



PROMATE ELECTRONIC CO., LTD.

Product Specification

液晶之友 电话: 020-33819057
Http://www.lcdfriends.com

Model No.: PMLCM140RM-MB

Description: 4.0" TFT-LCD Module

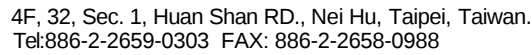
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Approved By			Checked By	Prepared By
Department		Date		
R&D	Robert	2/4/2002	S.C. Chy 1/31/2002	Joe Chung 28/Jan/2002
Marketing	Jue Chy	2/4/2002		
Sales		2/4/2002	☐ PM ☐ R&D	☒ PM ☐ R&D
Production	S.C. Chy	1/31/2002	☒ Production	☐ Production



Record of Revision

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Tel:886-2-2659-0303 FAX: 886-2-2658-0988

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A. General Description:

The model "PMLCM140RM-MB" is designed to replace the traditional CRT display via the TFT LCD panels. The model provides the easy selection of the standard composite video input or the specific R/G/B signals input. Besides, it is ergonomically designed to fit easily into confined space or can be wall mounted.

B. Applications:

The product is designed and manufactured for following application:

1. Videophone system
2. Door phone system
3. Portable TV
4. Security

Do not use the product for the following equipment that demands extremely high performance in terms of functionality, reliability or accuracy:

1. Aerospace equipment
2. Communication equipment for truck lines
3. Medical equipment related to life support, etc.

The other application that demands high reliability and functionality should first contact our sales representative.



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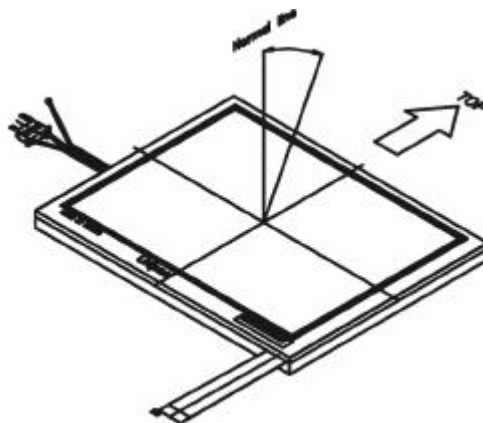
C. LCD module general specification

C-1. LCD specification

Items	Specification					Remark
Display resolution (dot)	480*234					
Active area (mm)	82.1(W)*61.8(H)					
Screen size (inch)	4.05(Diagonal)					
Dot pitch (mm)	0.171(W)*0.264(H)					
Color Configuration	R.G..B. Delta					
Overall dimension (Panel only)	96.0(W)*76.0(H)*6.5(D)					
Back light technology	CCFL*1					
Brightness (Luminance)	250 nit					Note 1
Front surface	Anti-glare hard coating					
View Angle	Top	CR 10	10°			Note 2
	Bottom		30°			
	Left		45°			
	Right		45°			
CR (Contrast Ratio)	150					Note 3
White chromaticity			Min	Typ.	Max.	
	x		0.25	0.30	0.35	
	y		0.30	0.35	0.40	
Response time	Rise		-	25ms	50ms	Note 4
	Fall		-	30ms	60ms	
Operating Temperature	0°C~60°C					
Storage Temperature	-25°C ~ 80°C					

Note 1. Measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.

Note 2. Definition of “Viewing Angle”



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Note 3. Definition of “Contrast Ratio”:

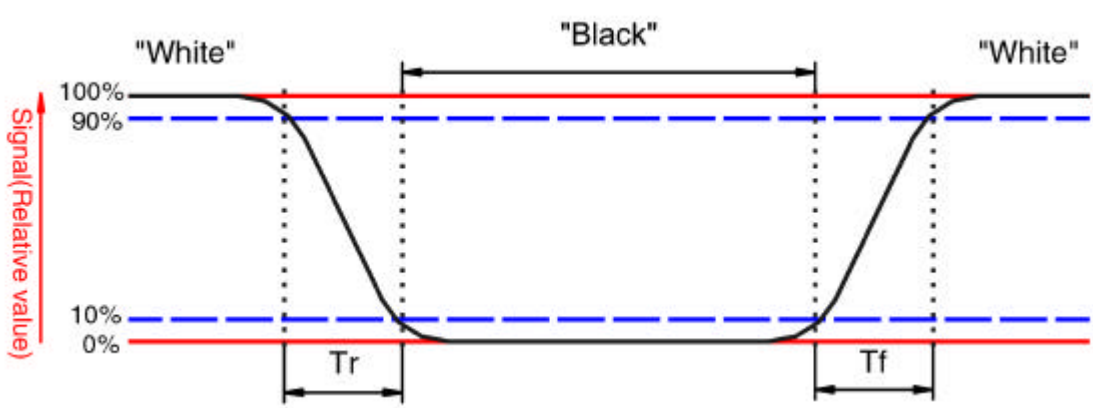
Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Photodetector output when LCD is at "White" state}}{\text{Photodetector output when LCD is at "Black" state}}$$

Note 4. Definition of “Response Time” :

The output signals of photodetector are measured when the input signals are changed from “black” to “white” (falling time) and from “white” to “black” (rising time), respectively.

The response time is defined as the time interval between the 10% and 90% of amplitudes. Refer to figure as below.





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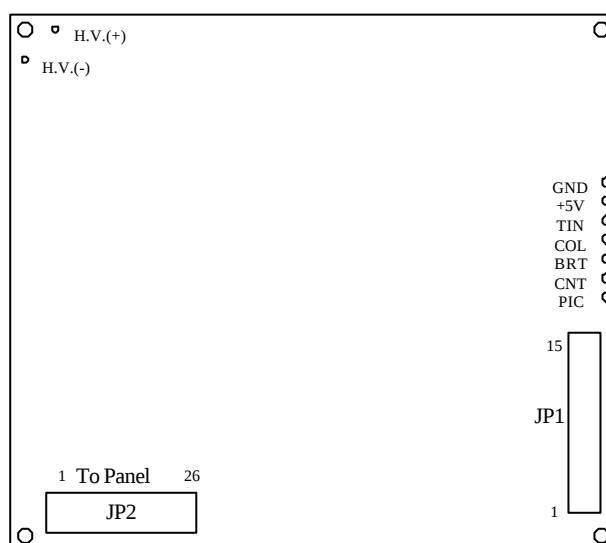
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C-2. Driving board Specification

Item	Specification	Remark
Decoding TV system	NTSC/PAL auto-switching	
Video Input	1Vp-p, 75Ω	
Video Interface	Standard Composite Video, Analog R/G/B	
Video Direct Selection	Up/Down scanning, Left/Right scanning	
Image adjustment	An extension interface is reserved for Image adjustment	Note 1
DC Voltage Input	12V± 2V	
Power Consumption	2.88Watt	
Operating Temperature	0°C ~ 60°C	
Storage Temperature	-25°C ~ 80°C	

Note 1:

7 through holes are reserved adjacent to JP1 for image specialty adjustment. (See outline drawing below).



The control row is defined as:

Symbol	I/O	Description
GND	-	Ground for ext. control
+5V	O	+5V power supply for ext. control
TIN	I	Tint
COL	I	Hue
BRT	I	Brightness
CNT	I	Contrast
PIC	I	Sharpness



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The recommended input value for image adjustment is:

Symbol	Condition	Adjusted Voltage			Remark
		Min.	Typical	Max	
TIN	Vcc=5V	3V	3.3V	4V	TIN can only be operated in NTSC
COL		2.6V	3.2V	4V	
BRT		2.05V	2.11V	2.16V	
CNT		2.13V	3.03V	3.13V	
PIC		1.0V	1.5V	3.6V	

D. Reliability test items:

No.	Test items	Conditions	Remark
1	High temperature storage	Ta = 80°C 240H	
2	Low temperature storage	Ta = -25°C 240H	
3	High temperature operation	Ta = 60°C 240H	
4	Low temperature operation	Ta = 0°C 240H	
5	High temperature and humidity	Ta = 60°C 95%RH 240H	Operation
6	Heat shock	-25°C ~ +80°C/50 cycles 2H/cycle	Non-operation
7	Electrostatic discharge	± 200V, 200pF(0 Ω),once for each terminal	Non-operation
8	Vibration	Frequency range: 10~55Hz Stroke: 1.5mm Sweep: 10Hz~55Hz 2 hours for each direction of X,Y,Z (6 hours for total)	JIS C7021, A-10 condition A
9	Mechanical shock	100G 6ms, ±X, ±Y, ±Z 3 times for each direction	JIS C7021, A-10 condition C
10	Vibration (with carton)	Random vibration: 0.015G ² /Hz from 5 ~ 200Hz -6dB/Octave from 200~500Hz	ICE 68-34
11	Drop (with carton)	Height: 80cm 1 corner, 3 edges, 6 surfaces	

Note: Ta: Ambient temperature



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E. Interface description

The connector of the user-controlled interface on the Driving board is Molex 53398-1590 or equivalent. Related housing is Molex 51021-1500 or equivalent.

