



AKM MEADVILLE

安捷利美维

# Technology Development

**XMT** 📍 Xiamen  
China IC  
Substrates  
SLP  
Modules  
R&D



**GME** 📍 Guangzhou  
China SLP  
HDI &  
Rigid-Flex



**NS** 📍 Guangzhou  
China Flex &  
Assembly  
CCS  
R&D



**SMST** 📍 Shanghai  
China IC  
Substrates  
R&D



**SME** 📍 Shanghai  
China HDI &  
Rigid-Flex



**SZ** 📍 Suzhou  
China IC  
Substrates  
Flex &  
Assembly



**FZ** 📍 Fuzhou  
China CCS

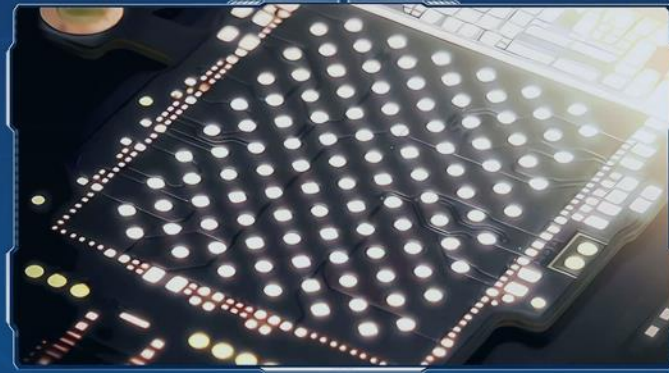


**TH** 📍 Ayutthaya  
Thailand Flex &  
Assembly  
HDI

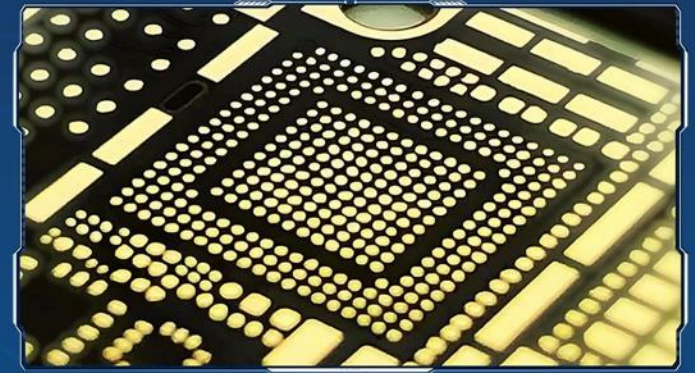




**Substrate**  
FCBGA / FCCSP / SiP



**Substrate-Like-PCB**  
Up to 16L Anylayer HDI



**Advanced & Anylayer HDI**  
High reliability solutions with high frequency / low loss options



**Rigid-Flex & Flex**  
High frequency / Low loss options / Asymmetrical ply up structures



**SMT & Assembly**  
TSOP / QFP / QFN / LGA / BGA assembly



**Power Battery Module (CCS)**  
Power Battery Module & CCS (Cell Connection System)

Low volume  
Production & sample



XMT Factory: Plant capping



XMT Factory:  
Equipment installation  
and commissioning



Mass Production  
for ABF,  
Sample build  
for TGV



2021

2022

2022.5

2023.3

2023.8

2023.12

2024.7

2024.12

Plan to  
establish a pilot  
production line

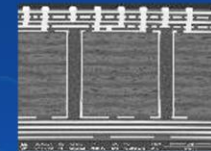
XMT Factory: Land purchase and  
key equipment procurement



XMT Factory: Electromechanical  
installation completed



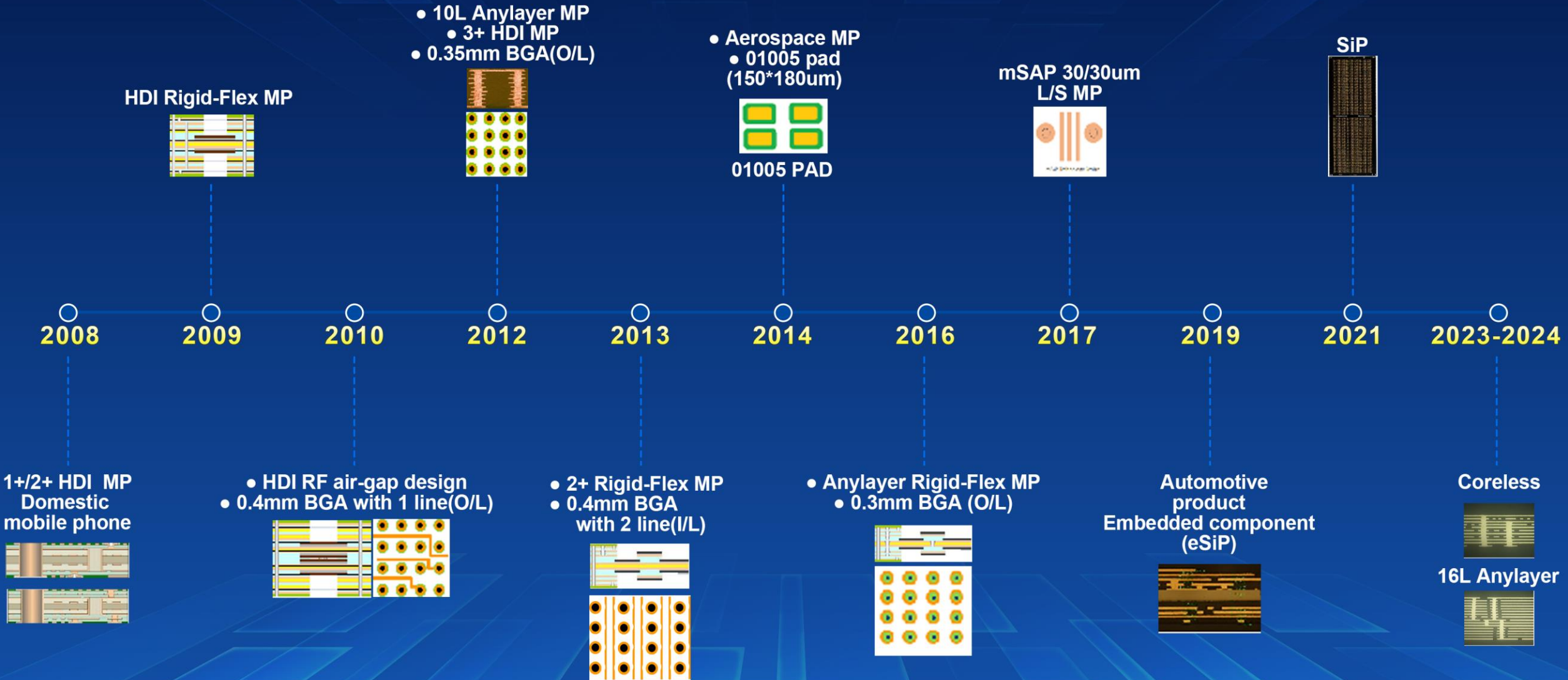
Start sample qualification



Over 20 years of solid Flip-Chip CSP substrate experience supporting FC-BGA development in Q3 2022,  
Large body size, fine pitch and high layer count



