

STANDARD:	<input checked="" type="checkbox"/> IPC-A-600	<input checked="" type="checkbox"/> IPC-6012	<input type="checkbox"/> IPC-6013
MATERIAL:	FR-4 or Equivalent	<input type="checkbox"/> TG 130-140	<input checked="" type="checkbox"/> TG 180
	<input checked="" type="checkbox"/> MULTILAYER	<input type="checkbox"/> 6 LAYERS	<input checked="" type="checkbox"/> CONTROLLED IMPEDANCE
	<input checked="" type="checkbox"/> TH VIA	<input type="checkbox"/> BLIND VIA	<input type="checkbox"/> BURIED VIA

Cu WEIGHT EXTERNAL LAYERS	35um	FINISHED			
Cu WEIGHT INTERNAL LAYERS	35um	FINISHED			
FINISHED OVERALL THICKNESS	1.20	mm	±	0.1	mm
PCB OUTLINE WIDTH	40.8	mm	±	0.1	mm
PCB OUTLINE HEIGHT	40.8	mm	±	0.1	mm
COPPER THEIVING ALLOWED	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO			

FINISH:

<input checked="" type="checkbox"/>	ENIG
<input type="checkbox"/>	IMMERSION SILVER
<input type="checkbox"/>	IMMERSION TIN
<input type="checkbox"/>	SMOBC WITH SELECTIVE GOLD PLATING ON LANDS

INDICATED. 1µm GOLD OVER 5-10 µm NICKEL

SOLDERMASK	IPC-SM-840 Class T
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SOLDERMASK COLOR	GREEN HIGH GLOSS
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SILKSCREEN COLOR WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.

USE ARTWORK SET NO. **ATSAMA5D27-WLSOM1** PCB REV **B**

ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

THIS BOARD CONTAINS CONTROLLED IMPEDANCE TRACKS. TRACK AND GAP SIZES ARE AS FOLLOWS:

TYPE;	Impedance;	Tolerance;	Layer;	Reference;	Width (µm);	Gap (µm);
DIFF;	90ohm;	+/- 10%;	L1;	L2;	125;	200;
DIFF;	100ohm;	+/- 10%;	L1;	L2;	100;	200;
SE;	50ohm;	+/- 10%;	L1;	L2;	125;	
SE;	50ohm;	+/- 10%;	L3;	L2;	125;	
SE;	50ohm;	+/- 10%;	L4;	L5;	125;	
SE;	50ohm;	+/- 10%;	L6;	L5;	125;	

Layer	Name	Material	Thickness	Constant	Gerber
	Top Overlay				GTO
	Top Solder	Solder Resist	0,025mm	4	GTS
1	L1 – Top	Copper	0,035mm		GTL
	Dielectric 1	1 x 3313	0,090mm	4,2	
2	L2 – GND	Copper	0,035mm		G1
	Dielectric 2	FR-4	0,127mm	4,2	
3	L3 – Signal	Copper	0,035mm		G2
	Dielectric 3	2 x 7628 + 2 x 1080	0,500mm	4,2	
4	L4 – Signal	Copper	0,035mm		G3
	Dielectric 4	FR-4	0,127mm	4,2	
5	L5 – PWR	Copper	0,035mm		G4
	Dielectric 5	1 x 3313	0,090mm	4,2	
6	L6 – Bottom	Copper	0,035mm		GBL
	Bottom Solder	Solder Resist	0,025mm	4	GBS
	Bottom Overlay				GBG

Total board thickness:		1.194mm
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REV	ECO	Comments	Date

THIS PCB TO BE MANUFACTURED TO MEET ALL ACCEPTANCE LEVELS FROM CLASS 2:

STANDARD: ☒ IPC-A-600 ☒ IPC-6012 ☐ IPC-6013

MATERIAL: FR-4 or Equivalent ☐ TG 130-140 ☒ TG 180

☒ MULTILAYER ☐ 6 LAYERS ☒ CONTROLLED IMPEDANCE

☒ TH VIA ☐ BLIND VIA ☐ BURIED VIA

Cu WEIGHT EXTERNAL LAYERS ☐ 35um FINISHED

Cu WEIGHT INTERNAL LAYERS ☐ 35um FINISHED

FINISHED OVERALL THICKNESS ☐ 1.20 mm \pm 0.1 mm

PCB OUTLINE WIDTH ☐ 40.8 mm \pm 0.1 mm

PCB OUTLINE HEIGHT ☐ 40.8 mm \pm 0.1 mm

COPPER THEIVING ALLOWED ☐ YES ☒ NO

FINISH: ☒ ENIG

☐ IMMERSION SILVER

☐ IMMERSION TIN

☐ SMOBC WITH SELECTIVE GOLD PLATING ON LANDS

☐ INDICATED. 1um GOLD OVER 5-10 um NICKEL

SOLDERMASK ☐ IPC-SM-840 Class T

SOLDERMASK COLOR ☐ GREEN HIGH GLOSS

SILKSCREEN COLOR ☐ WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.