Pin assignment is as follow:

Pin No.	Pin Assignment	I/O	Pin Description	Remark
1	/Hsync	O	Horizontal Sync. Output for specific Application.	
2	/Vsync	O	Vertical Sync. Output for specific Application.	
3	NPC	I/O	NTSC/PAL mode selection.	Note 1
4	SW	I	Composite/Analog RGB Signal Selection.	Note 2
5	CVS	I	Composite Video Signal Input.	
6	Bin	I	Separated Blue Video Signal Input	
7	Rin	I	Separated Red Video Signal Input	
8	Gin	I	Separated Green Video Signal Input	
9	GND	-	Ground	
10	GNDS	-	Ground	
11	Vin	I	12 Voltage DC Input	
12	GNDS	-	Ground	
13	COL	I	Color terminal adjustment	
14	LR	I	Left/Right scan selection	Note 3
15	UD	I	Up/Down scan selection	Note 4

Note 1: Default is auto detect for NTSC and PAL system. (Controlled by internal UPS015). High for mode and Low for PAL mode.

Note 2: Default is Composite Signal (Low); High is for separated Analog RGB signals.

Note 3: Default is reversed scanning (High) and low is for normal scanning (L → R)

Please do force this pin to ground for normal scan, from left to right.

Note 4: Default is reversed scanning (High) and low is for normal scanning (U → D)

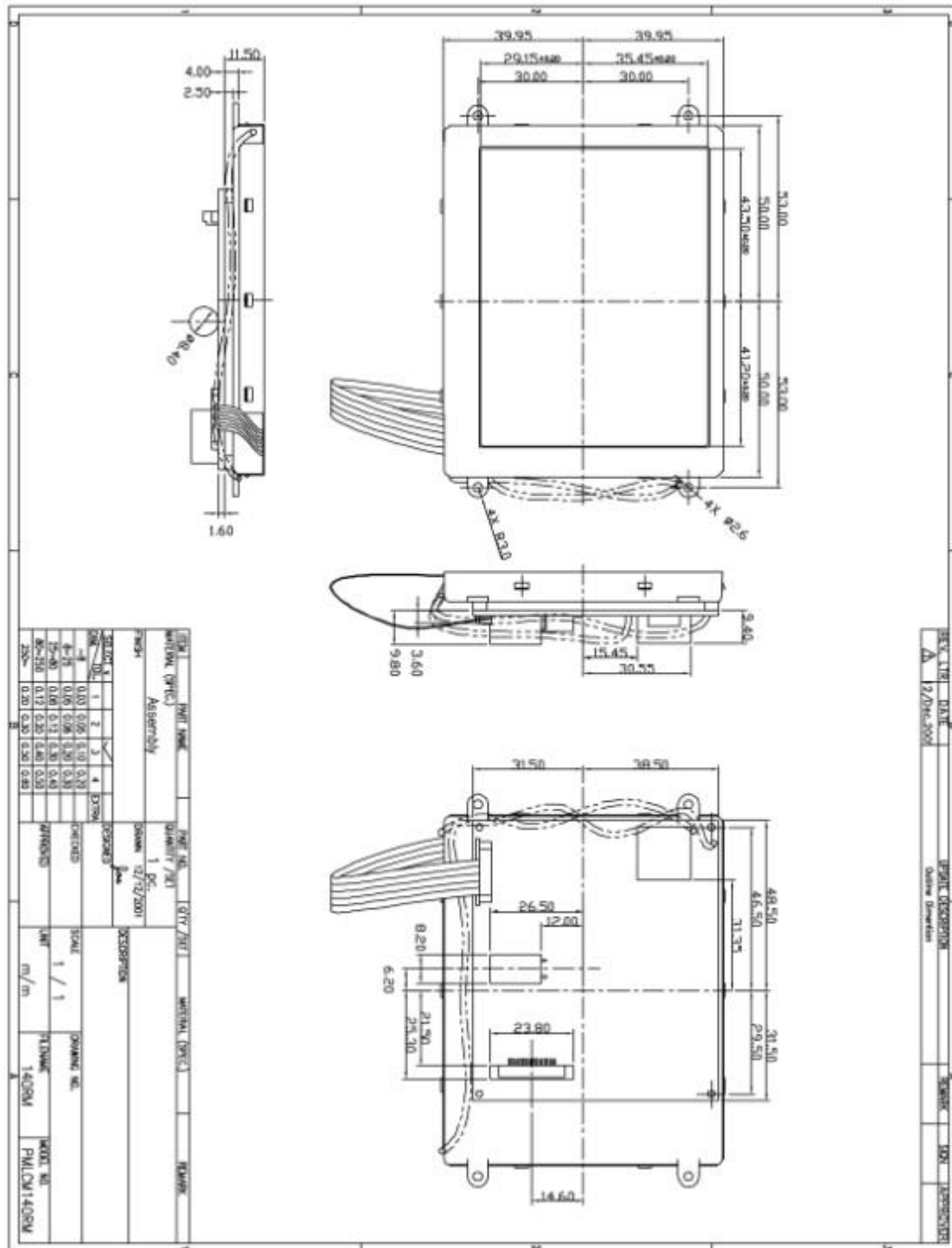
Please do force this pin to ground for normal scan, from up to down.



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Appendix A-1: Mechanical drawing



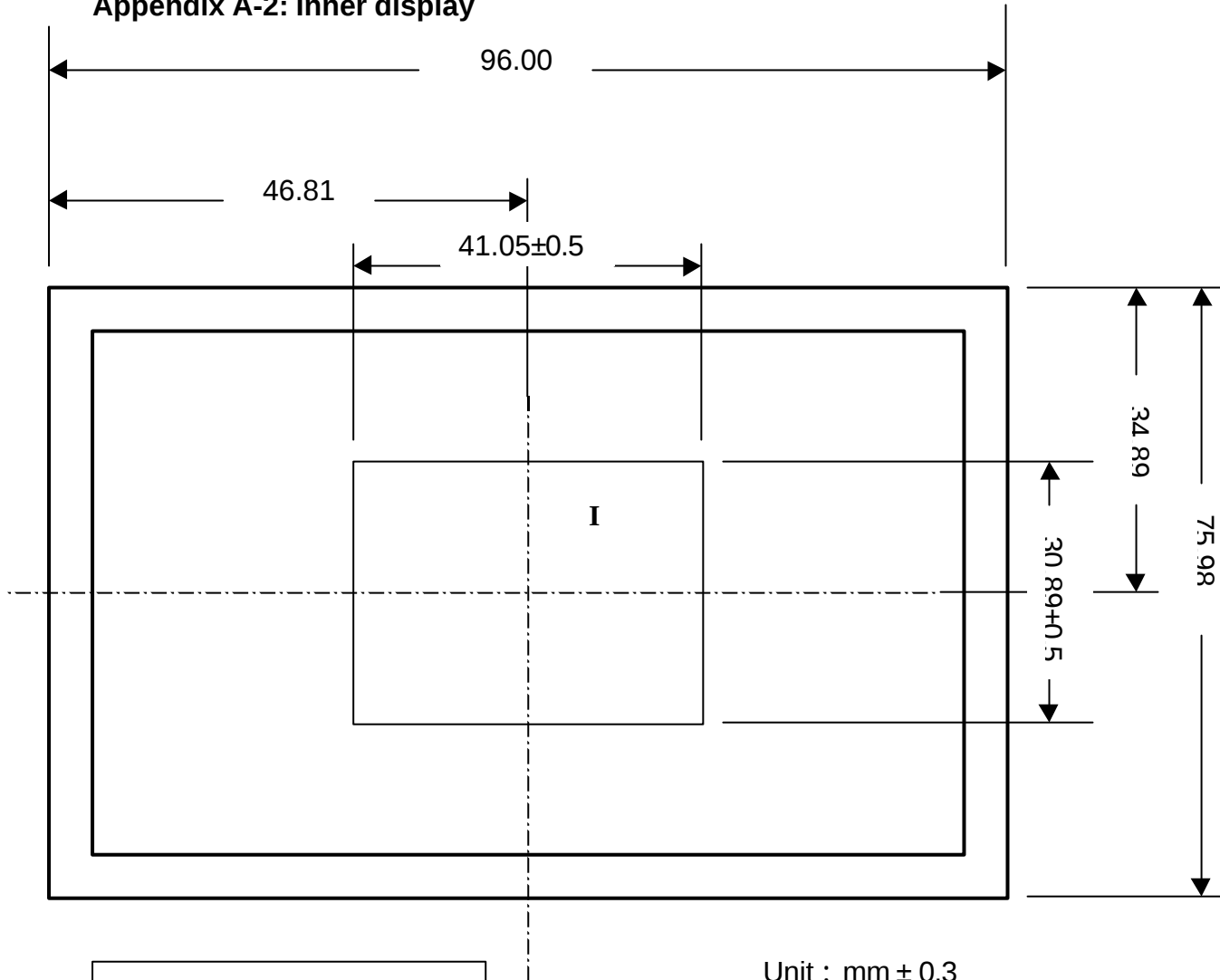
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Appendix A-2: Inner display



