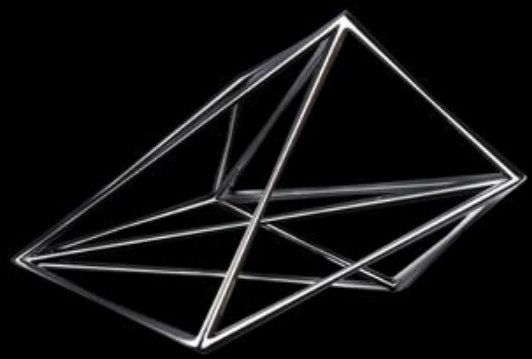
Symmetron

Автомобильные матрицы Mitsubishi Electric



Автомобильные матрицы 10.25”, 12.3”, 15”

- Высокая надежность
- Долгий срок жизни модели (более 20 лет
- Стандарт ISO/TS16949
- Интегрированная функция безопасности

10.25”

12.3”

15”

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Автомобильные матрицы 10.25”, 12.3”, 15”

Item	MP Ready 10.25”	MP Ready 12.3”	Dev. Status 15”
Part number	AA103AE01	AA123AF01	AA150AC01
Display technology	Normally Black Super Wide View	Normally Black Super Wide View	Normally Black Super Wide View
Screen size (Diagonal)	10.25-inch diagonal	12.3-inch diagonal	15-inch diagonal
Aspect ratio	8 : 3	8 : 3	8 : 3
Display resolution (dots)	1920(H) x 720(V)	1920(H) x 720(V)	1920(H) x 720(V)
Dot pitch (mm)	0.1269(H) x 0.1269(V)	0.15225(H) x 0.15225(V)	0.18525(H) x 0.18525(V)
Input video signal / color	1ch LVDS / 16.7M (8bit)	1ch LVDS / 16.7M (8bit)	1ch LVDS / 16.7M (8bit)
Front surface treatment	AG on polarizer surface	AG on polarizer surface	AG on polarizer surface
Luminance	typ. 1000 cd/m^2	typ. 1000 cd/m^2	typ. 1000 cd/m^2
Contrast	typ. 1000:1	typ. 1000:1	typ. 1000:1
Contrast viewing angle	U/D/L/R=85/85/85/85	U/D/L/R=85/85/85/85	U/D/L/R=85/85/85/85
Color white	x= 0.313/ y=0.329	typ. x= 0.313/ y=0.329	x= 0.313/ y=0.329
Color gamut	typ. 72%	typ. 72%	typ. 72%
Power consumption	typ. 8.2W	typ. 10.3W	typ. 16.7 W
Timing controller	Integrated	Integrated	Integrated
LCD power	VCC = 3.3 (typ.)	VCC = 3.3V (typ.)	VCC=3.3V(typ.)
Backlight power	Vf=23.5V, If=73mA	Vf=29.2V, If=75mA	Vf=24.9V, If=95mA
LED Backlight driver	Not included	Not included	Not included
Operating Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Storage Temperature	-40°C ~ +90°C	-40°C ~ +90°C	-40°C ~ +90°C

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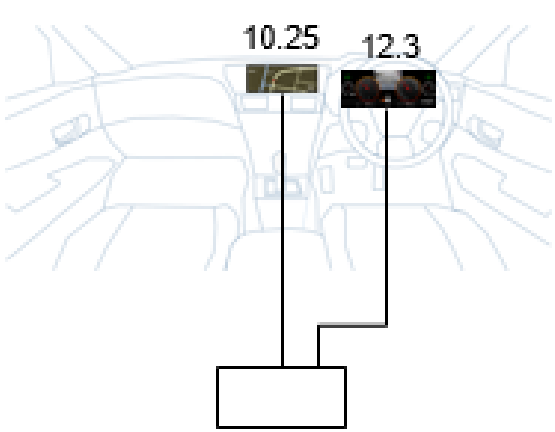
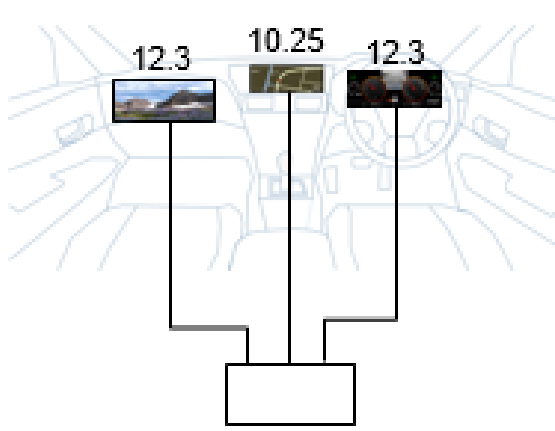
Автомобильные матрицы 10.25”, 12.3”, 15”