# Technology Milestone | Substrate Like PCB (SLP)



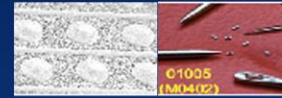
Cu filled 2+ HDI Production



Rigid-flex Production



0.35mm pitch BGA, 01005 component



X-via for thermal conductive technology



2001

2006

2007

2008

2010

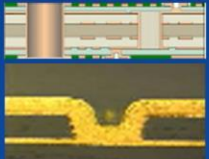
2014

2018

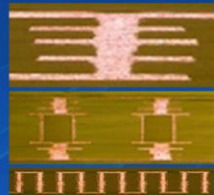
2020

2022

1+ HDI MP



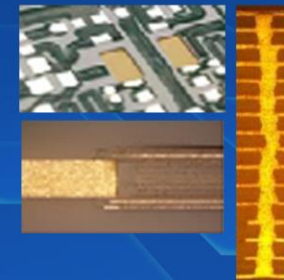
3+ & 4+ HDI Production  
Any layer technology ready



Distributive buried resistance / capacitance production



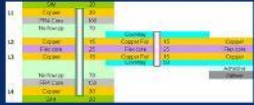
16L any layer for 5G application  
RF module with Cavity, Coin



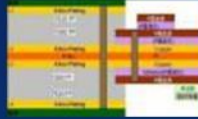
Thick board & high AR plating  
Rigid Flex QTA



Smartphone Touch Module (4L)



Smartphone Battery (4L)



Headset jack /Speaker/ USB interface (7L)



12L 3+ HDI ADAS



2008

2010

2012

2014

2016

2018

2020

2022

2024

MP3 MB  
6L 2+ HDI



Camera module  
4L 1+ HDI



Wristband 6L  
1+HDI



6~12L any-layer  
Wearable product



High speed  
rigid-flex  
MPI & LCP  
application





FPC with Fine line of 75/75µm



2L FPC with 1.2 oz Cu for Wireless Charging



3L R-F + PI for On-board recharging



4L - foldable phone Dynamic Bending



1994

2006

2013

2015

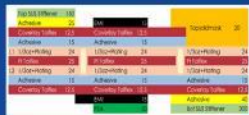
2017

2019

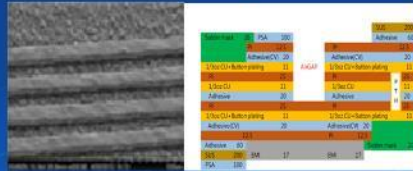
2022

2023

Earliest Company for S/S & D/S FPC in China



FPC with Fine line of 50/50µm



2L FPC with large panel size for NED



3L + LCP 3L+ MPI High Frequency / High Speed



Item		2024	2025	2026
Structure		9+N+9	10+N+10	11+N+11
Max. Board Size (mm)		70*70	110*110	
Min. L / S (um)	Subtractive - Core Layers	40/40 (Mech. core) 30/40 (LTH core)	40/40 (Mech. core) 30/30 (LTH core)	
	Build Up Layers	9/12	8/8	
Min. Microvia/Pad (um)		50/80	40/70	40/60
Core Thickness (um)		200~1600	150~1600	
Min. Dielectric Thickness (um)		25	20	15
Min. Bump Pitch (um)		110	100	90
Solder Mask Registration (um)		12.5	10	
Surface Treatment		ENEPIG, IT, OSP, Thin Ni ENEPIG		
SOP + Coining Technology		Yes		
Micro Cu Pillar/Bump		Path Finding	Boundary Detection	Characterized Developing
TGV		Sample	LVM	HVM

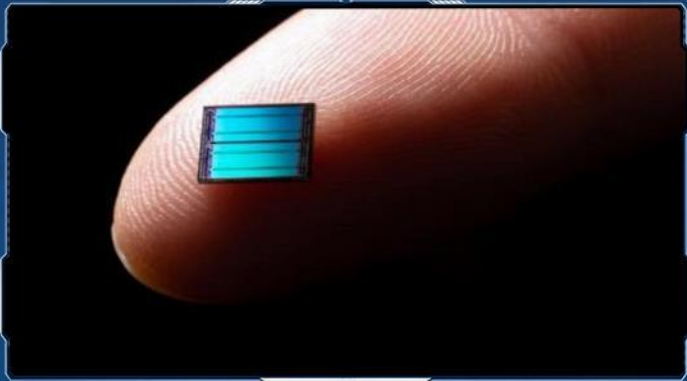
Item		2024	2025	2026
Structure		12L ELIC	14L ELIC	
Min. L / S (um)	Subtractive	20/30	20/25	
	mSAP	12/18	12/16	
	ETS	15/15	12/12	10/10
Min. Microvia / Pad (um)	Core Layer	60/110	55/105	50/60
	Inner Layer	55/95	50/90	
	Outer Layer	55/85	50/80	
Min. Dielectric Thickness (um)		18	18(RCC 15)	
Min. Core Thickness (um)		30		
Min. FC Pitch (um)		130	110	
Min. Bonding Finger Pitch (um)		90 (Subtractive) 75 (mSAP) 65 (ETS)	85 (Subtractive) 75 (mSAP) 60 (ETS)	
Solder Mask Registration (um)		+/-12.5		
Surface Treatment		OSP, Soft Gold, ENEPIG, ENIG, Thin Ni ENEPIG		
SOP + Coining Technology		Yes		

Item	2024	2025	2026
Stackup	16L Anylayer		
Min. Board Thickness	120um(Coreless)	110um(Coreless)	
Min. Core Thickness (um)	40, 30um(Coreless)	35, 20um(Coreless)	35, 18um(Coreless)
Min. Dielectric Thickness (um)	20		18
Min. L/S (um) - Subtractive	35/35 @15um Cu 50/50@25um Cu	30/30 @15um Cu 50/50@25um Cu	
Min. L/S – mSAP	25/25	18/22	
Min. Microvia / Pad (um)	60/105		60/95
LTH(X-Via)Diameter / Core Thickness	60 / Thickness≤63um 90 / Thickness≤152um		60 / Thickness≤63um 100 / Thickness≤177um
Min. Flip Chip Pitch	130	127	117
Min. Bonding Finger Pitch (um)	80 (mSAP, ENEPIG)		
Min. Soldermask Opening (um)	70	60	55
Solder Mask Registration (um)	15	12.5	
Surface Treatment	ENIG, OSP, ENEPIG		

