

10.3125 GBPS RETIMING DUAL-CHANNEL TRANSCEIVER



10.3125 Gbps Retiming Dual-Channel Transceiver

ISL37231

The ISL37231 is an advanced dual-channel, dual-simplex 10.3125 Gbps retimer. It is specifically optimized for active copper cables designed to support Thunderbolt technology, but can be used for a variety of other high-speed applications.

Endowed with sophisticated functions such as media optimized (PCB or Cable) and adaptive equalization, de-emphasis, and signal retiming, this IC fortifies sensitive links that break with lesser retiming solutions. The device contains high performance mixed signal processing technology to provide a maximally robust signal integrity solution for datacenter and consumer applications. Such processing includes up to 29dB of media-optimized equalization, and a reset of the jitter budget via retiming.

The ISL37231 provides a high level of performance while significantly trimming the power required by other active cable solutions. At less than 500mW, the operating power is the lowest in class, and a sleep mode function can be invoked to reduce the power to a miniscule 2.9mW.

To facilitate ease of system integration, the ISL37231 provides advanced diagnostic capabilities in the form of loopback and high-resolution on-chip eye monitor functions, both accessed via a UART interface.

Features

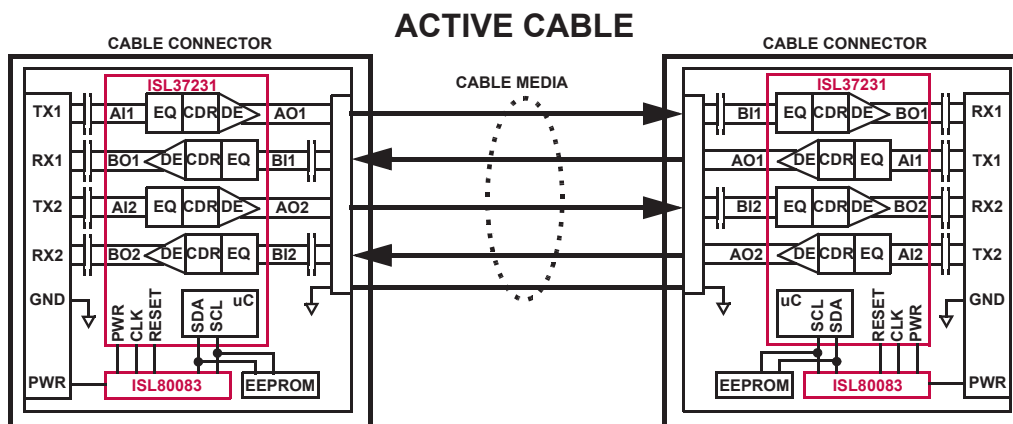
- Industry's lowest power and highest performance 10.3125 Gbps active cable solution for STP, twinax and micro-coax copper cables
- Supports 64b/66b Encoding
- Fully Retimed Low Jitter Outputs
- Up to 19.5dB Off-Ramp Cable Loss Equalization
- Cable Group Delay Equalization
- Up to 10dB PCB On-Ramp Input Equalization
- 9dB Output De-Emphasis
- Supports Independent SSC on Each Lane
- On-chip Microcontroller and Eye Monitor
- Multiple Loopback Modes
- Low Power (<500mW; 2.9mW in sleep mode)
- Ultra Small 5 x 5 mm High-Density Array (aQFN) Package

Applications

- Active cables for use with Thunderbolt technology
- Proprietary High-Speed Active Cable Assemblies

Benefits

- Thinner gauge cable
- Extends cable reach 3x
- Improved BER



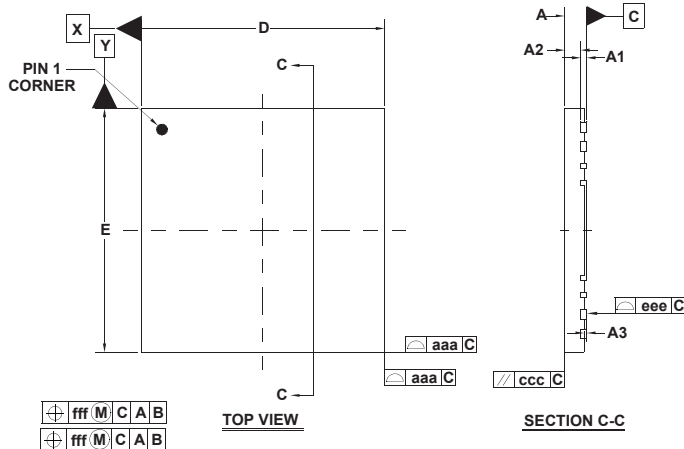
Intersil Signal Integrity & Power Management Products

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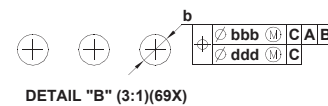
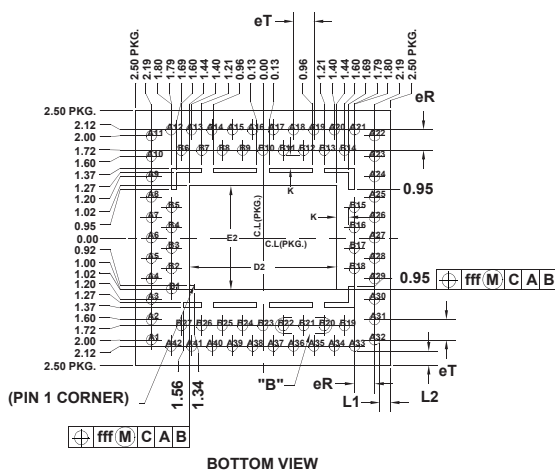
Physical Dimensions

C69.5x5

69 LEAD HIGH DENSITY ARRAY PACKAGE (aQFN)
Rev 1, 2/12



SYMBOL	INCHES			MILLIMETERS		
	MIN	NOM.	MAX	MIN	NOM.	MAX
A	-	-	0.85	-	-	0.033
A3	0.020	0.050	0.080	0.001	0.002	0.003
A2	0.640	0.675	0.710	0.025	0.027	0.028
A1	0.120	0.130	0.140	0.005	0.005	0.006
b	0.150	0.200	0.250	0.006	0.008	0.010
D	5.00 BSC			0.197 BSC		
D2	2.780	2.880	2.980	0.109	0.113	0.117
E	5.00 BSC			0.197 BSC		
E2	1.940	2.040	2.140	0.076	0.080	0.084
eT	0.400			0.016		
eR	0.400			0.016		
K	0.200	0.250	0.300	0.008	0.010	0.012
L1	0.160	0.210	0.260	0.006	0.008	0.010
L2	0.230	0.280	0.330	0.009	0.011	0.013
TOLERANCES OF FORM AND POSITION						
aaa	0.150			0.006		
bbb	0.100			0.004		
ddd	0.050			0.002		
ccc	0.100			0.004		
eee	0.100			0.004		
fff	0.100			0.004		



Ordering information

Part Number	Part Marking	Temp Range (°C)	Package (Pb-free)
ISL37231DRAZ-TS	ISL37231DRAZ	0 to +85	69 Ld High Density Array package (7" Tape & Reel, 100 pcs.)
ISL37231DRAZ-T7	ISL37231DRAZ	0 to +85	69 Ld High Density Array package (7" Tape & Reel, 1k pcs.)

► For more information go to www.intersil.com ISL37231 

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