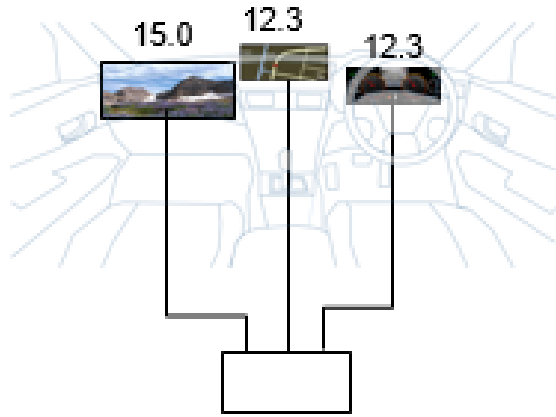
Item	Specification
Display resolution (dots)	1920(H) x 720(V)
Luminance	typ. 1000 cd/m^2
Contrast	typ. 1000:1
Contrast viewing angle	U/D/L/R=85/85/85/85
Color white	x= 0.313/ y=0.329
Color gamut	typ. 72%
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +90°C



Entry line



Medium line



High-end line

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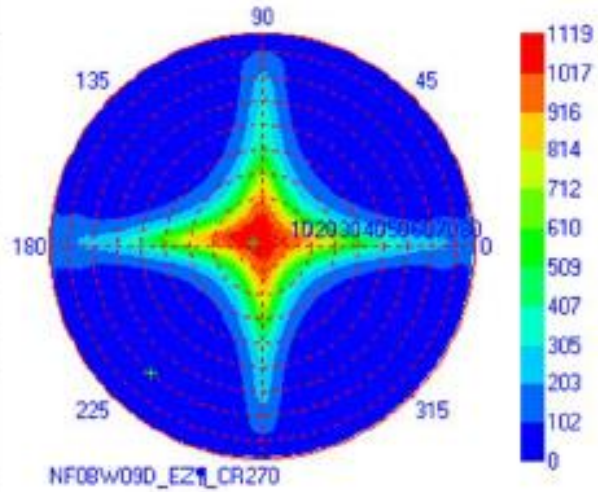
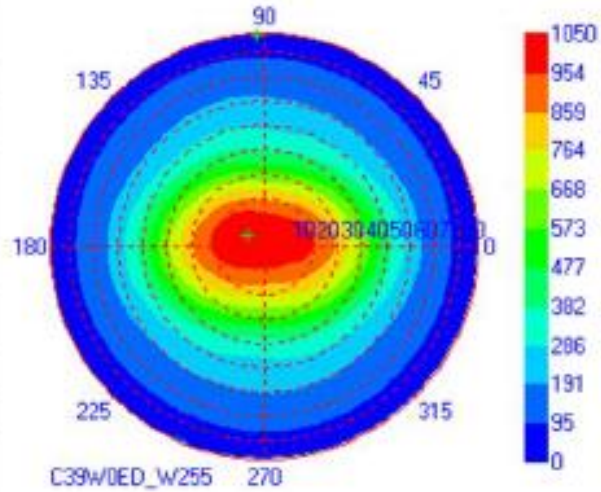
Автомобильные матрицы 10.25”, 12.3”, 15”

