LR36683N

Vertical Driver LSI for CCD

DESCRIPTION

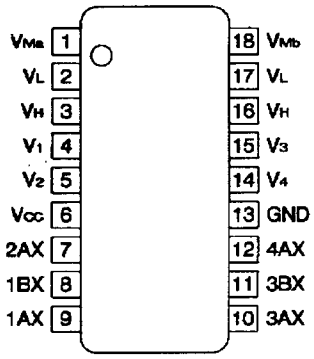
The LR36683N is a vertical clock driver designed for use with CCD area sensors. The driver transforms voltage levels from CMOS level (0 to 5 V) to 27 Vp-p (MAX.) and impedanse conversion.

FEATURES

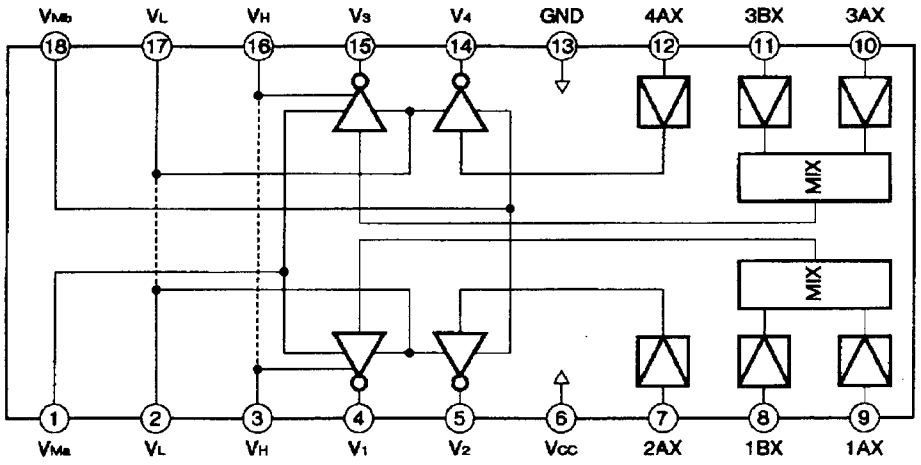
- Two bi-level output circuits
  Two tri-level output circuits
- Supply voltage : V_{CC}=5.0 V (TYP.)
  $V_H - V_L$=27 Vp-p (MAX.)
  V_H=20.0 V (MAX.)
  V_L=−5.0 V (MAX.)
  V_M=0 to 4.0 V (independently controllable with bi- or tri-level outputs)
- Switchable between NTSC (EIA) and PAL (CCIR) systems
- Package : 18-pin MFP(MFP018-P)

PIN CONNECTIONS

18-PIN MFP TOP VIEW



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT	NOTE
Supply voltage	V_{CC}	$V_{SS}-0.3$ V to $V_{SS}+6.0$	V	1
	V_H-V_L	29.0		
	V_{Ma}, V_{Mb}	V_L to V_H		
Input voltage	V_{IN} V_{SS}	-0.3 to $V_{CC}+0.3$	V	
DC load current	I_{ODC}	±3	mA	
Power dissipation	P_D	300 (70°C)	mW	
Storage temperature	Tstg	−55 to +150	°C	

NOTE :

1. V_H (MIN.) = V_{CC}, V_L (MAX.) = GND

AC CHARACTERISTICS

(V_{CC} = 5.0 V, V_H = 15.0 V, V_L = −9.0 V, V_{Ma} = V_{Mb} = 0 to 4 V, Ta = −20 to 70°C)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_M level transition raise delay	t_{TRM}	V_{IN} to $V_L \rightarrow V_M - 1.0$ V Applied to V_1-V_4		600	1200	ns
V_L level transition fall delay	t_{TFL}	V_{IN} to $V_M \rightarrow V_L + 1.0$ V Applied to V_1-V_4		600	1200	ns
V_H level transition raise delay	t_{TRH}	V_{IN} to $V_M \rightarrow V_H - 1.0$ V Applied to V_1 and V_3		600	1200	ns
V_M level transition fall delay	t_{TFM}	V_{IN} to $V_H \rightarrow V_M + 1.0$ V Applied to V_1 and V_3		600	1200	ns
Supply current	I_{DYN}	During operation		9	18	mA

NOTES :

- The maximum applicable voltage on any pin with respect to GND.
- Referenced to the "TIMING DIAGRAM".
- Applied to "EQUIVALENCE CIRCUIT".
- Applied to "PRECAUTION" 1 and 3.

DC CHARACTERISTICS

(V_{CC} = 5.0 V, V_H = 15.0 V, V_L = −9.0 V, V_{Ma} = V_{Mb} = 0 to 4 V, referenced to GND, Ta = −20 to 70°C)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	NOTE
Low level input voltage	V_{IL}		0		1.0	V	
High level input voltage	V_{IH}		4.0		5.0	V	
Low level input current	$\lvert I_{IH} \rvert$	V_{IL} = 0 V			1.0	μA	
High level input current	$\lvert I_{IH} \rvert$	V_{IH} = 5 V			1.0	μA	
Low level output voltage	V_{OL}	I_{OL} < 1 μA			−8.95	V	
High level output voltage	V_{OH}	I_{OH} < 1 μA	14.95			V	2
INTermediate level output voltage	V_{OMLa}	I_{OMLa} < 1 μA	−0.05			V	2
	V_{OMHa}	I_{OMHa} < 1 μA			0.05	V	2
	V_{OMLb}	I_{OMLb} < 1 μA	−0.05			V	1
	V_{OMHb}	I_{OMHb} < 1 μA			0.05	V	1
Low level output current	I_{OL}	V_{OL} = V_L + 0.1 V	1.0			mA	
High level output current	I_{OH}	V_{OH} = V_H − 0.1 V	1.0			mA	2
INTermediate-level output current	I_{OMLa}	V_{OMLa} = V_M − 0.1 V	1.0			mA	2
	I_{OMHa}	V_{OMHa} = V_M + 0.1 V	1.0			mA	2
	I_{OMLb}	V_{OMLb} = V_M − 0.1 V	1.0			mA	1
	I_{OMHb}	V_{OMHb} = V_M + 0.1 V	1.0			mA	1
Output on resistance	R_{ONH}	I_{OH} = 30 mA		20		Ω	2
	R_{ONM}	I_{OH} = 30 mA		20		Ω	
	R_{ONL}	I_{OH} = 30 mA		20		Ω	
Static current	I_{CC}				200	μA	
	I_H				200	μA	
	I_M				200	μA	
	I_L				200	μA	

- The current must be specified with the absolute value.
- Applied to "PRECAUTION" 1 and 3.

NOTES :

1. Applied to pins V_2 and V_4.
2. Applied to pins V_1 and V_3.

CCD sensor imaging area sensor pattern recognition timing generator vertical driver white balance