DATE OF ISSUE: 20.12.2001

REV. : 1.1

Unit : mm ± 0.3

I : Inner display area

SPECIAL REQUEST BY MITSUBISHI

THIS DRAWING IS TRANSFERRED FROM

UNIPAC OPTOELECTRONICS CORPORATION , THE

INCOMING INSPECTION STANDARD FOR 4" A-GRADE TFT-

LCD MODULES , SPEC NO. 523-211-008 (APPENDIX B)

INSPECTION AREA FOR DOT DEFECT. THE DEFINITION OF DISPLAY AREA

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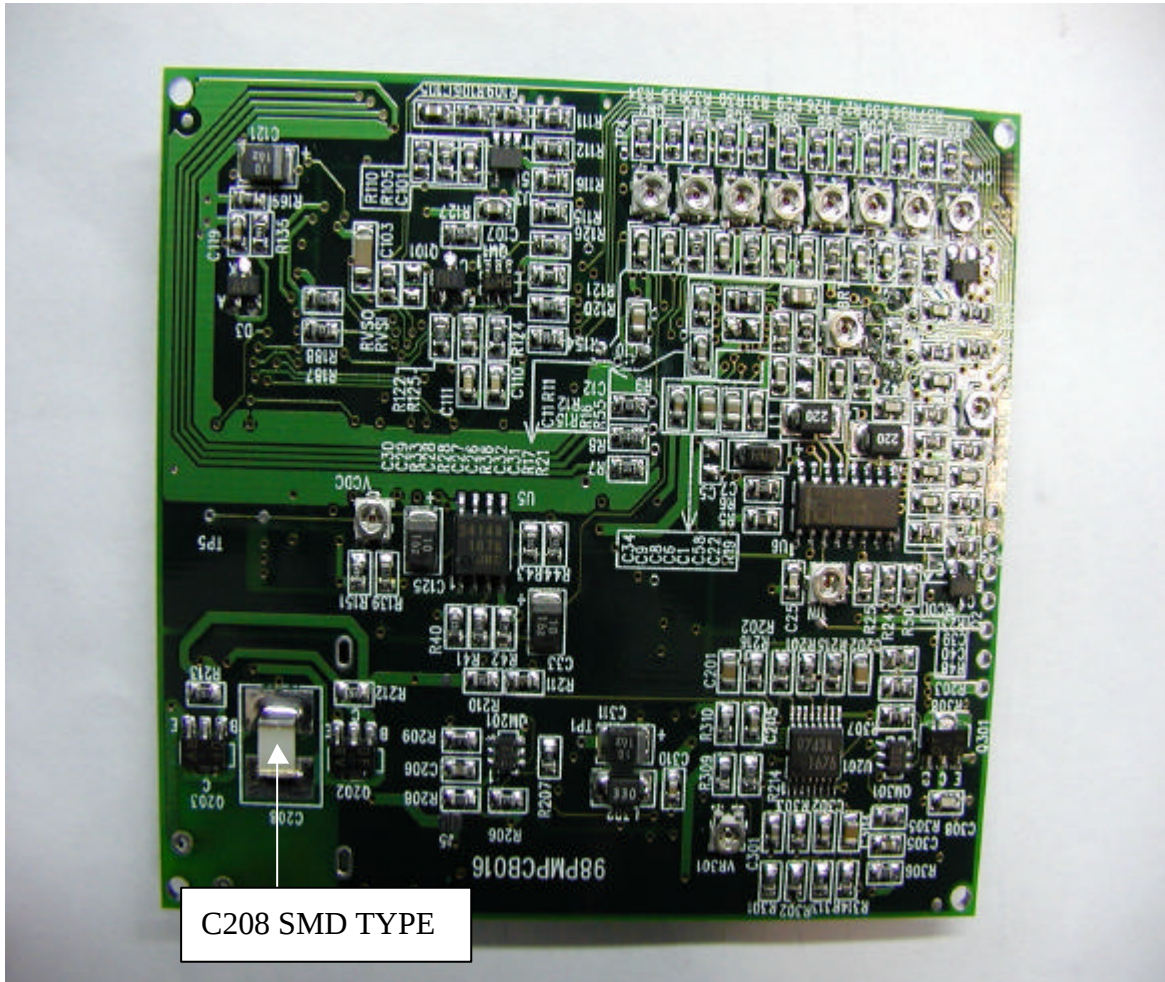


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Appendix A-3: Special request items from MITSUBISHI