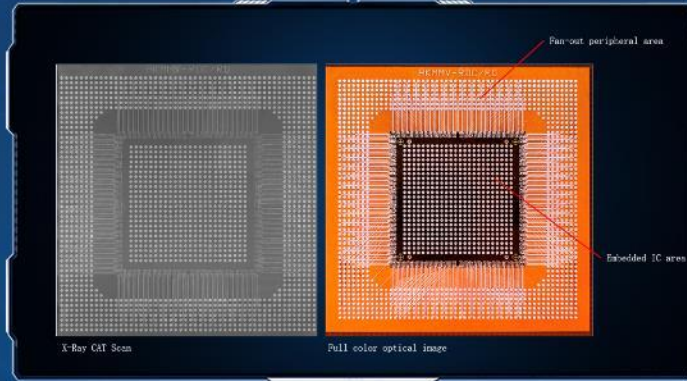
Item	2024	2025	2026
Structure	16L ELIC 22L 7+ HDI	18L ELIC 22L 7+ HDI	20L ELIC 22L 7+ HDI
Min. Board Thickness	0.25mm(6L ELIC)	0.23mm(6L ELIC)	
	0.42mm(10L ELIC)	0.40mm(10L ELIC)	
Min. L / S (um)	35/35 @15um Cu 50/50@25um Cu	30/30 @15um Cu 50/50@25um Cu	
Min. Microvia / Pad (um)	70/130	65/125	60/115
Min. PTH Via / Pad (um)	150/350 (>2L) 150/300 (2L)	150/300	
Min. Core Thickness (um)	40		
Min. Dielectric Thickness (um)	28	25	
Min. BGA Pitch (um)	325	300	
Solder Mask Registration (um)	20		15
Surface Treatment	OSP, ENEPIG, ENIG , I-Ag, I-Tin (outsource), Gold Finger		

Item	2024	2025	2026
Structure	14L ELIC 24L with 6F	16L ELIC 24L with 6F	
Min. L/S (um) - Subtractive   Non-Plated Layer	40/40	35/40	35/35
Min. L/S (um) - Subtractive   Plated Layer	50/50	40/50	40/40
Min. L/S (um) - mSAP	30/30	25/25	20/20
Min. Microvia / Pad (um)	75/200	75/175	
Min. PTH Via / Pad (um)	100/300		
Min. Dielectric Thickness (um)	30 (Rigid); 12.5(Flex)		
Min. FCCL Core Thickness (um)	12		
Min. BGA Pitch (mm)	0.35		
Min. Coverlay Thickness (um)	12.5/15	9/15	7.5/15
Surface Treatment	OSP, ENEPIG, Standard or Soft Ni ENIG, I-Ag, Gold Finger		

Item		2024	2025	2026
Layer Count	FPC	8	10	12
	LCP FPC	6	8	12
	FPC With BLV	6L 2+	6L ELIC	8L ELIC
Min. L/S (um)	Non-Plated Layer (Cu 12um)	40/40	30/30	25/25
	Plated Layer (Cu 18um)	45/45	35/35	30/30
Overall Board Thickness (mm)		0.05~0.8	0.036~0.8	
Min. Laser Hole / Pad (um)		75/225 (Panel Plating) 75/275 (Button Plating)	50/200 (Panel Plating) 50/250 (Button Plating)	
Min. FCCL Thickness (um)		12.5	7.5	
Laser Dielectric Thickness (um)	Cu+PI+AD (Multi-layer)	25 ~ 100	25 ~ 125	
Min. Coverlay Thickness (um)		12.5/15	9/15	7.5/15
Aluminum - Base FPC		Yes (1L)		
Surface Treatment		OSP, ENEPIG, Standard or Soft Ni ENIG, Soft gold, Hard Gold, flash Gold, Electrodeposited Tin		



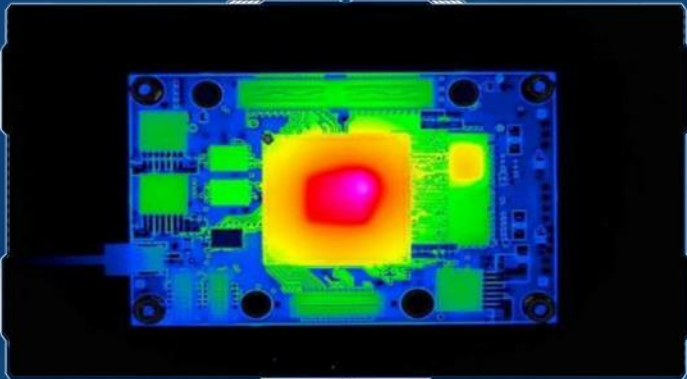
Miniaturization



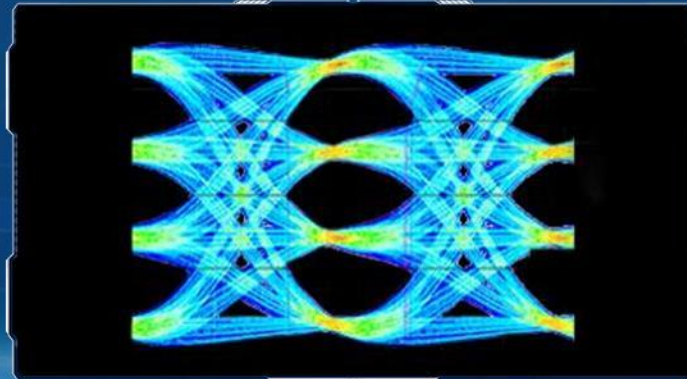
Advanced Packaging



New Energy Management



Thermal Management



High Speed and Signal Integrity



Flex Interconnects





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# Product Show

### Product Information

Product Application	CPU
Stack-up	9+2+9
Board Thickness	1.65mm
Material	CORE: Glass Build-up: Ajinomoto GL102
Min.Line/Space	12/17um@15um Cu
Min.Via/Pad	50/85um
Surface Treatment	ENEPIG+SOP
Body Size	82.5x82.5mm
Speciaty	TGV