USE ARTWORK SET NO. ☐ ATSAMA5D27-WLSOM1 PCB REV ☐ B

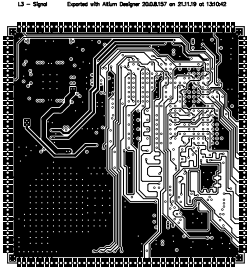
ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

Layer	Name	Material	Thickness	Constant	Gerber
	Top Overlay				GTO
	Top Solder	Solder Resist	0,025mm	4	GTS
1	L1 - Top	Copper	0,035mm		GTL
	Dielectric 1	1 x 3313	0,090mm	4,2	
2	L2 - GND	Copper	0,035mm		G1
	Dielectric 2	FR-4	0,127mm	4,2	
3	L3 - Signal	Copper	0,035mm		G2
	Dielectric 3	2 x 7628 + 2 x 1080	0,500mm	4,2	
4	L4 - Signal	Copper	0,035mm		G3
	Dielectric 4	FR-4	0,127mm	4,2	
5	L5 - PWR	Copper	0,035mm		G4
	Dielectric 5	1 x 3313	0,090mm	4,2	
6	L6 - Bottom	Copper	0,035mm		GBL
	Bottom Solder	Solder Resist	0,025mm	4	GBS
	Bottom Overlay				GBO

Total board thickness: 1,194mm

 MICROCHIP Microchip Technology Inc. 2355 W. Chandler Blvd. Chandler, AZ 85224	TITLE: SAMA5D2 Wireless SOM		PART NUMBER: ATSAMA5D27-WLSOM1	
	ASSEMBLY VARIANT (No. Variations)			
	PCB DESIGNER: MS		GERBER FILE: L3	
	ENGINEER: RC		BOARD NUMBER: WLSOM1	
	PCB FILE NAME: ATSAMA5D27-WLSOM1.PcbDoc		DATE: 21.11.19	
		LAYER NAME: B0A (06412)		REV: B



THIS BOARD CONTAINS CONTROLLED IMPEDANCE TRACKS, TRACK AND GAP SIZES ARE AS FOLLOWS:

TYPE;	Impedance;	Tolerance;	Layer;	Reference;	Width (um);	Gap (um);
DIFF;	90ohm;	+/- 10%;	L1;	L2;	125;	200;
DIFF;	100ohm;	+/- 10%;	L1;	L2;	100;	200;
SE;	50ohm;	+/- 10%;	L1;	L2;	125;	
SE;	50ohm;	+/- 10%;	L3;	L2;	125;	
SE;	50ohm;	+/- 10%;	L4;	L5;	125;	
SE;	50ohm;	+/- 10%;	L6;	L5;	125;	

REV	ECO	Comments	Date

THIS PCB TO BE MANUFACTURED TO MEET ALL ACCEPTANCE LEVELS FROM CLASS 2:

STANDARD: ☒ IPC-A-600 ☒ IPC-6012 ☐ IPC-6013

MATERIAL: FR-4 or Equivalent ☐ TG 130-140 ☒ TG 180

☒ MULTILAYER ☐ 6 LAYERS ☒ CONTROLLED IMPEDANCE

☒ TH VIA ☐ BLIND VIA ☐ BURIED VIA

Cu WEIGHT EXTERNAL LAYERS ☐ 35um FINISHED

Cu WEIGHT INTERNAL LAYERS ☐ 35um FINISHED

FINISHED OVERALL THICKNESS ☐ 1.20 mm \pm 0.1 mm

PCB OUTLINE WIDTH ☐ 40.8 mm \pm 0.1 mm

PCB OUTLINE HEIGHT ☐ 40.8 mm \pm 0.1 mm

COPPER THEIVING ALLOWED ☐ YES ☒ NO

FINISH: ☒ ENIG

☐ IMMERSION SILVER

☐ IMMERSION TIN

☐ SMOBC WITH SELECTIVE GOLD PLATING ON LANDS

☐ INDICATED. 1um GOLD OVER 5-10 um NICKEL

SOLDERMASK ☐ IPC-SM-840 Class T

SOLDERMASK COLOR ☐ GREEN HIGH GLOSS

SILKSCREEN COLOR ☐ WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.