A-3-1: Picture A C208



Special request by MITSUBISHI for SMD type C208

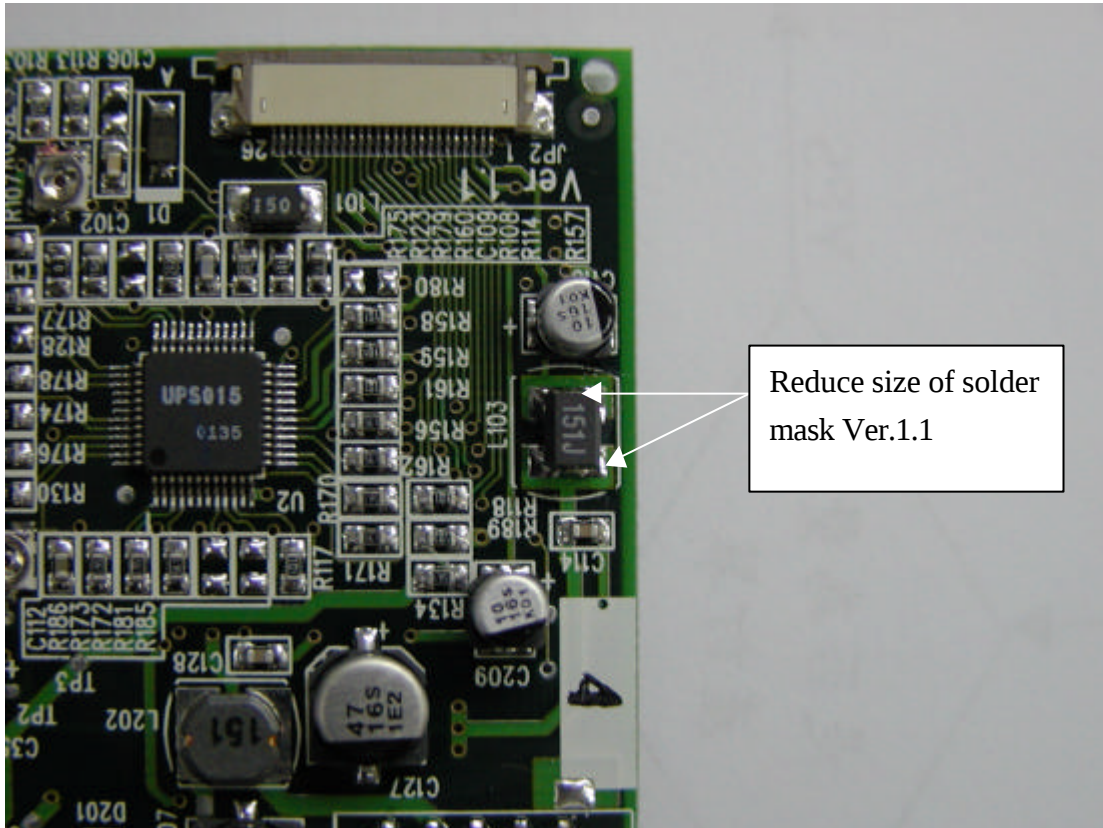
PICTURE A



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A-3-2 Picture B Solder Mask



Special request from MITSUBISHI for solder mask reduce

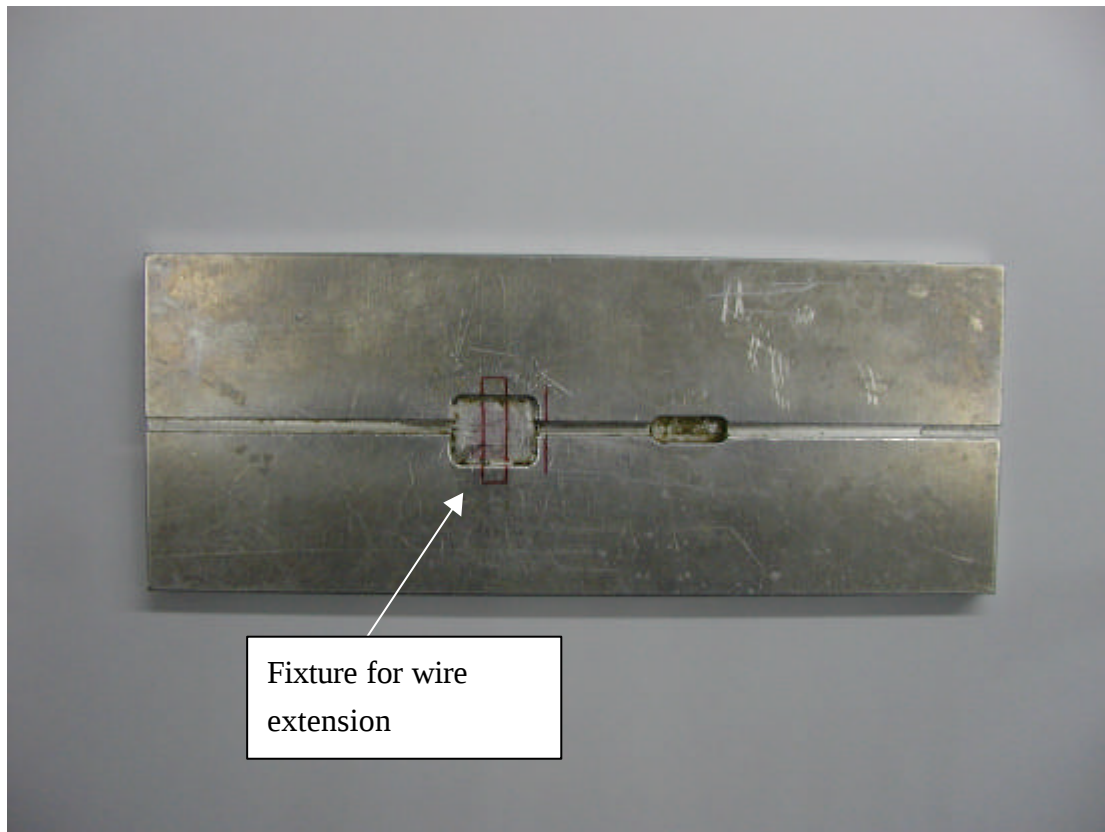
PICTURE B



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A-3-3-1: Picture C-1 Fixture for wire extension



Fixture for wire extension

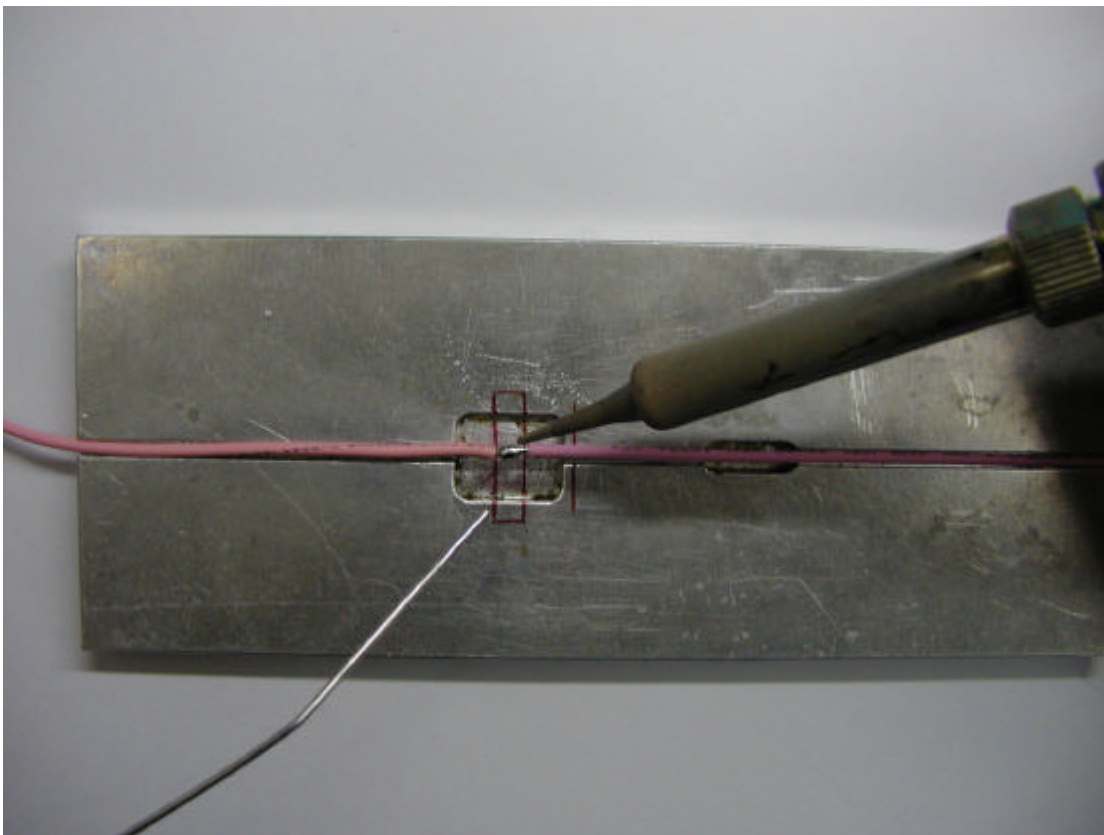
PICTURE C-1



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A-3-3-2: Picture C-2 Apply solder to the extension wire joint



Apply solder to the extension wire joint

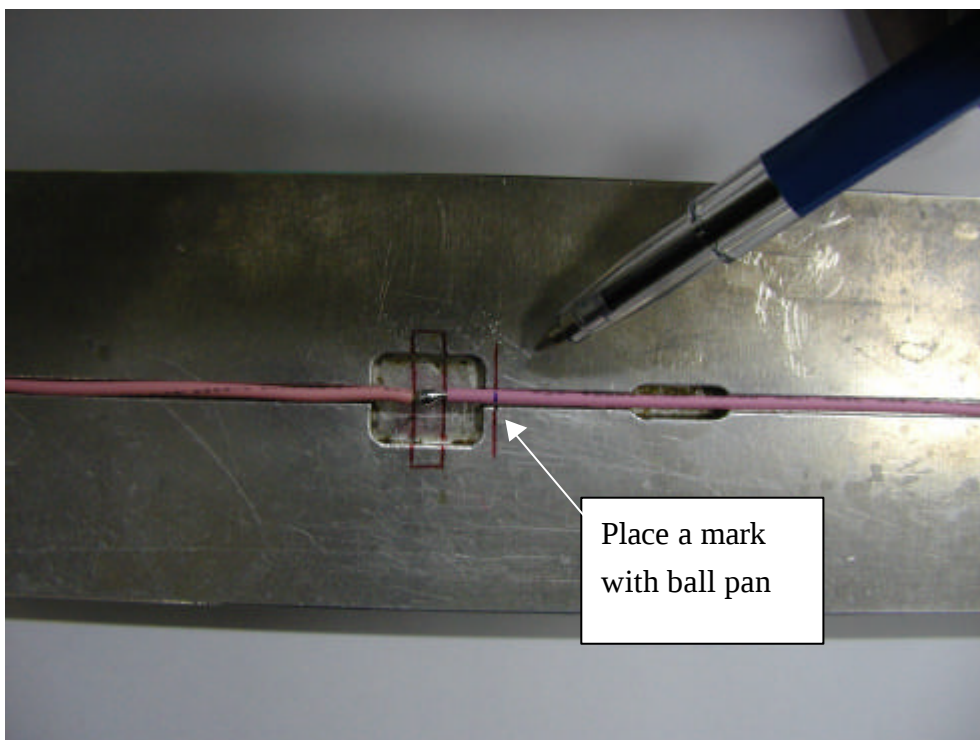
PICTURE C-2



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A-3-3-3: Picture C-3 Mark on the wire for silicon sleeve



