

ISSUE DATE	NOTIFICATION No.
10 March 2017	PCN-2017-0310-01

**This is to advise you that the following product will be changed.**

**PRODUCT ID (DESCRIPTION):**

LCD Module: LQ050Y3DC02

**DESCRIPTION OF CHANGE:**

Sharp is making changes to this LCD module that impact multiple design characteristics. Please see the following pages in this document for details. Changes are effective immediately.

**EFFECT OF CHANGE:**

Changes to this module include changes to specific aspects of Input Terminal Functions, Absolute Maximum Ratings, Electrical Characteristics, AC Electrical Characteristics, and Vertical Timing Limits.

In case of further questions, please contact your Sharp sales representative.

## Affected Part Numbers

BEFORE CHANGE			
Pin No.	Symbol	I/O	Description
30	DCLK	I	Clock input pin in serial mode
31	DISP	I	Display On/Off
32	Hsync	I	Line synchronization signal
33	Vsync	I	Frame synchronization signal
34	DEN	I	Data input enable
35	NC	I	No connection
36	DGND	P	Digital ground
37	NC	-	No connection
38	NC	-	No connection
39	UPDN	-	Vertical scanning direction switching signal

Recommendation CN: FH19SC-40S-0.5SH(55) (HRS)(40pin/0.5mm pitch/Up contact)

AFTER CHANGE			
Pin No.	Symbol	I/O	Description
30	DCLK	I	Clock input pin in serial mode
31	DISP	I	Display On/Off
32	Hsync	I	Line synchronization signal
33	Vsync	I	Frame synchronization signal
34	DEN	I	Data input enable
<b>35</b>	<b>DGND</b>	<b>P</b>	<b>Digital ground</b>
36	DGND	P	Digital ground
<b>37</b>	<b>DGND</b>	<b>P</b>	<b>Digital ground</b>
<b>38</b>	<b>DGND</b>	<b>P</b>	<b>Digital ground</b>
39	UPDN	-	Vertical scanning direction switching signal

## Absolute Maximum Ratings

BEFORE CHANGE				
Item	Symbol	Conditions	Rated Value	Unit
Digital power supply voltage	VDD	Ta=25°C	-0.5 to +5.0	V
Temperature for storage	Tstg	-	-30 to +80	°C
Temperature for operation	Topr	-	-20 to +70	°C
BL input electric current	I <sub>BL</sub>	Ta=25°C	60	mA
LED electricity consumption	P <sub>LED</sub>	Ta=25°C	105	mW

AFTER CHANGE				
Item	Symbol	Conditions	Rated Value	Unit
<b>Digital power supply voltage</b>	VDD	Ta=25°C	<b>-0.5 ~ +3.96</b>	V
Temperature for storage	Tstg	-	-30 to +80	°C
Temperature for operation	Topr	-	-20 to +70	°C
BL input electric current	I <sub>BL</sub>	Ta=25°C	60	mA
LED electricity consumption	P <sub>LED</sub>	Ta=25°C	105	mW

## Electrical Characteristics

BEFORE CHANGE							
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	Applicable Pin
Supply voltage	VDD-GND	Operating Voltage	2.7	3.3	3.6	V	(note 1)
“H”-level input voltage	V <sub>IH</sub>	-	0.7×VDD	-	VDD	V	For Digital Circuit
“L”-level input voltage	V <sub>IL</sub>	-	0	-	0.3×VDD	V	For Digital Circuit
Input leakage current	I <sub>LI</sub>	VIN=VDD or VSS	-	-	±0.1	μA	(note 1, 2)
“H”-level output voltage	V <sub>OH</sub>	1OL=1.0mA	VDD-0.4	-	-	V	(note 1, 2)
“L”-level output voltage	V <sub>OL</sub>	1OL=1.0mA	-	-	VSS+0.4	V	(note 1, 2)
Current consumption 1 (normal display)	I <sub>CC</sub>	Ta=25°C	-	135	-	mA	(note 3)

AFTER CHANGE							
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	Applicable Pin
<b>Supply voltage</b>	VDD-GND	Operating Voltage	<b>3</b>	3.3	3.6	V	(note 1)
“H”-level input voltage	V <sub>IH</sub>	-	0.7×VDD	-	VDD	V	For Digital Circuit
“L”-level input voltage	V <sub>IL</sub>	-	0	-	0.3×VDD	V	For Digital Circuit
Input leakage current	I <sub>LI</sub>	VIN=VDD or VSS	-	-	±0.1	μA	(note 1, 2)
“H”-level output voltage	V <sub>OH</sub>	1OL=1.0mA	VDD-0.4	-	-	V	(note 1, 2)
“L”-level output voltage	V <sub>OL</sub>	1OL=1.0mA	-	-	VSS+0.4	V	(note 1, 2)
<b>Current consumption 1 (normal display)</b>	<b>I<sub>VDD</sub></b>	Ta=25°C <b>VDD=3.3V</b>	-	<b>110</b>	-	mA	(note 3)