USE ARTWORK SET NO. ☐ ATSAMA5D27-WLSOM1 PCB REV ☐ B

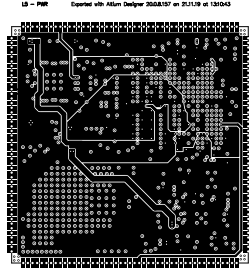
ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

Layer	Name	Material	Thickness	Constant	Gerber
	Top Overlay				GTO
	Top Solder	Solder Resist	0,025mm	4	GTS
1	L1 - Top	Copper	0,035mm		GTL
	Dielectric 1	1 x 3313	0,090mm	4,2	
2	L2 - GND	Copper	0,035mm		G1
	Dielectric 2	FR-4	0,127mm	4,2	
3	L3 - Signal	Copper	0,035mm		G2
	Dielectric 3	2 x 7628 + 2 x 1080	0,500mm	4,2	
4	L4 - Signal	Copper	0,035mm		G3
	Dielectric 4	FR-4	0,127mm	4,2	
5	L5 - PWR	Copper	0,035mm		G4
	Dielectric 5	1 x 3313	0,090mm	4,2	
6	L6 - Bottom	Copper	0,035mm		GBL
	Bottom Solder	Solder Resist	0,025mm	4	GBS
	Bottom Overlay				GBO

Total board thickness: 1,194mm

 MICROCHIP Microchip Technology Inc. 2355 W. Chandler Blvd. Chandler, AZ 85224	TITLE: SAMA5D2 Wireless SOM		PART NUMBER: ATSAMA5D27-WLSOM1	
	ASSEMBLY VARIANT: (No Variations)			
	PCB DESIGNER: MS		GERBER FILE: L5	
	ENGINEER: RC		BOARD NUMBER: WLSOM1	
	PCB FILE NAME: ATSAMA5D27-WLSOM1.PcbDoc		DATE: 21.11.19	
		LAYER NAME: BOARD (W2)		REV: B



THIS BOARD CONTAINS CONTROLLED IMPEDANCE TRACKS, TRACK AND GAP SIZES ARE AS FOLLOWS:

TYPE;	Impedance;	Tolerance;	Layer;	Reference;	Width (um);	Gap (um);
DIFF;	90ohm;	+/- 10%;	L1;	L2;	125;	200;
DIFF;	100ohm;	+/- 10%;	L1;	L2;	100;	200;
SE;	50ohm;	+/- 10%;	L1;	L2;	125;	
SE;	50ohm;	+/- 10%;	L3;	L2;	125;	
SE;	50ohm;	+/- 10%;	L4;	L5;	125;	
SE;	50ohm;	+/- 10%;	L6;	L5;	125;	

REV	ECO	Comments	Date

THIS PCB TO BE MANUFACTURED TO MEET ALL ACCEPTANCE LEVELS FROM CLASS 2:

STANDARD: ☒ IPC-A-600 ☒ IPC-6012 ☐ IPC-6013

MATERIAL: FR-4 or Equivalent ☐ TG 130-140 ☒ TG 180

☒ MULTILAYER ☒ 6 LAYERS ☒ CONTROLLED IMPEDANCE

☒ TH VIA ☐ BLIND VIA ☐ BURIED VIA

Cu WEIGHT EXTERNAL LAYERS ☐ 35um FINISHED

Cu WEIGHT INTERNAL LAYERS ☐ 35um FINISHED

FINISHED OVERALL THICKNESS ☐ 1.20 mm \pm 0.1 mm

PCB OUTLINE WIDTH ☐ 40.8 mm \pm 0.1 mm

PCB OUTLINE HEIGHT ☐ 40.8 mm \pm 0.1 mm

COPPER THEIVING ALLOWED ☐ YES ☒ NO

FINISH: ☒ ENIG

☐ IMMERSION SILVER

☐ IMMERSION TIN

☐ SMOBC WITH SELECTIVE GOLD PLATING ON LANDS

☐ INDICATED. 1um GOLD OVER 5-10 um NICKEL

SOLDERMASK ☐ IPC-SM-840 Class T

SOLDERMASK COLOR ☐ GREEN HIGH GLOSS

SILKSCREEN COLOR ☐ WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.