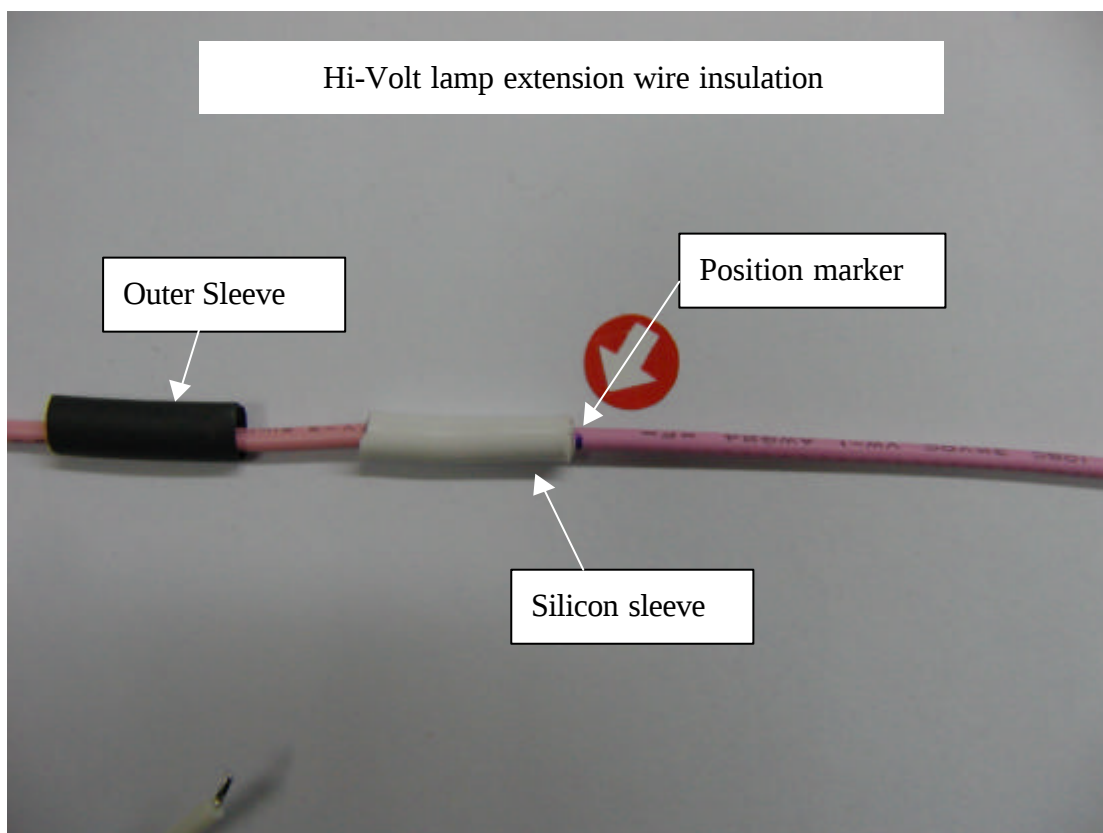
PICTURE C-3



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A-3-3-4: Picture C-4 Silicon Sleeve