(note 1) VDD=3 to 3.6V, GND=0V, Ta=-20 to 70°C

(note 2) B7~B0, G7~G0, R7~R0, DISP, VSYNC, HSYNC, DEN, DLCK

(note 3) Following Conditions

## AC Electrical Characteristics

BEFORE CHANGE					
Parameter	Symbol	Min.	Typ.	Max.	Unit
Data set-up time	$T_{dsu}$	8	-	-	ns
Data hold time	$T_{dhd}$	8	-	-	ns
DE set-up time	$T_{esu}$	8	-	-	ns
DE hold time	$T_{ehd}$	8	-	-	ns
VDD power-on slew rate	$T_{POR}$	-	-	20	ms
RSTB pulse width	$T_{Rst}$	10	-	-	us
CLKIN cycle time	$T_{cph}$	20	-	-	ns
CLKIN pulse duty	-	40	50	60	%
Output stable time	$T_{sst}$	-	-	6	us

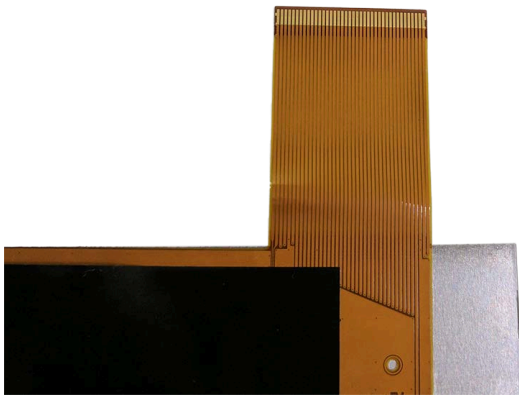
AFTER CHANGE					
Parameter	Symbol	Min.	Typ.	Max.	Unit
Data set-up time	$T_{dsu}$	8	-	-	ns
Data hold time	$T_{dhd}$	8	-	-	ns
DE set-up time	$T_{esu}$	8	-	-	ns
DE hold time	$T_{ehd}$	8	-	-	ns
VDD power-on slew rate	$T_{POR}$	-	-	20	ms
RSTB pulse width	$T_{Rst}$	10	-	-	us
CLKIN cycle time	$T_{cph}$	20	-	-	ns
CLKIN pulse duty	-	40	50	60	%
<b>CLOCK high width</b>	<b><math>T_{chw}</math></b>	<b>8</b>	-	-	<b>ns</b>
<b>CLOCK low width</b>	<b><math>T_{clw}</math></b>	<b>8</b>	-	-	<b>ns</b>
Output stable time	$T_{sst}$	-	-	6	us

## Vertical Timing

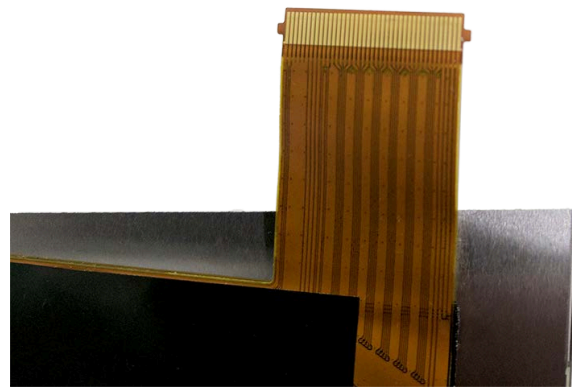
BEFORE CHANGE					
Parameter	Symbol	Min.	Typ.	Max.	Unit
Vertical display area	tvd	480			T <sub>H</sub>
DE mode blanking	tv-tvd	4	45	255	T <sub>H</sub>

AFTER CHANGE					
Parameter	Symbol	Min.	Typ.	Max.	Unit
Vertical display area	tvd	480			T <sub>H</sub>
<b>DE mode blanking</b>	tv-tvd	<b>33</b>	45	<b>287</b>	T <sub>H</sub>

## FPC



Previous Flex



New Tabbed Flex

Preferred Mating Connector:  
Hirose series, p/n: FH41-40S-0.5SH(05)