Item	Specification
Part number	AA103AE01
Display technology	Normally Black In-Plane-Switching
Screen size (Diagonal)	10.25-inch diagonal
Aspect ratio	8 : 3
Display resolution (dots)	1920(H) x 720(V)
Dot pitch (mm)	0.1269(H) x 0.1269(V)
Input video signal / color	open LDI (1ch LVDS) / 16.7M (8bit)
Front surface treatment	AG on polarizer surface
Luminance	typ. 1000 cd/m^2
Contrast	typ. 1000:1
Contrast viewing angle	U/D/L/R=85/85/85/85, CR>10:1
Color white	x= 0.313/ y=0.329
Color gamut	typ. 72%
Power consumption (Backlight unit)	typ. 6.2W
Timing controller	Integrated
LCD power	VCC = 3.3 (typ.)
LED Backlight driver	Not included
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +90°C



ISO contrast plot



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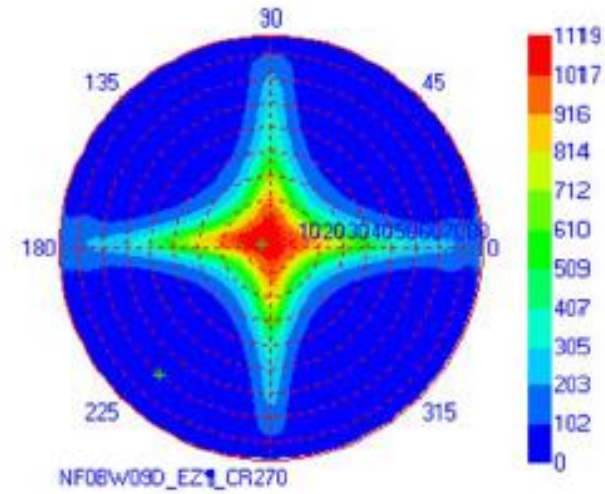
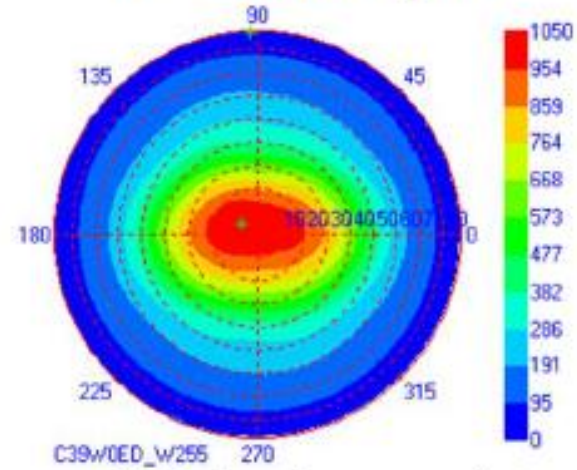
Автомобильные матрицы 10.25”, 12.3”, 15”

Item	Specification
Part number	AA123AF01
Display technology	Normally Black In-Plane-Switching
Screen size (Diagonal)	12.3-inch diagonal
Aspect ratio	8 : 3
Display resolution (dots)	1920(H) x 720(V) Landscape
Dot pitch (mm)	0.15225(H) x 0.15225(V)
Input video signal / color	open LDI (1ch LVDS) / 16.7M (8bit)
Front surface treatment	AG on polarizer surface,
Luminance	typ. 1000 cd/m^2
Contrast	typ. 1000:1
Contrast viewing angle	U/D/L/R=85/85/85/85 CR>10:1
Color white	Typ. x= 0.313/ y=0.329
Color gamut	typ. 72%
Power consumption (Backlight unit)	typ. 7.6W
Timing controller	Integrated
LCD Power	VCC = 3.3V (typ.)
LED backlight driver	Not included
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +90°C