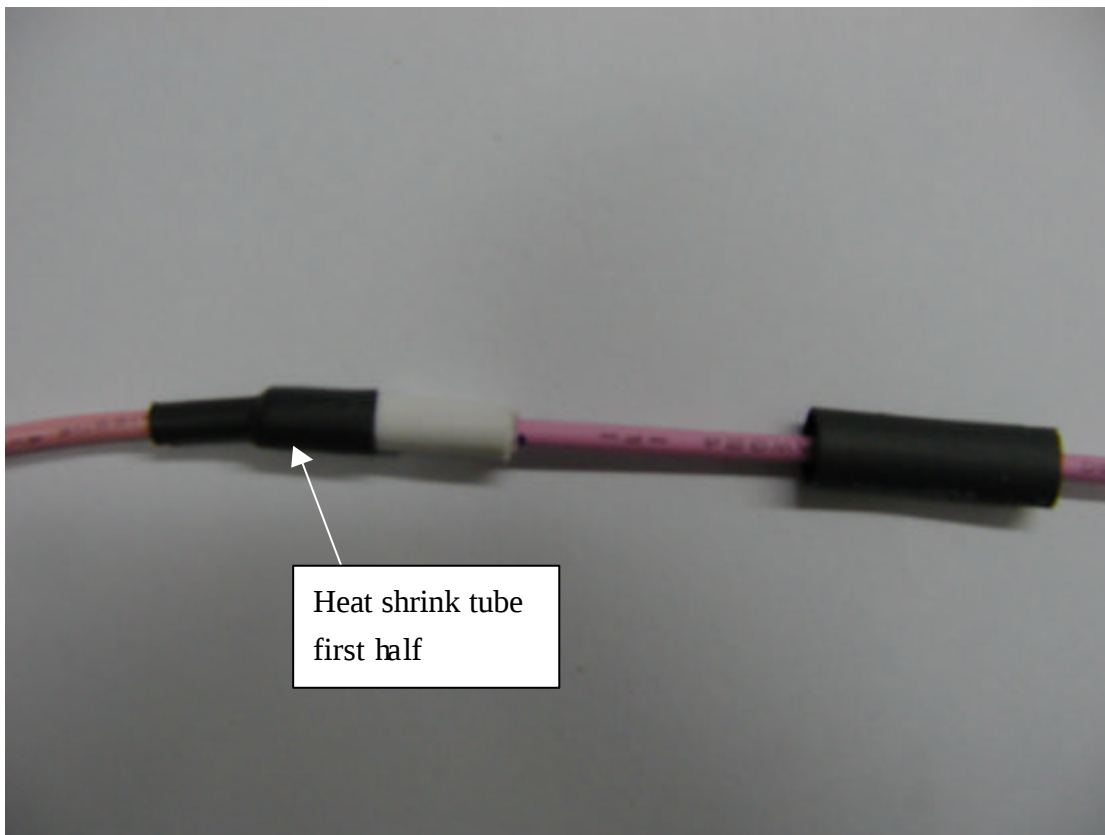
PICTURE C-4



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A-3-3-5: Picture C-5



Extension wire insulation

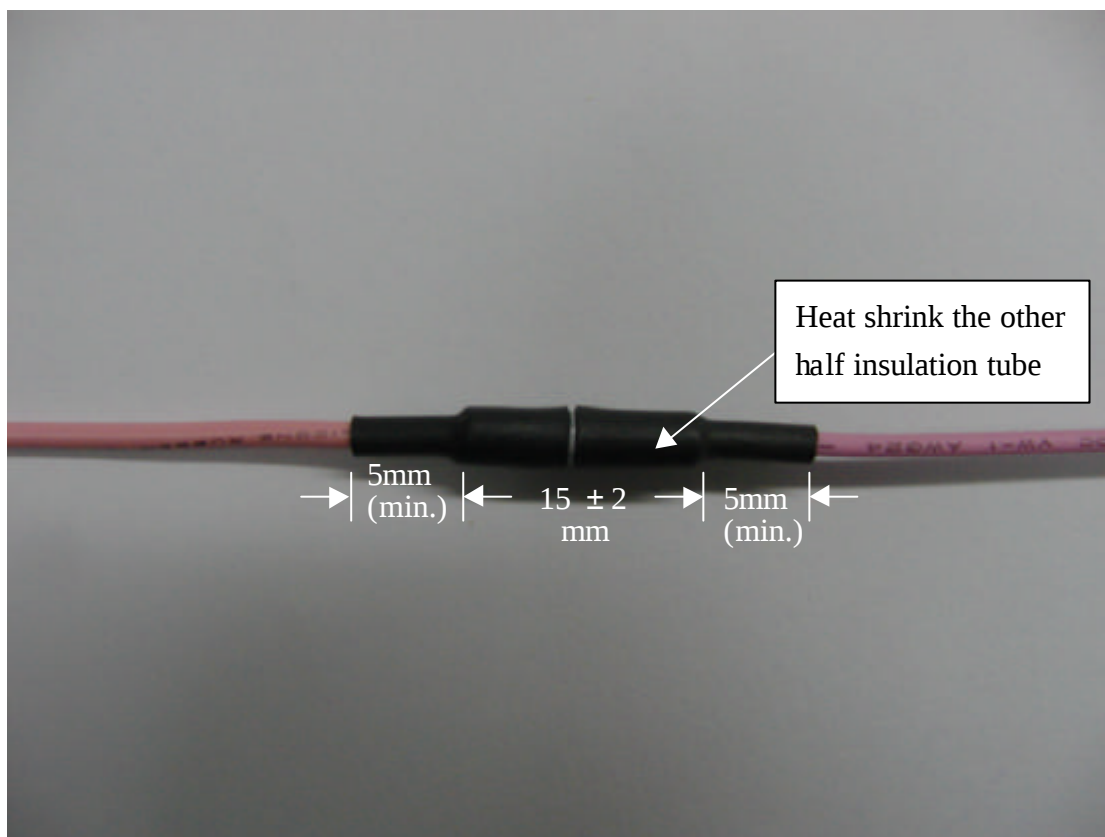
PICTURE C-5

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A-3-3-6:Picture C-6



Insulation for extension wire

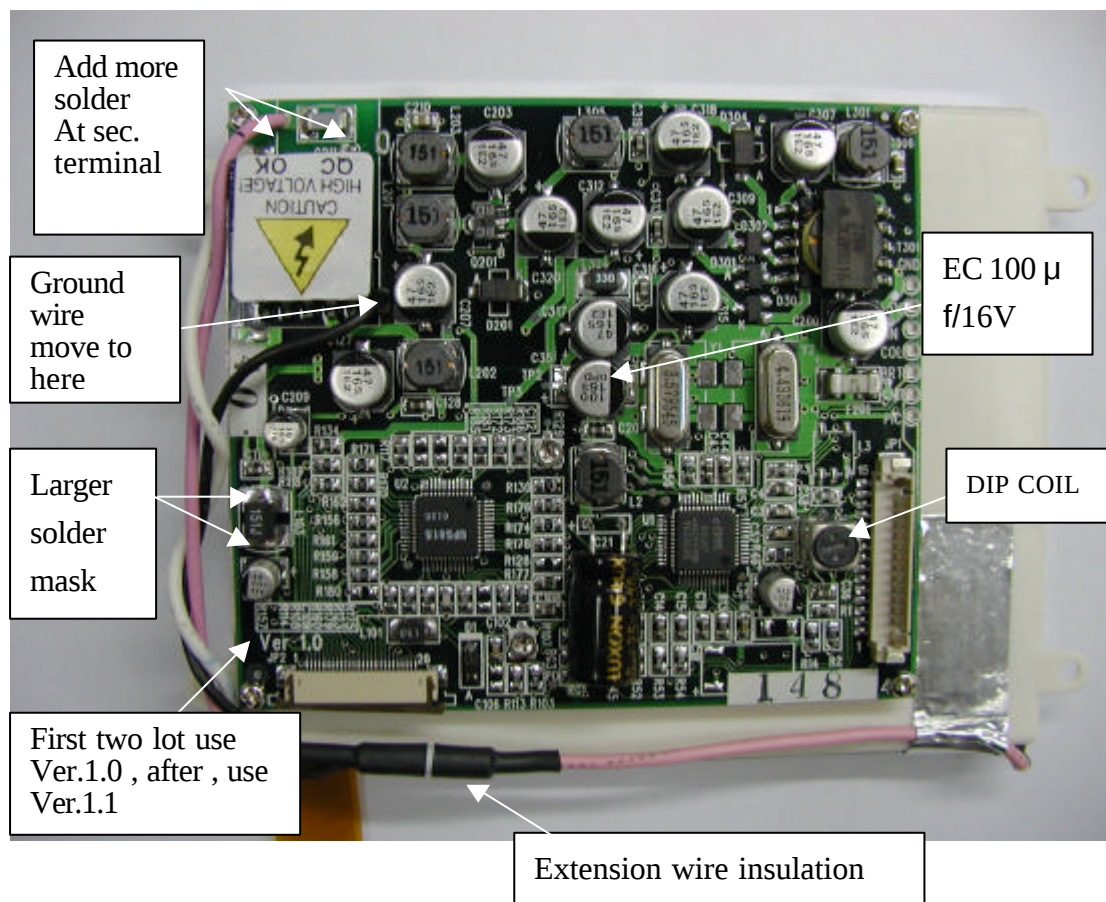
PICTURE C-6



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A-3-4:Picture D



Special request by MITSUBISHI

PICTURE D

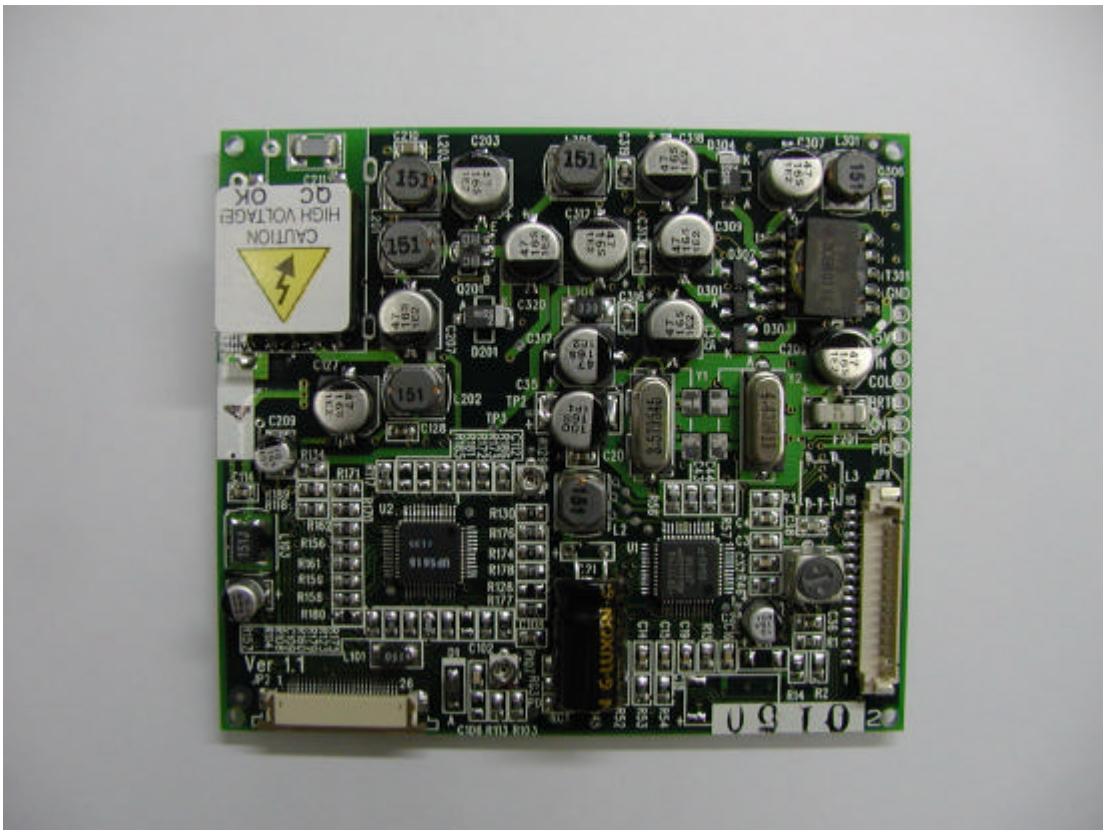
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A-3-5: Picture E



Ver.1.1 new PCB assembly for the 3rd shipment and after

PICTURE E



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APPENDIX B

UNIPAC OPTOELECTRONICS CORPORATION

Spec. No. 523-211-008

Version : 1

Total pages : 4

Date : 1996.04.17

INCOMING INSPECTION STANDARD FOR 4" A-GRADE TFT-LCD MODULES

MODEL NAME: _____

The content of this technical information
is subject to change without notice.
Please contact Unipac or its agent for
further information.

Approved by	Checked by	Prepared by
<i>F. C. Su</i> <i>P-18-96</i>	<i>Bryan</i> <i>Tseng</i> <i>9/9 '96</i>	<i>Joey Chou</i> <i>9/6 '96</i>

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SPEC NO.:523-211-008

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1.Scope:

The incoming inspection standards shall be applied to TFT-LCD Modules (hereinafter called "Modules") that supplied by Unipac Optoelectronics Corporation (hereinafter called "seller").

2.Incoming inspection:

The buyer(customer) shall inspect the modules within twenty calendar days of the delivery date (the "inspection period") at its own cost. The results of the inspection (acceptance or rejection) shall be recorded in writing, and a copy of this writing will be promptly sent to the seller.

The buyer may, under commercially reasonable reject procedures, reject an entire lot in the delivery involved if, within the inspection period, such samples of modules within such lot show an unacceptable number of defects in accordance with this incoming inspection standards, provided however that the buyer must notify the seller in writing of any such rejection promptly, and not later than within three business days of the end of the inspection period.

Should the buyer fail to notify the seller within the inspection period, the buyer's right to reject the modules shall be lapsed and the modules shall be deemed to have been accepted by the buyer.

3.Inspection sampling method:

Unless otherwise agree in writing, the method of incoming inspection shall be based on MIL-STD-105E.

3-1. Lot size: Quantity per shipment lot per model.

3-2. Sampling type: Normal inspection, single sampling.

3-3. Sampling level: Level II.