### Cross Section



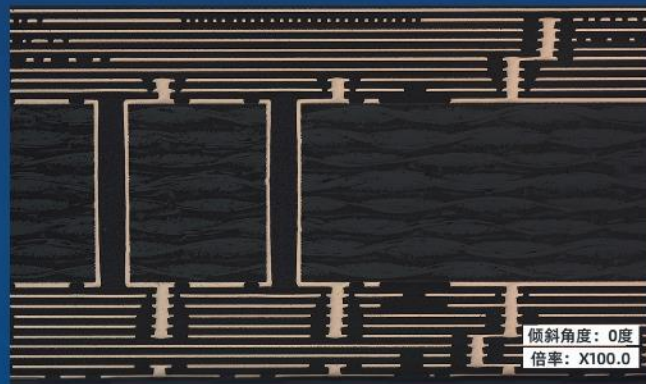
### Stackup

Layer Properties	Material	struc Thickness (um)	Structure
Top Soldermask	Taiyo SR7300	21	
L1 Plating		15	
Prepreg	Ajinomoto GL102	30	
L2 Plating		15	
Prepreg	Ajinomoto GL102	30	
L3 Plating		15	
Prepreg	Ajinomoto GL102	30	
L4 Plating		15	
Prepreg	Ajinomoto GL102	30	
L5 Plating		15	
Prepreg	Ajinomoto GL102	30	
L6 Plating		15	
Prepreg	Ajinomoto GL102	30	
L7 Plating		15	
Prepreg	Ajinomoto GL102	30	
L8 Plating		15	
Prepreg	Ajinomoto GL102	30	
L9 Plating		15	
Prepreg	Ajinomoto GL102	30	
L10 Plating		22	
Core	Glass Core	700	
L11 Plating		22	
Prepreg	Ajinomoto GL102	30	
L12 Plating		15	
Prepreg	Ajinomoto GL102	30	
L13 Plating		15	
Prepreg	Ajinomoto GL102	30	
L14 Plating		15	
Prepreg	Ajinomoto GL102	30	
L15 Plating		15	
Prepreg	Ajinomoto GL102	30	
L16 Plating		15	
Prepreg	Ajinomoto GL102	30	
L17 Plating		15	
Prepreg	Ajinomoto GL102	30	
L18 Plating		15	
Prepreg	Ajinomoto GL102	30	
L19 Plating		15	
Prepreg	Ajinomoto GL102	30	
L20 Plating		15	
Bottom Soldermask	Taiyo SR7300	21	

## Product Information

Product Application	CPU
Stack-up	9+2+9
Board Thickness	1.76mm
Material	CORE:Resonac E-705G Build-up: Ajinomoto GZ41
Min.Line/Space	8/8um@15um Cu
Min.Via/Pad	60/110um
Surface Treatment	ENEPIG
Body Size	52.5x52.5mm
Speciaty	SAP, 8/8 Line/Space

## Cross Section



## Stackup

Layer Properties	Material	Thickness (um)	Structure
Top Soldermask	Taiyo SR7300	21	
L1	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L2	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L3	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L4	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L5	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L6	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L7	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L8	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L9	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L10	0.33oz+Plating	20	▼
	Core	Resonac E-705G	
L11	0.33oz+Plating	20	▼
	Prepreg	Ajinomoto GZ41	
L12	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L13	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L14	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L15	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L16	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L17	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L18	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L19	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
L20	Plating	15	▼
	Prepreg	Ajinomoto GZ41	
Bottom Soldermask	Taiyo SR7300	21	

Product Information

Product Application	RF Module
Stack-up	6L Anylayer
Board Thickness	0.2mm
Material	Doosan DS-7409HGB(JE)
Line Width / Spacing	12/18um
Min. Via / Pad	60um Laser Blind Via&X-Via
Min. Bump Pitch	200um
Surface Finish	ENIG+SOP
Speciaty	mSAP, Ultra-thin Structure, SOP

Cross Section



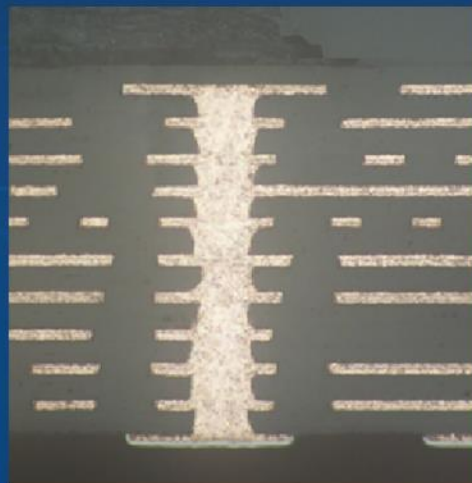
Stackup

Layer	Layer Properties	Material	Thickness (um)	Structure
	Top Soldermask	Taiyo PSR4000 AUS320	15	
L1	0.33oz+Plating Prepreg	7409HG(JE)	9 20	
L2	3um+Plating Prepreg	7409HG(JE)	9 20	
L3	0.33oz+Plating Core	Doosan 7409HGB(JE)	9 35	
L4	0.33oz+Plating Prepreg	7409HG(JE)	9 20	
L5	3um+Plating Prepreg	7409HG(JE)	9 20	
L6	0.33oz+Plating Bottom Soldermask		9 15	

### Product Information

Product Application	Smart Watch
Stack-up	11L Anylayer (Coreless)
Material	Resonac MCL-E-770G(R)
Min.Line/Space - Inner Layer	40/40um
Min.Line/Space - Outer Layer	40/40um
Laser Via Size/pad Size	70/130um 59/110um (L11-10)
Board Thickness (S/M to S/M)	0.375+/-0.025mm
Solder Mask Type	Taiyo PSR-4000 D60ME (Roller Coating)
Surface Treatment	ENIG
Others	SR Registration 15um

### Cross Section



### Stackup

Layer	Layer Properties	Material	Thickness (um)	Structure
	Top Soldermask	PSR4000 D6	15	
L1	0.33oz+Plating Prepreg	E-770G	22	
L2	0.33oz+Plating Prepreg	E-770G	22	
L3	0.33oz+Plating Prepreg	E-770G	22	
L4	0.33oz+Plating Prepreg	E-770G	22	
L5	0.5oz+Plating Prepreg	E-770G	26	
L6	0.5oz+Plating Prepreg	E-770G	22	
L7	1oz+Plating Prepreg	E-770G	22	
L8	1oz+Plating Prepreg	E-770G	22	
L9	0.5oz+Plating Prepreg	E-770G	22	
L10	0.5oz+Plating Prepreg	E-770G	22	
L11	0.33oz+Plating		11	
	Bottom Soldermask	PSR4000 D6	15	