ISO contrast plot



ISO luminance plot

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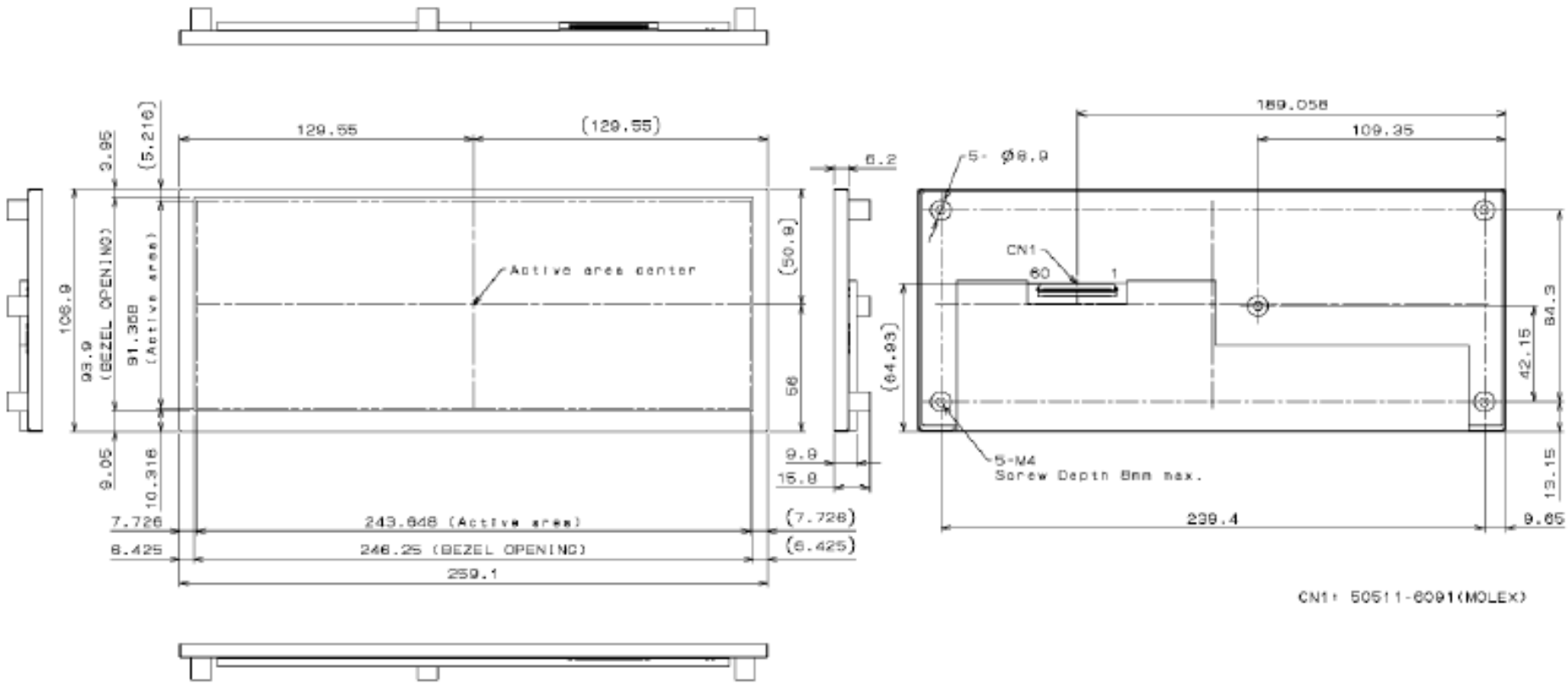
Автомобильные матрицы 10.25”, 12.3”, 15”