3-4. Acceptable quality level (AQL):

3-4-1. Major defect: AQL=1.0%.

3-4-2. Minor defect: AQL=2.5%.

4.Inspection instruments:

4-1. A single 20W fluorescent lamp.

4-2. Pattern generator: Philips PM5518 or equivalent model.

4-3. Video board:Unipac video board or equivalent. The output of the signal should comply with the specification provided by Unipac.

4-4. Luminance colorimeter: Topcon BM-7 or equivalent model.

5.Inspection environment conditions:

5-1.Room temperature: 20 to 25 °C.

5-2.Humidity: 65 ± 5% R.H.



5-3.The viewing line should be perpendicular to the surface of the module.

6.Classification of defects:

Defects are classified as the major defects and minor defects according to the degree of defectiveness defined herein.

6-1.Major defects:

A Major defect is a defect that is likely to result in failure, or to reduce the usability of the product for its intended purpose.

6-1-1.Abnormal operation: modules cannot display normally.

6-1-2.Line defect.

6-1-3.There is serious distortion or sharp burr on mechanical housing.

6-1-4.Glass breakage.

6-2.Minor defects:

A minor defect is a defect that is not likely to reduce the usability of the product for its intended purpose.

6-2-1.Dot defect:

A.Inspection conditions:

a.Inspection distance : 35 ± 5 cm

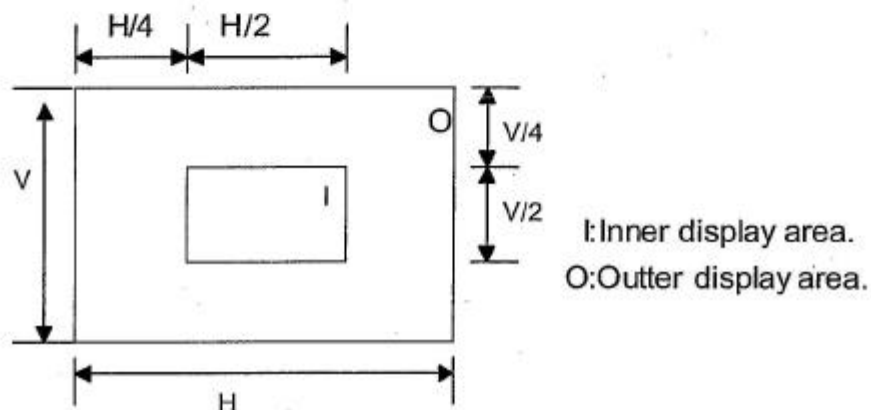
b.Inspection illumination : 100 to 150 Lux

c.Module's panel temperature : $30 \pm 5^\circ\text{C}$

d.Module's panel luminance : 100 nt or more

e.Inspection pattern:Full white,full black,red,green and blue screens

B.The definition of display area:





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C.Criteria:(acceptable)

Item	Zone		Total
	I	O	
Black dot defect	≤ 2	≤ 3	≤ 5
Bright dot defect (5 % ND filter) (red,green,blue,white)	≤ 0	≤ 2	≤ 2
Total	≤ 2	≤ 5	≤ 7

Note 1.Dot defect is defined as the defective area of the dot is larger than 50% of the dot area and it is visible through the 5% N.D.filter.

2.The distance between black dot defects or black and bright dot defects should be more than 5 mm apart.

3.The distance between bright dot defects should be more than 15mm apart.

6-2-2.Scratches,dent and extraneous substances:

A.Inspection conditions:

- a.Luminance : Use a single 20W fluorescent lamp for illumination.
- b.Distance : 35cm or more.

B.Criteria:

Item		Acceptable criteria	
Scratch on the polarizer L : Length(mm) W : Width (mm)	$L \leq 0.5, W \leq 0.5$	Ignore	
	$W \leq 0.1$	Ignore	
	$0.5 < L \leq 10, 0.1 < W \leq 0.5$	$N \leq 4$	
	$10 < L, 0.1 < W$	None	
	$0.5 < W$	None	
Dent on the polarizer D : Average diameter(mm)	$D \leq 0.25$	Ignore	
	$0.25 < D \leq 0.5$	$N \leq 4$	
	$0.5 < D$	None	
Extraneous substances	Black spots	$D \leq 0.25$	Ignore
		$0.25 < D \leq 0.5$	$N \leq 3$
		$0.5 < D$	None
	Naps L : Length(mm) W : Width (mm)	$L \leq 0.5, W \leq 0.5$	Ignore
		$W \leq 0.1$	Ignore
		$0.5 < L \leq 3, 0.1 < W \leq 0.5$	$N \leq 3$
		$3 < L, 0.1 < W$	None
		$0.5 < W$	None

Note:The extraneous substance is defined as it is appears when the module is power on.



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6-2-3. Display non-uniformity:

A.Inspection condition

- a.Inspection distance : 35 ± 5 cm.
- b.Inspection illumination : 100 to 150 Lux.
- c.Module's panel temperature : $30 \pm 5^{\circ}\text{C}$.
- d.Module's panel luminance : 100 nt or more.

B.Criteria:(acceptable)

The non-uniformity should not be visible through 1% N.D. filter.

6-2-4.Afterimage:

After displaying a pattern for 5 seconds then switch to a different Pattern, the previous pattern should disappear within 10 seconds.

7.Inspection judgement:

- 7-1.The judgement of the shipped lot(acceptance or rejection) shall follow the sampling plan of MIL-STD-105E,single sampling,normal inspection, level II .
- 7-2. If the number of defects is equal to or less than the applicable acceptance level,the lot shall be accepted.
- 7-3. If the number of defects is more than the applicable acceptance level,the lot shall be rejected and the buyer should inform the seller of the result of incoming inspection in writing.



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Appendix C: Bill of Material

Part I. BOM of PMLCM140RM-MB

Items	Description	Unit	Quantity	Remark
99PMCAD40R-MB	PMCAD40R for Mitsubish	PC	1	Note 1
70B1008070	BAZEL 99*78.9*7mm SUS304 T=0.3	PC	1	
72C2426B80	PLASTIC CASE 992*792*84mm	PC	1	
74XN025050	SCREW NICKO PLATED P2*5T2-NI 20¢*5.0mm1	PC	4	
76BE150141	ANTI-STATIC BAG15cm*14cm	PC	1	
76BE951151	EPE SHEET L=95 W=115 T=1mm	PC	1	
76PO151601	WARING STICKER 16*15mm	PC	1	
76T7401200	AL. STICKER GCTA-12 40*12mm	PC	1	
86U1500010	GLASS FIBER SILICON TUBE 105°C 600V 1.5¢ WHITE	PC	1	
86U3015500	HEAT SHUMP TUBE 3¢*1.5cm*0.25mm TYP	PC	2	
93OUP040D01	LCD PANEL OUP040D01	PC	1	
94W1011401	RUBBER WIRE UL:3239#24*105±5 mm PINK	PC	1	
94W7090400	RUBBER WIRE UL:1007#24*90±5 mm BLACK	PC	1	

Note 1. Please refer to Part II for the detail.

Part II. BOM of 99PMCAD40R-MB

Items	Description	Unit	Quantity	Remark
30R61802FG	RES 0603 18K ±1% 1/16W	PC	1	R13
30R63482FG	RES 0603 34.8K ±1% 1/16W	PC	1	R210
30T6000JGT	RES 0603 0 ±5%1/16W	PC	12	RV1 RG1 RG2 RG3 RG5 RG6 R14 R55 R130 R174 RVSO
30T6101JGT	RES 0603 100 ±5%1/16W	PC	10	R7 R8 R9 R114 R117 R118 R135 R158 R159 R161
30T6102JGT	RES 0603 1K ±5% 1/16W	PC	7	R10 R123 R151 R216 R308 R212 R213
30T6103JGT	RES 0603 10K ±5% 1/16W	PC	35	R18-R45 R51 R110 R122 R127 R176 R177 R178 R187 R188 R189 RNP
30T6104JGT	RES 0603 100K ±5% 1/16W	PC	1	R169
30T6105JGT	RES 0603 1M ±5% 1/16W	PC	3	R3 R105 R108
30T6106JGT	RES 0603 10M ±5% 1/16W	PC	1	R46
30T6121JGT	RES 0603 120 ±5% 1/16W	PC	1	R209
30T6152JGT	RES 0603 1.5K ±5% 1/16W	PC	2	R49 R57
30T6153JGT	RES 0603 15K ±5% 1/16W	PC	4	R120 R124 R154 R310
30T6183JGT	RES 0603 18K ±5% 1/16W	PC	2	R214 R313
30T6203JGT	RES 0603 20K ±5% 1/16W	PC	2	R42 R43
30T6204JGT	RES 0603 200K ±5% 1/16W	PC	1	R125
30T6223JGT	RES 0603 22K ±5% 1/16W	PC	1	R139
30T6224JGT	RES 0603 220K ±5% 1/16W	PC	1	R203
30T6242JGT	RES 0603 2.4K ±5% 1/16W	PC	2	R113 R160
30T6243JGT	RES 0603 24K ±5% 1/16W	PC	1	R109
30T6273JGT	RES 0603 27K ±5% 1/16W	PC	1	R17