### Product Information

Product Application	TWS Earbuds with eSiP
Stack-up	10L Anylayer (mSAP: L3/8,L4/7)
Material	EMC EM-526 + Build-up Film
Min.Line/Space - Inner Layer	30/30um @ 11um Cu
Min.Line/Space - Outer Layer	40/44um @ 13um Cu
Laser Via Size/pad Size	50/105um
Board Thickness (S/M to S/M)	0.34mm
Solder Mask Type	PSR-800 ME1-Z (Black)
Surface Treatment	ENIG
Others	Embedded PMIC Die

### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	12	
L1	0.33oz+Plating	13	Build-up Film
	Build-up Film	16	
L2	0.086oz+Plating	11	Build-up Film
	Build-up Film	16	
L3	0.086oz+Plating	11	Build-up Film
	Build-up Film	16	
L4	0.33oz+Plating	11	Build-up Film
	Build-up Film	18	
L5	0.33oz+Plating	15	Embedded IC
	Core	64	
L6	0.33oz+Plating	15	Build-up Film
	Build-up Film	18	
L7	0.33oz+Plating	11	Build-up Film
	Build-up Film	16	
L8	0.086oz+Plating	11	Build-up Film
	Build-up Film	16	
L9	0.086oz+Plating	11	Build-up Film
	Build-up Film	16	
L10	0.33oz+Plating	13	
	Bottom Soldermask	12	

### Cross Section



Product Information

Cross Section

Stackup

<b>Product Application</b>	WiFi Module, SiP
<b>Stack - up</b>	8L Anylayer (mSAP except core layer)
<b>Material</b>	Showa Denko E770-GR 41um core + 1010 prepreg
<b>Min. Line / Space - Inner Layer</b>	30/30um @ 12um Cu
<b>Min. Line / Space - Outer Layer</b>	30um/NA @ 12um Cu
<b>Laser Via Size / Pad Size</b>	60um/150um
<b>Board Thickness (S / M to S / M)</b>	0.298mm
<b>Solder Mask Type</b>	PSR - 4000 AUS308 (Green)
<b>Surface Treatment</b>	ENIG (Low P)



Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.086oz+Plating Prepreg	12 23	
L2	0.086oz+Plating Prepreg	12 22	
L3	0.086oz+Plating Prepreg	12 23	
L4	0.33oz+Plating Core	12 41	
L5	0.33oz+Plating Prepreg	12 22	
L6	0.086oz+Plating Prepreg	12 24	
L7	0.086oz+Plating Prepreg	12 22	
L8	0.086oz+Plating	12	
	Bottom Soldermask	15	

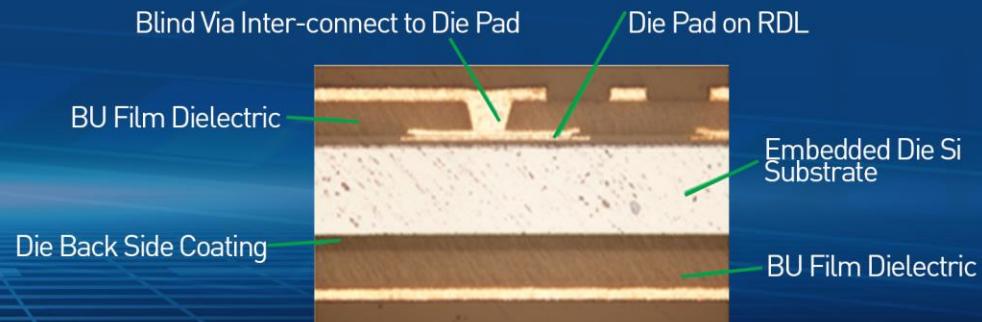
### Product Information

Product Application	TWS Earbuds with eSiP
Stack-up	3+2+3 8L HDI
Material	EMC EM-390 163um core + 1027 prepreg +Build-up Film
Min. Line / Space - Inner Layer	50/50um @ 18um Cu
Min. Line / Space - Outer Layer	100/120um @ 24um Cu
Laser Via Size / Pad Size	75/225um
Board Thickness (S/M to S/M)	0.625mm
Solder Mask Type	PSR-4000 GEC50(Green)
Surface Treatment	ENIG
Others	Embedded Flash NAND Die

### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.33oz+Plating	24	
	Prepreg	40	
L2	0.33oz+Plating	18	
	Prepreg	39	
L3	0.33oz+Plating	18	
	Build-up Film	41	
L4	0.33oz+Plating	21	
	Core	163	Embedded IC
L5	0.33oz+Plating	21	
	Build-up Film	49	
L6	0.33oz+Plating	18	
	Prepreg	40	
L7	0.33oz+Plating	18	
	Prepreg	42	
L8	0.33oz+Plating	24	
	Top Soldermask	15	

### Cross Section

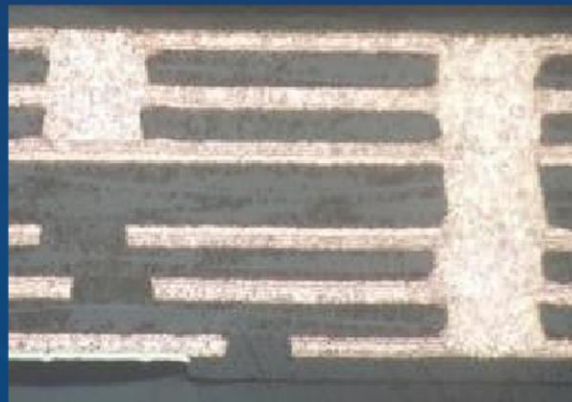




### Product Information

<b>Product Application</b>	TWS Earbuds
<b>Stack-up</b>	6L Anylayer (SiP)
<b>Material</b>	MGC HL382NS 40um core + 1017PP
<b>Min. Line / Space - Inner Layer</b>	40/40um @ 16um Cu
<b>Min. Line / Space - Outer Layer</b>	40/55um @ 15um Cu
<b>Laser Via Size/Pad Size</b>	80um/160um
<b>Board Thickness (S / M to S / M)</b>	0.25mm
<b>Solder Mask Type</b>	PSR-800 AUS SR1 (Green)
<b>Surface Treatment</b>	ENEPIG