10.25”
1920 × RGB × 720

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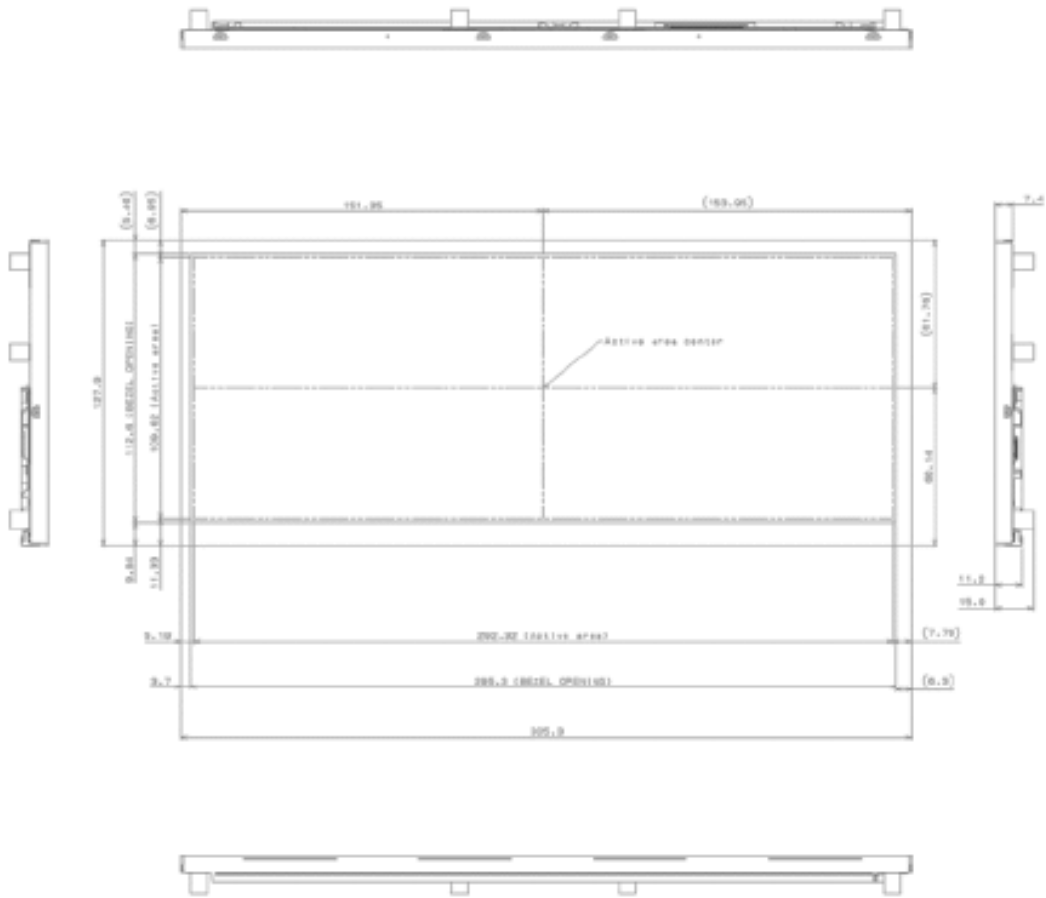
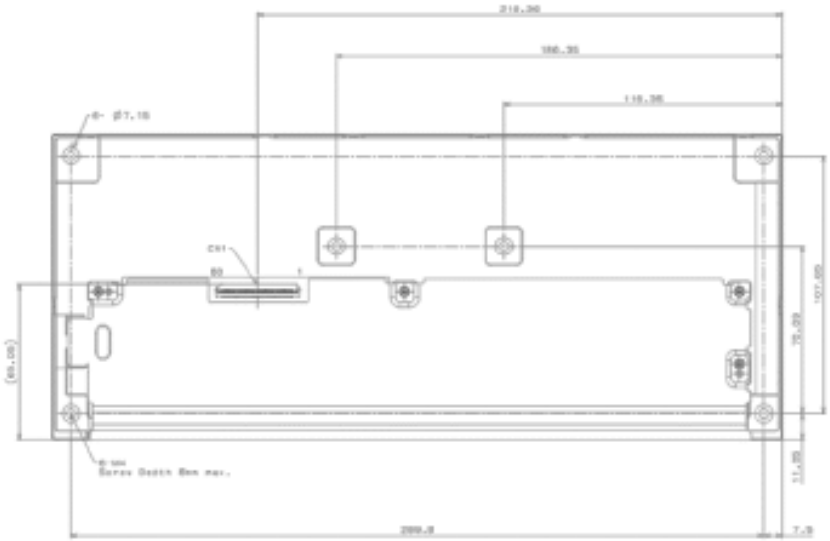
Автомобильные матрицы 10.25”, 12.3”, 15”





AA123AF01
1920 × RGB × 720

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Автомобильные матрицы 10.25”, 12.3”, 15”

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of

Mitsubishi Electric Corporation, LCD Division, Melco Display Technology Inc. Shisui Plant

1576-1 Sumiyoshi, Shisui-machi, Kikuchi-City, Kumamoto-Pref. 861-1203, Japan and, if applicable, the remote support locations as mentioned in the Appendix accompanying this Certificate

has been found to conform to quality management system standard:
IATF 16949:2016

This certificate is valid for the following Scope:
DESIGN AND MANUFACTURE OF LIQUID CRYSTAL DISPLAY PANELS AND MODULES.