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4F, 32, Sec. 1, Huan Shan RD., Nei Hu, Taipei, Taiwan.
Tel:886-2-2659-0303 FAX: 886-2-2658-0988

30T6302JGT	RES 0603 3K ±5% 1/16W	PC	2	R56 R126
30T6303JGT	RES 0603 30K ±5% 1/16W	PC	1	R303
30T6331JGT	RES 0603 330 ±5% 1/16W	PC	1	R50
30T6333JGT	RES 0603 33K ±5% 1/16W	PC	6	R39 R208 R215 R305 R306 R314
30T6334JGT	RES 0603 330K ±5% 1/16W	PC	1	R16
30T6390JGT	RES 0603 39 ±5% 1/16W	PC	2	R1 R2
30T6393JGT	RES 0603 39K ±5% 1/16W	PC	6	R38 R121 R201 R202 R301 R302
30T6471JGT	RES 0603 470 ±5% 1/16W	PC	2	R206 R207
30T6472JGT	RES 0603 4.7K ±5% 1/16W	PC	3	R103 R115 R116
30T6473JGT	RES 0603 47K ±5% 1/16W	PC	1	R111
30T6474JGT	RES 0603 470K ±5% 1/16W	PC	1	R11
30T6513JGT	RES 0603 51K ±5% 1/16W	PC	1	R309
30T6561JGT	RES 0603 560 ±5% 1/16W	PC	12	R12 R134 R156 R157 R162 R170 R171 R172 R173 R186 R307 RCOL
30T6562JGT	RES 0603 5.6K ±5% 1/16W	PC	3	R6 R47 R48
30T6683JGT	RES 0603 68K ±5% 1/16W	PC	1	R112
30T6750JGT	RES 0603 75 ±5% 1/16W	PC	3	R52 R53 R54
30T6822JGT	RES 0603 8.2K ±5% 1/16W	PC	2	R5 R211
30T6823JGT	RES 0603 82K ±5% 1/16W	PC	1	R106
30VS1031A0	VR 10KV 0.15W 3mm EVM3YSX50B14	PC	3	R107 R129 VCOM
30VS5021A0	VR 5KV 0.15W 3mm EVM3YSX 50B53	PC	1	VR301
30VS5031A0	VR 50KV 0.15W 3mm EVM3YSX50B54	PC	11	GM2 VDCD TIN SBR SBB RGB PIC GM0 COL CNT BRT
33B56A0004	X'FMR BLC13H 56A-0004 DC/AC	PC	1	T201
33EWT32790	XFMR ER11/5 WT3279R1 DC/DC	PC	1	T301
34D2306670	COIL DRUM E5S-23uH±4%-03 DIP	PC	1	L3
35D1515560	INDU CHOKE 150uH 10% SI65-151K	PC	6	L2 L201 L202 L203 L301 L305
35W1503320	IND-CHIP 15uH 5%NL322522T-150J	PC	1	L101
35W151J450	INDUC-CHIP 150uH 10%NLC453232T	PC	1	L103
35W2203320	IND-CHIP 22uH 5%NL322522T-220J	PC	2	L1 L4
35W3303320	IND-CHIP 33uH10%NL322522T-330K	PC	2	L302 L304
37Q358B310	CRYSTAL 3.579545MHZ 30ppm 11.	PC	1	Y1
37Q443B310	CRYSTAL 4.433619MHZ 30ppm 11.8	PC	1	Y2
40A1000160	E/CAP MAT-10uF/16V VS D4*5.4	PC	3	C2 C113 C209
40A1010160	E/CAP SMT100uF/16V VS D6.3*5.4	PC	1	C35
40A4708160	CAP ELEC 47uF 85 16V 6.3	PC	11	C200 C203 C307 C312 C127 C207 C309 C315 C317 C318 C320
40E331A251	Cap-E 330uF 105 25V D8*20 LZ	PC	1	C21
	Cap-MPPS 0.047uF ±10% 100V	PC	1	C208 (Note 1)
40M101JHN6	CM 100pF ±5% 50V NPO 0603	PC	1	C1
40M103KHX6	CM 0.01uF ±10% 50V X7R 0603	PC	16	C6 C22-C32 C37 C39 C40 C308
40M104ZEY6	CM 0.1uF +80%-20% 25V Y5V 0603	PC	17	C4 C13 C14 C15 C19 C20 C34 C105 C107 C108 C114 C119 C128 C310 C313 C316 C319
40M105ZEY8	CM 1uF +80% -20% 25V Y5V 0805	PC	6	C8 C9 C10 C12 C210 C306
40M180JHN6	CM 18pF ±5% 50V NPO 0603	PC	2	C43 C44
40M221KHX6	CM 220pF ±10% 50V X7R 0603	PC	2	C110 C111
40M222KHX6	CM 2200pF ±10% 50V X7R 0603	PC	1	C102
40M225ZCYC	CM 2.2uF +80%-20% 16V Y5V 1206	PC	1	C103

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40M391JHN6	CM 390pF ±5% 50V NPO 0603	PC	1	C112
40M471JHN6	CM 470pF ±5% 50V NPO 0603	PC	5	C205 C206 C301 C302 C305
40M473KCX6	CM 0.047uF ±10% 16V X7R 0603	PC	1	C3
40M474ZCY8	CM 0.47uF +80-20% 16V Y5V 0805	PC	3	C201 C202 C304
40M560JHN6	CM 56pF ±5% 50V NPO 0603	PC	2	C38 C42
40M561JHN6	CM 560pF ±5% 50V NPO 0603	PC	1	C101
40M680JHN6	CM 68pF ±5% 50V NPO 0603	PC	1	C109
40M681JHN6	CM 680pF ±5% 50V NPO 0603	PC	1	C36
40M682KHX6	CM 6800pF ±10% 50V X7R 0603	PC	1	C16
40M820JHN6	CM 82pF ±5% 50V NPO 0603	PC	1	C41
40M821JHN6	CM 820pF ±5% 50V NPO 0603	PC	1	C11
40T106MCB0	Cap-T 10uF ±20%16V 3528 B-Cas	PC	4	C33 C121 C125 C311
40T474MGA0	Cap Tan 0.47uF ±20% 35V 3216	PC	1	C7
40V120KRNH	CV 12pF ±10% 3KV NPO 1808	PC	1	C211
50BB1260P1	Transistor 2SB1260 PNP SOT-89	PC	1	Q201
50CA1037P0	TRANS 2SA1037AKR PNP 3P SMT3	PC	2	Q2 Q101
50DIMZ1AD0	TR IMZ1A NPN+PNP 6PIN SMT6	PC	2	QM201 QM301
50DN4501N0	TR MODULE #XN4501 NPN 6PIN	PC	1	QM1
50PD1898N0	TRANSISTOR 2SD1898T100R-T NPN	PC	3	Q301 Q202 Q203
50SC2412N0	TRANSISTOR 2SC2412K SC-59 NPN	PC	1	Q1
52B160L4K0	DIODE SCHOTTKY RB160L-40 PMDS	PC	2	D201 D304
52SAN212A0	DIODE SWITCHING DAN212K SMD3	PC	4	D302 D303 D3 D301
52VMA335L0	Diode Variable MA335 SOD-323	PC	1	D1
56AUPS15V0	IC ASIC UPS015 48PIN	PC	1	U2
56LC4053P0	IC LOGIC 74HC4053 16PIN	PC	1	U6
56M2107FD0	IC OP AMP NJM2107F 5PIN MTP-5	PC	1	U3
56M3414AK0	IC OP AMP NJM3414AM 8PIN DMP8	PC	1	U5
56PA9743P0	IC PWM BA9743AFV SSOP-B16	PC	1	U201
56V3Y29AV0	IC VIDEO IR3Y29AM 48PIN	PC	1	U1
60F01125N0	FUSE 1A 125V SLO-BLO SMD	PC	1	F201
84F2605000	WAFER 26P P: 0.5mm 08-6210-026	PC	1	JP2
84W15125S0	WAFER 15PIN P:1.25 180° SMD	PC	1	JP1
98PMPCB015	PCB PMPCB016 REV.1.1	PC	1	PCB

Note 1: This part is provided by Mitsubishi