### Cross Section



### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	12	
L1	0.33oz+Plating	15	
	Prepreg	25	
L2	0.33oz+Plating	15	
	Prepreg	24	
L3	0.33oz+Plating	16	
	Core	41	
L4	0.33oz+Plating	16	
	Prepreg	24	
L5	0.33oz+Plating	15	
	Prepreg	25	
L6	0.33oz+Plating	15	
	Top Soldermask	12	

Product Information

Cross Section

Stackup

<b>Product Application</b>	WiFi Module, SiP
<b>Stack-up</b>	8L Anylayer (mSAP except core layer)
<b>Material</b>	Showa Denko E770-GR 41um core + 1010 prepreg
<b>Min. Line / Space - Inner Layer</b>	30/30um @ 12um Cu
<b>Min. Line / Space - Outer Layer</b>	30um/NA @ 12um Cu
<b>Laser Via Size / Pad Size</b>	60um/150um
<b>Board Thickness (S / M to S / M)</b>	0.298mm
<b>Solder Mask Type</b>	PSR - 4000 AUS308 (Green)
<b>Surface Treatment</b>	ENIG (Low P)



Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.086oz+Plating Prepreg	12 23	
L2	0.086oz+Plating Prepreg	12 22	
L3	0.086oz+Plating Prepreg	12 23	
L4	0.33oz+Plating Core	12 41	
L5	0.33oz+Plating Prepreg	12 22	
L6	0.086oz+Plating Prepreg	12 24	
L7	0.086oz+Plating Prepreg	12 22	
L8	0.086oz+Plating	12	
	Bottom Soldermask	15	

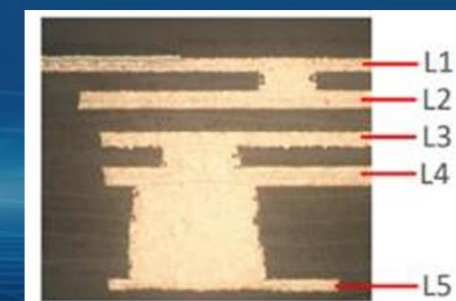
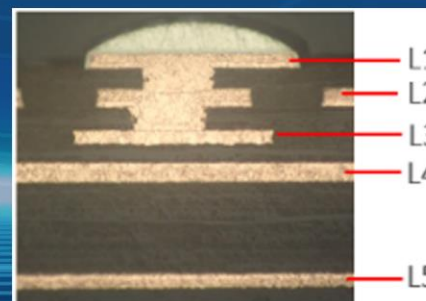
### Product Information

<b>Product Application</b>	Microphone , SiP
<b>Stack-up</b>	5L Any layer (Coreless)
<b>Material</b>	HL832NSF(LC)
<b>Min. Line / Space - Inner Layer</b>	100/85um @ 20um Cu
<b>Min. Line / Space - Outer Layer</b>	60/70um @ 20um Cu
<b>Laser Via Size / Pad Size</b>	65um/170um
<b>Board Thickness (S / M to S / M)</b>	0.310+/-0.04mm
<b>Solder Mask Type</b>	PSR-4000 AUS308 (Green)
<b>Surface Treatment</b>	ENEPIG
<b>Others</b>	Cavity

### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.33oz+Plating	18	
	Prepreg	32	
L2	0.33oz+Plating	20	
	Prepreg	38	
L3	0.33oz+Plating	18	
	Prepreg	31	
L4	0.33oz+Plating	20	
	Prepreg	34	
	core	50.8	
	Prepreg	38	
L5	0.5oz+Plating	18	
	Bottom Soldermask	15	

### Cross Section



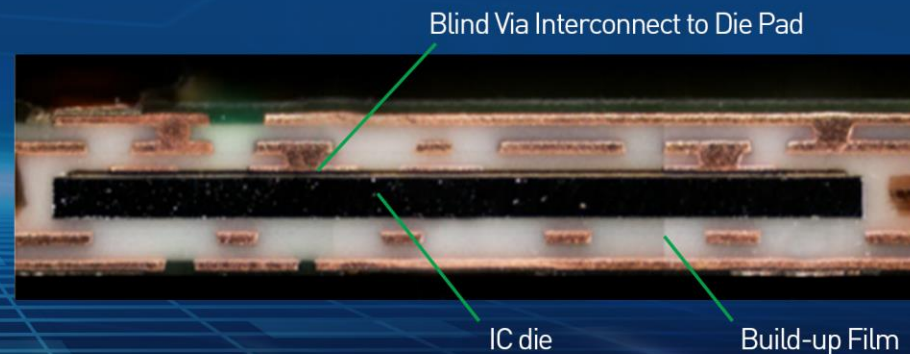
### Product Information

Product Application	Smart Watch Module (MIC+Sensor)
Stack-up	6L Anylayer
Material	HL832NS+Build-up Film
Min. Line / Space - Inner Layer	60/95um @ 15um Cu
Min. Line / Space - Outer Layer	NA
Laser Via Size / Pad Size	65um/150um
Board Thickness (S/M to S/M)	0.3+/-0.03mm
Solder Mask Type	PSR-4000 AUS308 (Green)
Surface Treatment	ENEPIG
Others	Embedded ASIC Die

### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.33oz+Plating	15	
	Build-up Film	29	
L2	0.33oz+Plating	15	
	Build-up Film	22	
L3	0.33oz+Plating	15	
	Core	80	
L4	0.33oz+Plating	15	
	Build-up Film	22	
L5	0.33oz+Plating	15	
	Build-up Film	29	
L6	0.33oz+Plating	15	
	Bottom Soldermask	15	

### Cross Section



### Product Information

Product Application	AiP Module
Stack-up	6L Anylayer
Material	EMC EM-526 + Building-up Film
Min.Line/Space - Inner Layer	100/100um @ 12um Cu
Min.Line/Space - Outer Layer	100/100um @ 12um Cu
Laser Via Size/pad Size	70um/180um
Board Thickness (S/M to S/M)	0.285mm
Solder Mask Type	AUS ME1-Z(Black)
Surface Treatment	ENIG
Others	Antenna Die + Cavity

### Stackup

Layer	Layer Properties	Thickness (um)	Structure
	Top Soldermask	15	
L1	0.086oz+Plating	12	
	Build-up film	25	
L2	0.086oz+Plating	12	
	Build-up film	25	
L3	0.33oz+Plating	20	
	Core	69	
L4	0.33oz+Plating	20	
	Build-up film	25	
L5	0.086oz+Plating	12	
	Build-up film	25	
L6	0.086oz+Plating	12	
	Bottom Soldermask	15	