USE ARTWORK SET NO. ☐ ATSAMA5D27-WLSOM1 PCB REV ☐ B

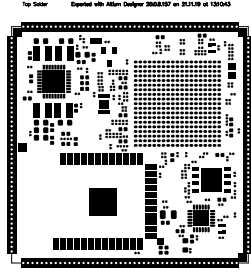
ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

Layer	Name	Material	Thickness	Constant	Gerber
	Top Overlay				GTO
	Top Solder	Solder Resist	0,025mm	4	GTS
1	L1 - Top	Copper	0,035mm		GTL
	Dielectric 1	1 x 3313	0,090mm	4,2	
2	L2 - GND	Copper	0,035mm		G1
	Dielectric 2	FR-4	0,127mm	4,2	
3	L3 - Signal	Copper	0,035mm		G2
	Dielectric 3	2 x 7628 + 2 x 1080	0,500mm	4,2	
4	L4 - Signal	Copper	0,035mm		G3
	Dielectric 4	FR-4	0,127mm	4,2	
5	L5 - PWR	Copper	0,035mm		G4
	Dielectric 5	1 x 3313	0,090mm	4,2	
6	L6 - Bottom	Copper	0,035mm		GBL
	Bottom Solder	Solder Resist	0,025mm	4	GBS
	Bottom Overlay				GBO

Total board thickness: 1,194mm

 MICROCHIP Microchip Technology Inc. 2355 W. Chandler Blvd. Chandler, AZ 85224	TITLE: SAMA5D2 Wireless SOM		PART NUMBER: ATSAMA5D27-WLSOM1	
	ASSEMBLY VARIANT: (No Variations)			
	PCB DESIGNER: MS	GERBER FILE: Top Solder Mask		
	ENGINEER: RC	BOARD NUMBER: WLSOM1		DATE: 21.11.19
	PCB FILE NAME: ATSAMA5D27-WLSOM1.PcbDoc		LAYER NAME: BOARD TOP (M2)	REV: B 



THIS BOARD CONTAINS CONTROLLED IMPEDANCE TRACKS, TRACK AND GAP SIZES ARE AS FOLLOWS:

TYPE;	Impedance;	Tolerance;	Layer;	Reference;	Width (um);	Gap (um);
DIFF;	90ohm;	+/- 10%;	L1;	L2;	125;	200;
DIFF;	100ohm;	+/- 10%;	L1;	L2;	100;	200;
SE;	50ohm;	+/- 10%;	L1;	L2;	125;	
SE;	50ohm;	+/- 10%;	L3;	L2;	125;	
SE;	50ohm;	+/- 10%;	L4;	L5;	125;	
SE;	50ohm;	+/- 10%;	L6;	L5;	125;	

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REV

ECO

Comments

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THIS PCB TO BE MANUFACTURED TO MEET ALL ACCEPTANCE LEVELS FROM CLASS 2:

STANDARD: ☒ IPC-A-600 ☒ IPC-6012 ☐ IPC-6013

MATERIAL: FR-4 or Equivalent ☐ TG 130-140 ☒ TG 180

☒ MULTILAYER ☒ 6 LAYERS ☒ CONTROLLED IMPEDANCE

☒ TH VIA ☐ BLIND VIA ☐ BURIED VIA

Cu WEIGHT EXTERNAL LAYERS ☒ 35um FINISHED

Cu WEIGHT INTERNAL LAYERS ☒ 35um FINISHED

FINISHED OVERALL THICKNESS ☒ 1.20 mm ± ☒ 0.1 mm

PCB OUTLINE WIDTH ☒ 40.8 mm ± ☒ 0.1 mm

PCB OUTLINE HEIGHT ☒ 40.8 mm ± ☒ 0.1 mm

COPPER THEIVING ALLOWED ☐ YES ☒ NO

FINISH: ☒ ENIG

☐ IMMERSION SILVER

☐ IMMERSION TIN

☐ SMOBC WITH SELECTIVE GOLD PLATING ON LANDS

☐ INDICATED. 1um GOLD OVER 5-10 um NICKEL

SOLDERMASK ☒ IPC-SM-840 Class T

SOLDERMASK COLOR ☒ GREEN HIGH GLOSS

SILKSCREEN COLOR ☒ WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.

USE ARTWORK SET NO. ☒ ATSAMA5D27-WLSOM1 PCB REV ☒ B

ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

Layer	Name	Material	Thickness	Constant	Gerber
	Top Overlay				GTO
	Top Solder	Solder Resist	0,025mm	4	GTS
1	L1 - Top	Copper	0,035mm		GTL
	Dielectric 1	1 x 3313	0,090mm	4,2	
2	L2 - GND	Copper	0,035mm		G1
	Dielectric 2	FR-4	0,127mm	4,2	
3	L3 - Signal	Copper	0,035mm		G2
	Dielectric 3	2 x 7628 + 2 x 1080	0,500mm	4,2	
4	L4 - Signal	Copper	0,035mm		G3
	Dielectric 4	FR-4	0,127mm	4,2	
5	L5 - PWR	Copper	0,035mm		G4
	Dielectric 5	1 x 3313	0,090mm	4,2	
6	L6 - Bottom	Copper	0,035mm		GBL
	Bottom Solder	Solder Resist	0,025mm	4	GBS
	Bottom Overlay				GBO

