Ordering number : EN————

CMOS IC

LC99059-MJ9

Front-End IC for 1/5-Inch Color CCDs

Preliminary

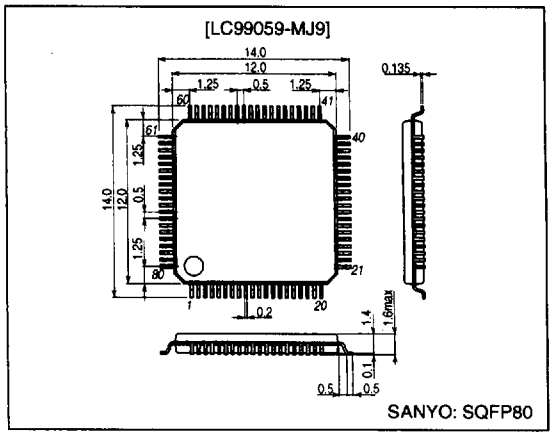
Functions and Applications

Control IC for image sensor.

Package Dimensions

unit: mm

3220-SQFP80



Specifications

Absolute Maximum Ratings at V_{SS} = 0 V

Parameter		Symbol	Conditions	Ratings	Unit
Supply voltage		V_{DD}		−0.3 to +7.0	V
Input/output voltage		V_{I1}, V_{O1}		−0.3 to V_{DD1} + 0.3	V
Allowable power dissipation		Pd max	Ta ≤ 60°C	+500 *1	mW
Operating temperature		Topr		−15 to +60	°C
Storage temperature		Tsty		−55 to +125	°C
Soldering temperature	Manual soldering	—	3 s	350	°C
	Reflow	—	10 s	235	°C
Input/output current		Ii, Io		±10 *2	mA

Note: *1. The allowable power dissipation is guaranteed for the IC on a standalone basis. For further details, please contact the Quality Assurance Department.
*2. Value for 1 input/output reference cell.

Allowable Operating Ranges at Ta = −15 to +60°C, V_{SS} = 0 V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply voltage	V_{DD}		4.75	5.00	5.25	V
Input voltage range	V_{IN}		0	—	V_{DD}	V

Electrical Specifications

DC Characteristics at Ta = –15 to +60°C, V_{SS} = 0 V, V_{DD} = 4.75 to 5.25 V

Parameter	Symbol	Conditions	Ratings			Unit	Applicable pins*
			min	typ	max		
High-level input voltage	V_{IH}	CMOS levels	0.7 V_{DD}	—	—	V	(1)
Low-level input voltage	V_{IL}		—	—	0.3 V_{DD}	V	
High-level input voltage	V_{IH}	TTL levels	2.2	—	—	V	(2)
Low-level input voltage	V_{IL}		—	—	0.8	V	
High-level input voltage	V_{IH}	TTL levels Schmitt	2.5	—	—	V	(3)
Low-level input voltage	V_{IL}		—	—	0.6	V	
High-level output voltage	V_{OH}	I_{OH} = –4 mA	V_{DD} – 2.1	—	—	V	(4)
Low-level output voltage	V_{OL}	I_{OL} = 4 mA	—	—	0.4	V	
High-level output voltage	V_{OH}	I_{OH} = –2.7 mA	V_{DD} – 2.1	—	—	V	(5)
Low-level output voltage	V_{OL}	I_{OL} = 2.7 mA	—	—	0.4	V	
High-level output voltage	V_{OH}	I_{OH} = –8 mA	V_{DD} – 2.1	—	—	V	(6)
Low-level output voltage	V_{OL}	I_{OL} = 8 mA	—	—	0.4	V	
High-level output voltage	V_{OH}	I_{OH} = –25 mA	V_{DD} – 2.1	—	—	V	(7)
Low-level output voltage	V_{OL}	I_{OL} = 25 mA	—	—	0.4	V	
High-level output voltage	V_{OH}	I_{OH} = –8 mA	V_{DD} – 2.1	—	—	V	(8)
Low-level output voltage	V_{OL}	I_{OL} = 4 mA	—	—	0.4	V	
Input leak current	I_{IL}	V_I = V_{SS}, V_{DD}	–10		+10	µA	(1), (2), (3)
Output leak current	I_{OZ}	During high-impedance output	–10		+10	µA	(5)

Note: * The applicable pin sets are as follows.

INPUT

(1) TEST, STRMD0, STRMD1, FTRT1, FTRT2, HTRGCON, VPIX, CPSW, STDBYAD, MCKI, CLKMOD0, CLKMOD1

(2) RESB, OEB, CLP1IN, FLD

(3) REGRESB, SCLK, SDATA, HTTRG, HVSTRG, FTTRG, STTRG

OUTPUT

(4) NSUB, VI1 to 4, VS1 to 4, HFLG, REGOUT, HTCLK, CLP, VPOUT

(5) DOUT0 to 7

(6) HTR, WHCLK, MCK

(7) HT1, HT2

(8) MCKO

Note: Pins GIN, CCDIN, CAP1, CAPA2, YOUT, YIN, CAPB2, MONITOR, REFHIN, REFLIN, REFH, REFL, and REFM are not included in DC characteristics.

Block Diagram