### Cross Section



### Product Information

Product Application	Smartphone Motherboard
Stack-up	12L Anylayer
Board Thickness	0.65±10mm
Material	EMC EM-390
Min.Line/Space - Inner Layer	40/50 @ 17um Cu,30/30 @ 15um Cu
Min.Line/Space - Outer Layer	60/70 @ Cu 20um
Min.Via/Pad	76/178um
Surface Treatment	ENIG+OSP
Others	L4/L7 mSAP

### Cross Section



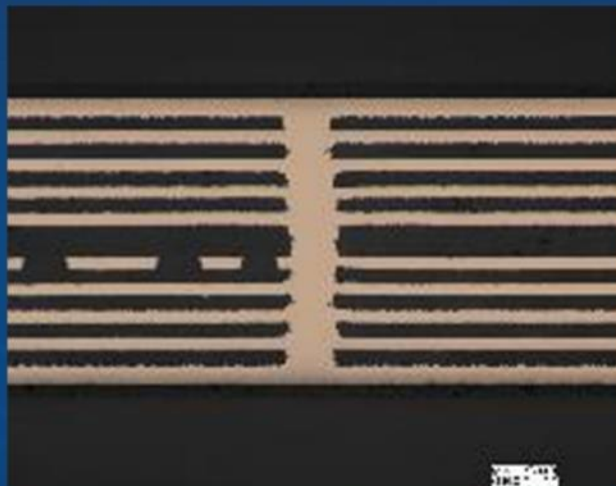
### Stackup

Layer	Layer Properties	Material	Thickness (um)	Structure
	Top Soldermask:	Tamura DSR330 S50-P9G	15	
L1	0.33oz+Plating		20	
	Prepreg	EM-390	36	
L2	0.33oz+Plating		17	
	Prepreg	EM-390	34	
L3	0.33oz+Plating		17	
	Prepreg	EM-390	36	
L4	3um+Plating		15	
	Prepreg	EM-390	35	
L5	0.33oz+Plating		17	
	Prepreg	EM-390	34	
L6	0.33oz+Plating		17	
	Core	EMC EM-390	58	
L7	0.33oz+Plating		17	
	Prepreg	EM-390	34	
L8	0.33oz+Plating		17	
	Prepreg	EM-390	35	
L9	3um+Plating		15	
	Prepreg	EM-390	36	
L10	0.33oz+Plating		17	
	Prepreg	EM-390	34	
L11	0.33oz+Plating		17	
	Prepreg	EM-390	36	
L12	0.33oz+Plating		20	
	Bottom Soldermask:		15	

### Product Information

Product Application	Smartwatch
Stack-up	10L Anylayer
Board Thickness	0.45±0.05mm
Material	EM390 2mil Core +1017 Prepreg
Min.Line/Space - Inner Layer	35/50 @ 15um Cu
Min.Line/Space - Outer Layer	45/78 @ 20um Cu
Min.Via/Pad	76/200um
Surface Treatment	ENIG
Others	/

### Cross Section



### Stackup

Layer	Layer Properties	Material	Construction	Thickness (um)	Structure
	Top Soldermask	Taiyo PSR-4000 D 10ME		15	
L1	0.33oz+Plating			20	
	Prepreg	EM390	1017	28	
L2	0.33oz+Plating			15	
	Prepreg	EM390	1017	27	
L3	0.33oz+Plating			15	
	Prepreg	EM390	1017	28	
L4	0.33oz+Plating			15	
	Prepreg	EM390	1017	26	
L5	0.33oz+Plating			15	
	Core	EMC EM390	1067*1	51	
L6	0.33oz+Plating			15	
	Prepreg	EM390	1017	28	
L7	0.33oz+Plating			15	
	Prepreg	EM390	1017	27	
L8	0.33oz+Plating			15	
	Prepreg	EM390	1017	28	
L9	0.33oz+Plating			15	
	Prepreg	EM390	1017	27	
L10	0.33oz+Plating			20	
	Bottom Soldermask			15	

Product Information

Product Application		Camera Module
Stack-up		8L Anylayer
THK	Board	0.29 ± 0.03mm
	Core	60um
	Prepreg	20um
Size	Strip	240*95mm
	Unit	18*20mm
Material	Laminate	MCL - E - 770G
	Solder Mask	PSR - 4000 AUS320E
Surface Finishing		ENIG
Line Width / Space		45/50um
Laser Via	Via Size	75um
	Target Pad & Capture Pad	125um
Others		Cavity

Stackup

Layer	Layer Properties	Thickness (um)	Structure
Top Soldermask		18	
L1	0.33oz+Plating GEA-770G	10 20	
L2	0.33oz+Plating GEA-770G	10 20	
L3	0.33oz+Plating GEA-770G	10 20	
L4	0.33oz+Plating MCL-E-770G	15 60	
L5	0.33oz+Plating GEA-770G	15 20	
L6	0.33oz+Plating GEA-770G	10 20	
L7	0.33oz+Plating GEA-770G	10 20	
L8	0.33oz+Plating	10	
Bottom Soldermask		18	



Product Information

Stackup

<b>Product Application</b>	AR Glasses
<b>Stack - up</b>	5+2F+5 , 12L Anylayer
<b>Lamination Cycles</b>	5x lamination
<b>Min. Line / Space - Inner Layer</b>	65/75um @ 20um Cu
<b>Min. Line / Space - Outer Layer</b>	85/85um @ 35um Cu
<b>Laser Via Diameter</b>	100um
<b>Board Thickness</b>	Rigid area 1.0mm Flex area 0.165mm
<b>FCCL Thickness</b>	50um
<b>Base Material</b>	Rigid: Panasonic R-1566(WN) FCCL: Dupont AK125012EM Coverlay: Dupont HXC1225
<b>Surface Finishing</b>	ENIG

Layer	Layer Properties	Material	Construction	Thickness (um)	Structure
	Top Soldermask	Taiyo PSR4000 MPH		20	
L1	0.33oz+Plating			35	
	Prepreg	Panasonic R-1566(WN)	1078	63	
L2	0.5oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	56	
L3	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	56	
L4	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	62	
L5	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1067	50	
L6	0.33oz+Plating			20	
	PI Base	Dupont AK125012EM		50	
L7	0.33oz+Plating			20	
	Prepreg	Panasonic R-1566(WN)	1067	51	
L8	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	62	
L9	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	56	
L10	0.33oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	57	
L11	0.5oz+Plating			25	
	Prepreg	Panasonic R-1566(WN)	1078	62	
L12	0.33oz+Plating			35	
	Bottom Soldermask			20	