Total board thickness: 1,194mm

THIS BOARD CONTAINS CONTROLLED IMPEDANCE TRACKS, TRACK AND GAP SIZES ARE AS FOLLOWS:

TYPE;	Impedance;	Tolerance;	Layer;	Reference;	Width (um);	Gap (um);
DIFF;	90ohm;	+/- 10%;	L1;	L2;	125;	200;
DIFF;	100ohm;	+/- 10%;	L1;	L2;	100;	200;
SE;	50ohm;	+/- 10%;	L1;	L2;	125;	
SE;	50ohm;	+/- 10%;	L3;	L2;	125;	
SE;	50ohm;	+/- 10%;	L4;	L5;	125;	
SE;	50ohm;	+/- 10%;	L6;	L5;	125;	

Bottom Paste Exported with Altium Designer 2020.0.127 on 2021.08 at 13:04:03

TITLE: SAMA5D2 Wireless SOM

ASSEMBLY VARIANT: No Variations

PCB DESIGNER: MS

ENGINEER: RC

PCB FILE NAME: ATSAMA5D27-WLSOM1.PcbDoc

GERBER FILE: Bottom Solder Paste

BOARD NUMBER: WLSOM1

LAYER NAME: Bottom Paste

DATE: 21.11.19

REV: B

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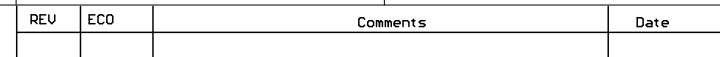
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STANDARD: ☒ IPC-A-600 ☒ IPC-6012 ☐ IPC-6013

☒ MULTILAYER ☐ 6 LAYERS ☒ CONTROLLED IMPEDANCE

☒ TH VIA ☐ BLIND VIA ☐ BURIED VIA

☒ 35um CU WEIGHT EXTERNAL LAYERS ☐ 35um FINISHED

C2 WEIGHT EXTERNAL LAYERS	500µm	FINISHED
C4 WEIGHT INTERNAL LAYERS	35µm	FINISHED

CU WEIGHT INTERNAL LAYERS	5500	FINISHED
FINISHED OVERALL THICKNESS	1.22	mm + .01 mm

FINISHED OVERALL THICKNESS	1.20	mm	±	0.1	mm

PCB OUTLINE WIDTH	40.8	mm	±	0.1	mm
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PCB OUTLINE HEIGHT	40.8	mm	±	0.1	mm
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COPPER THEIVING ALLOWED ☐ YES ☒ NO

FINISH: ☒ ENIG

☐ IMMERSION SILVER

☐ IMMERSION SILVER

☐ IMMERSION TIN
CHIPS WITH SELECTIVE GOLD PLATING ON LANDS

☐ SMOBC WITH SELECTIVE GOLD PLATING ON LANDS
INDICATED. 1 μ m GOLD OVER 5–10 μ m NICKEL

— INDICATED: TUFF GOLD OVER 5-10 G/T NICKEL

SOLDERMASK IPC-SM-840 Class T

SOLDERMASK COLOR	GREEN HIGH GLOSS
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SOLDERMASK COLOR	GREEN HIGH GLOSS
------------------	------------------

SILKSCREEN COLOR WHITE

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NC DRILL DATA PROVIDED.

ALL HOLES TO BE LOCATED BY THE COORDINATES FROM THE NO DRILL DATA PROVIDED.

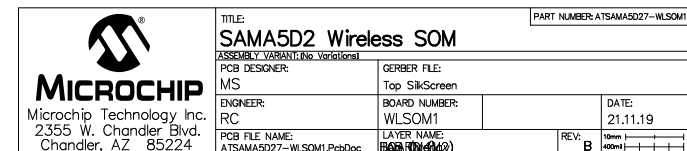
USE ARTWORK SET NO. **ATSAMA5D27-WLSOM1** PCB REV **B**

ALL UL LOGO, MANUFACTURER'S ID, AND DATE CODES SHALL BE PLACED

ON THE BOTTOM SIDE UNLESS OTHERWISE INDICATED.

ANY ALTERNATIVES TO THE ABOVE SPECIFICATIONS MUST FIRST BE APPROVED.

Total board thickness: 1,194mm



5 6