JACO

Japan Audit and Certification Organization for Environment and Quality

UKAS 001 · JAB CM021

Mitsubishi Electric Corporation

2-7-3, Marunouchi, Chiyoda-ku, Tokyo, Japan

CERTIFICATE

Certificate No.: EC98J2017

ISO 14001:2015 · JIS Q 14001:2015

Production and sales of electronic equipment, applied electronic equipment, industrial equipment, information processing equipment, home electronics, lighting equipment, vehicle equipment, vessel equipment, aviation equipment, guided rocket, artificial satellite, communication equipment, machine tools, physics chemistry instruments, optical equipment, nuclear equipment, gas appliances, building/home related products, semiconductor devices, integrated circuits, general instrument and parts

Our organization certifies above organization to be complied with the requirement of indicated above management system.

Registration Date : 07/Mar/1996
Recertification Date: 14/Mar/2018
Issue Date : 14/Mar/2018
Certificate Expiry : 13/Mar/2021

Japan Audit and Certification Organization for Environment and Quality
3-2-19 Akasaka Minato-ku, Tokyo, Japan

President
A1550

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Автомобильные матрицы 10.25”, 12.3”, 15”

Automotive AA-Series offers safety functions

- TFT Timing Controller (T-con) detect defined failures
- Pin 13 has flag which become Low if one of defined failures is detected by the T-con
- Pin 44 + 45 have I²C interface to read-out specific failure mode

5. Interface Pin Connection

13	FAIL	Output : Fail detect signal (*5) (Normal: High, Fail: Low)

44	I2C_SCL	I2C (Serial Clock) (*3) "Internal pull-High"
45	I2C_SDA	I2C (Serial Data) (*3) "Internal pull-High"

Specification AA123AF01_X6

7. Failure Detection

7. FAILURE DETECTION

(1)LOOP

LOOP1 and LOOP2 are connected in the LCD module through PCB and panel (PCB→FPC→Glass→FPC→PCB). This can be used for internal broken wire detection. The normal resistance (RLB) is shown in page 6.

(2)FAIL

FAIL signal at pin #13 of CN1 indicates following failures (Normal: High, Fail: Low).
The reason of failure (Fail category) can be checked from I2C access.

Fail Category	Description	Action
System Fail	LCD detects input LVDS clock and/or Sync signal is completely out of range. It will be caused by signal generator failure on system side or transmission line failure.	LCD indicates FAIL pin to be Low and draws Black image by itself.
CRC Fail	LCD calculates CRC of input data stream in specific area. The additional control via I2C is necessary to activate this function. (set CRC area, expected CRC etc.)	No action
EEPROM Fail	There is an EEPROM in LCD to configure the timing controller. The configuration data is periodically reloaded to avoid soft error. If an error is detected during loading, FAIL signal is asserted.	LCD indicates FAIL pin to be Low
Gate Driver Fail	LCD detects gate feedback pulse to make sure the gate driver is correctly working. If an error is detected, FAIL signal is asserted.	LCD indicates FAIL pin to be Low
Source Driver Fail	LCD detects source feedback pulse to make sure the source driver is correctly working. If an error is detected, FAIL signal is asserted.	LCD indicates FAIL pin to be Low
mini LVDS Fail	"mini LVDS" is transmission line between internal timing controller and source drivers. The timing controller monitors failure of these line. If an error is detected, FAIL signal is asserted.	LCD indicates FAIL pin to be Low
PMIC Fail	LCD monitors the internal voltage is correctly generated, input voltage drop and thermal shut down. If an error is detected, FAIL signal is asserted.	LCD indicates FAIL pin to be Low

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