						
D1	Duty Cycle 1 = $t_{Bus_rec(min)}$/(2 x t_{Bit}); See Figure		0.396		0.5	
D1	Duty Cycle 1 = $t_{Bus_rec(min)}$/(2 x t_{Bit} See Fig6ure					

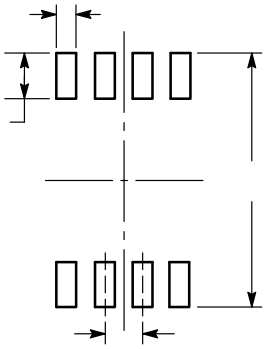
DEVICE ORDERING INFORMATION

Part Number	Temperature Range	Package Type	Shipping†
AMIS30600LINI1G	−40°C − 125°C	SOIC−8 (Pb−Free)	96 Tube / Tray
AMIS30600LINI1RG	−40°C − 125°C	SOIC−8 (Pb−Free)	

SCALE 1:1

SOIC 8

RECOMMENDED
SOLDERING FOOTPRINT*



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