LTLF0108

Channel Auto-Bidirectional Multi-Voltage Level Translator

General Description

The LTLF family of devices supports bidirectional voltage translation without the need for a DIR pin which minimizes system effort (for PMBus, I²C, SMBus, and so forth). The LTLF family of devices supports up to 100-MHz up translation and greater than 100-MHz down translation at 30 pF capacitive load and up to 40-MHz up or down translation at 50 pF capacitive load which allows the LTLF family to support more consumer or telecom interfaces (MDIO or SDIO).

LTLF family supports 5V tolerance on I/O port which makes it compatible with TTL levels in industrial and telecom applications. The LTLF family is able to set up different voltage translation levels on each channel which makes it very flexible.

Features

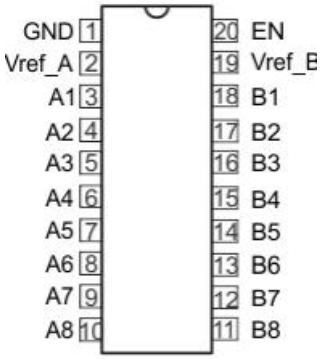
- Provides bidirectional voltage translation with no direction pin
- Supports up to 100-MHz up translation and greater than 100-MHz down translation at 30 pF capacitive load and up to 40-MHz up or down translation at 50 pF capacitive load
- Allows bidirectional voltage-level translation between
  - 0.65 V ↔ 1.8 / 2.5 / 3.3 / 5 V
  - 0.95 V ↔ 1.8 / 2.5 / 3.3 / 5 V
  - 1.2 V ↔ 1.8 / 2.5 / 3.3 / 5 V
  - 1.8 V ↔ 2.5 / 3.3 / 5 V
  - 2.5 V ↔ 3.3 / 5 V
  - 3.3 V ↔ 5 V
- Low standby current
- 5V tolerance I/O port to support TTL
- Low R_{ON} provides less signal distortion
- High-impedance I/O pins for EN = Low
- Flow-through pinout for easy PCB trace routing
- Latch-up performance >100 mA per JESD 17

Applications

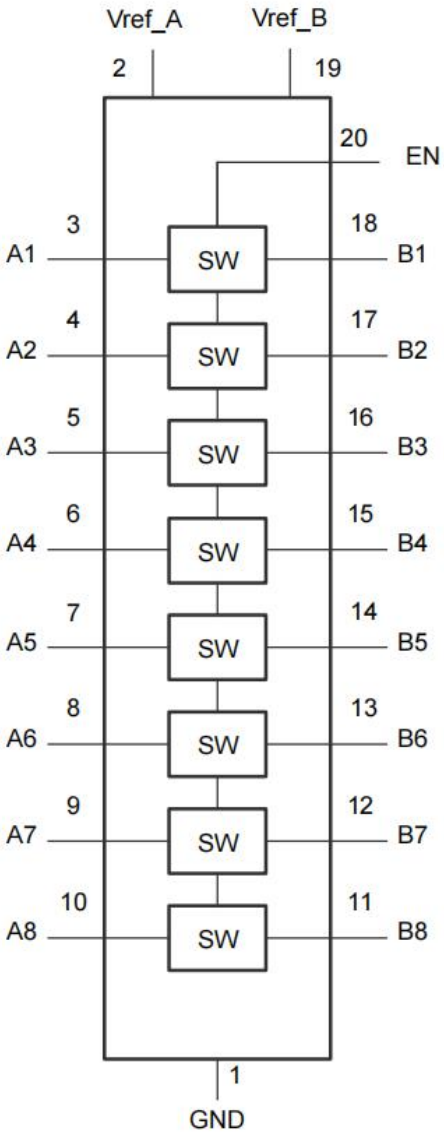
- GPIO, MDIO, PMBus, SMBus, SDIO, UART, I²C, and other interfaces in telecom infrastructure
- Enterprise systems
- Communications equipment
- Personal electronics
- Industrial applications

Pin Description (Top View)

LTLF0108
TSSOP-20L



Typical Application Circuit



Ordering Information

Package Type	Part Number	Quantity	Mark Code
TSSOP-20L	LTLF0108YT20/R6	Tape and Reel, 3 000	F108

Pin Function

Symbol	Package Pin	Function
GND	1	Ground
V_{ref_A}	2	Reference supply voltage
A1	3	Input/output 1
A2	4	Input/output 2
A3	5	Input/output 3
A4	6	Input/output 4
A5	7	Input/output 5
A6	8	Input/output 6
A7	9	Input/output 7
A8	10	Input/output 8
B8	11	Input/output 8
B7	12	Input/output 7
B6	13	Input/output 6
B5	14	Input/output 5
B4	15	Input/output 4
B3	16	Input/output 3
B2	17	Input/output 2
B1	18	Input/output 1
V_{ref_B}	19	Reference supply voltage
EN	20	Switch enable input; LTLF0108: EN is high-active

Important Notice

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