Layer Properties	Material	Thickness (um)
SUB		150
Adhesive		45
Coverlay	Dupont HXC1225	12.5
Adhesive		20
0.33oz+Plating		15
PI Base	Dupont AK125012EM	50
0.33oz+Plating		15
Adhesive		20
Coverlay	Dupont HXC1225	12.5

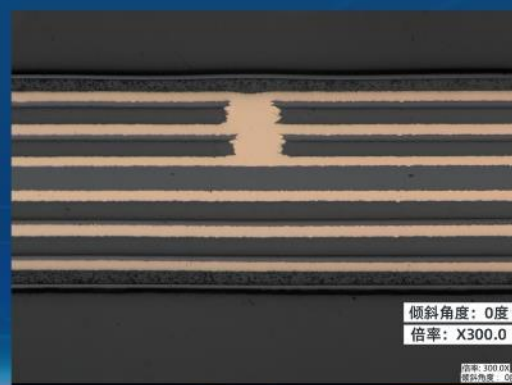
### Product Information

Product Application	VR Glass
Stack-up	3+(1F+1F+2F+1F+1F) +3, 12L Anylayer
Lamination Cycles	5
Board Thickness	Rigid Area 0.8mm, Flex Area 0.425mm
Material	Rigid Area :Panasonic FCCL: Taiflex/Nexflex Bonding Sheet: Hanwha HGB-E400WGA
Min.Line/Space - Inner Layer	47/48um @ 17um Cu
Min.Line/Space - Outer Layer	75/75um @ 30um Cu
Min.Via/Pad	75/um
Surface Treatment	ENIG
Others	Rigid Area FR4 Flex Area Bonding Sheet

### Cross Section



Rigid Area



Flex Area

### Stackup

Layer	Layer Properties	Material	Construction	Thickness (um)	Structure
L1	Top Soldermask	Taiyo FR-400 GICCS		20	
L1	0.33oz+Plating	Panasonic R-1566(WN)	1037	30	
L2	0.33oz+Plating	Panasonic R-1566(WN)	1037	45	
L2	Prepreg	Panasonic R-1566(WN)	1037	17	
L3	0.33oz+Plating	Panasonic R-1566(WN)	1037	47	
L3	Prepreg	Panasonic R-1566(WN)	1037	17	
L3	0.33oz+Plating	Panasonic R-1566(WN)	1037	49	
L4	0.33oz+Plating	Panasonic R-1566(WN)	1037	17	
L4	PI Base	NEXFLEX E120SS500PM		12.5	
L4	Prepreg	Panasonic R-1566(WN)	1027	44	
L5	0.33oz+Plating	Panasonic R-1566(WN)	1027	17	
L5	PI Base	NEXFLEX E120SS500PM		12.5	
L5	Prepreg	Panasonic R-1566(WN)	1027	41	
L6	0.33oz+Plating	Panasonic R-1566(WN)	1027	17	
L6	PI Base	Taiflex 2PDE2003MW		50	
L7	0.33oz+Plating	Panasonic R-1566(WN)	1027	17	
L7	Prepreg	Panasonic R-1566(WN)	1027	44	
L7	PI Base	NEXFLEX E120SS500PM		12.5	
L8	0.33oz+Plating	Panasonic R-1566(WN)	1027	17	
L8	Prepreg	Panasonic R-1566(WN)	1027	44	
L8	PI Base	NEXFLEX E120SS500PM		12.5	
L9	0.33oz+Plating	Panasonic R-1566(WN)	1037	17	
L9	Prepreg	Panasonic R-1566(WN)	1037	50	
L10	0.33oz+Plating	Panasonic R-1566(WN)	1037	17	
L10	Prepreg	Panasonic R-1566(WN)	1037	47	
L11	0.33oz+Plating	Panasonic R-1566(WN)	1037	17	
L11	Prepreg	Panasonic R-1566(WN)	1037	45	
L12	0.33oz+Plating	Panasonic R-1566(WN)	1037	30	
L12	Bottom Soldermask			20	

Layer Properties	Material	Thickness (um)	Structure
Caveley	Taiflex FHT0335	12.5	
Adhesive		25	
0.33oz+Plating		17	
PI Base	NEXFLEX E120SS500PM	12.5	
Bonding Sheet	Hanwha HGB-E400WGA	37	
0.33oz+Plating		17	
PI Base	NEXFLEX E120SS500PM	12.5	
Bonding Sheet	Hanwha HGB-E400WGA	37	
0.33oz+Plating		17	
PI Base	Taiflex 2PDE2003MW	50	
0.33oz+Plating		17	
Bonding Sheet	Hanwha HGB-E400WGA	37	
PI Base	NEXFLEX E120SS500PM	12.5	
0.33oz+Plating		17	
Bonding Sheet	Hanwha HGB-E400WGA	37	
PI Base	NEXFLEX E120SS500PM	12.5	
0.33oz+Plating		17	
Adhesive		25	
Caveley	Taiflex FHT0335	12.5	

Product Information

Product Application	AR/VR
Stack-up	4L
Board Thickness	240um
Material	Dsflex-600 121212+Dsfles1212 Thermosetting Adhesive: IF-BH12EBF1 Protective Film: FHB0515
Min.Line/Space - Inner Layer	75/50um @12um
Min.Line/Space - Outer Layer	85/75um @12um
Min.Via/Pad	150/350um
Surface Treatment	ENIG
Others	Uncover+3D Steel Sheet

Stackup

Layer	Layer Properties	Thk (um)	Material Provider	Generic Name	Structure
	EMI Shielding	10	Tetsuta	SF-PC5900-BB	
	Polyimide Coverlay	12.5	Taiflex	FHB05015	
L1	Adhesive	15			
	Copper	12	Dsflex	Dsflex-600 121200R	
	Polyimide (PI)	12.5			
	Adhesive/Bonding She	12.5	ITEQ	IF-BH12EBF1	
	Polyimide Coverlay	12.5	Taiflex	FHT0515	
L2	Adhesive	15			
	Copper	12			
	Polyimide (PI)	12.5	Dsflex	Dsflex-600 121212R	
L3	Copper	12			
	Adhesive	15	Taiflex	FHB05015	
	Polyimide Coverlay	12.5			
	Adhesive/Bonding She	12.5	ITEQ	IF-BH12EBF1	
	Polyimide (PI)	12.5	Dsflex	Dsflex-600 121200R	
L4	Copper	12			
	Adhesive	15	Taiflex	FHB05015	
	Polyimide Coverlay	12.5			
	EMI Shielding	10	Tetsuta	SF-PC5900-BB	
	Adhesive				Adhesive
	SUS Stiffener				SUS Stiffener
					Adhesive
					PI Stiffener
					Adhesive