



Capability List



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Manufacturing Capacity

QTA & Prototype

Layer : 1L ~32 L

Impedance Board

Ball Grid Array (BGA)

Blind/ Buried Via

Micro Via (Laser Drilling)

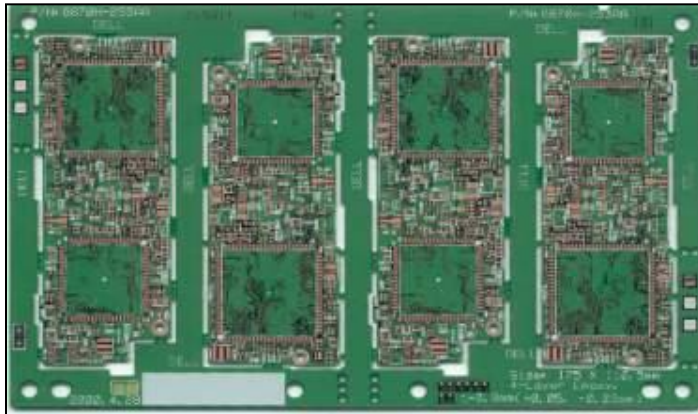
Flex /Rigid Flexible PCB

Series Orders

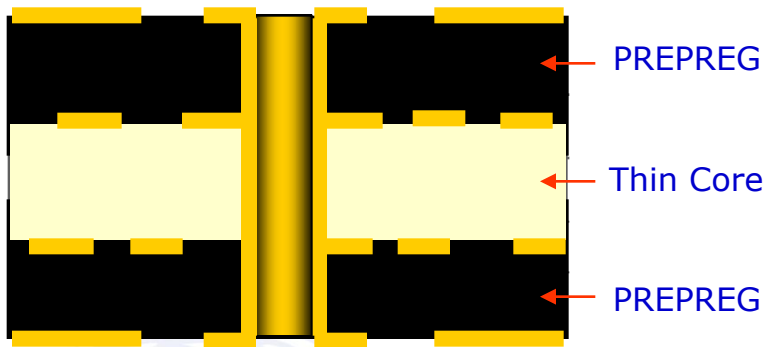
Layer : 1L ~ 24 L

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Multi Layer Board



Structure



Application

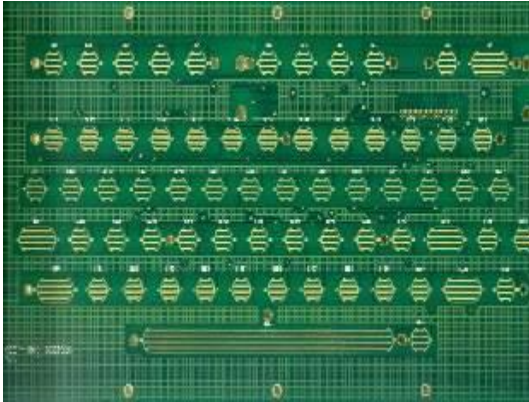
Mobile Phone, Telecommunication, Digital TV, Computer, Notebook, Hard disk drive, CD-ROM drive, Digital Video Camera...

Specification

Item	Unit	Standard	Special
Layer		2~24	32
Base Material		FR4	High Tg FR-4
Min. Thickness	mm	0.4	~4.8
Line Width/Space	mm	0.125/0.125	0.10/0.10
Min. Hole Size	mm	0.25	0.20
Aspect Ratio		10:1	12:1

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IVH (Interstitial via Hole) PCB



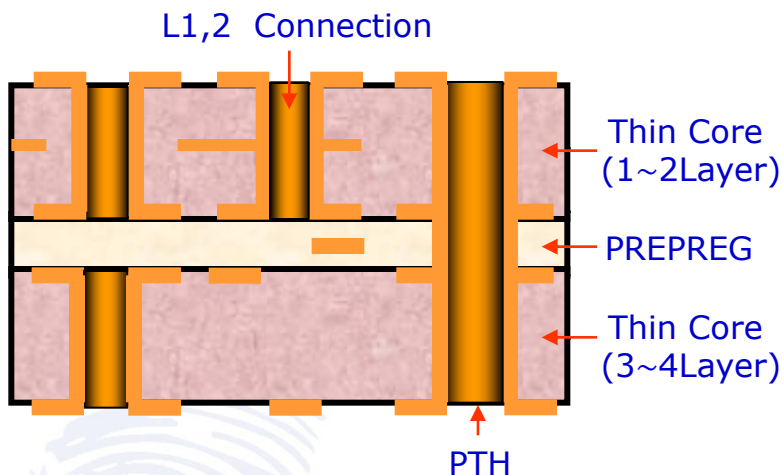
Application

Mobile Phones, Notebook

Specification

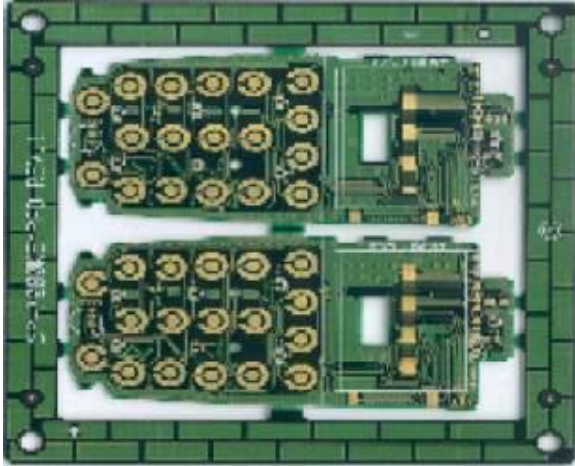
Item	Unit	Standard	Special
Layer		6	12
Base Material		FR4	High Tg FR-4
Min. Thickness	mm	0.8	0.5
Line Width/Space	mm	0.125/0.125	0.075/0.075
Min. Hole Size	mm	0.20	0.12
Aspect Ratio		8:1	10:1

Structure

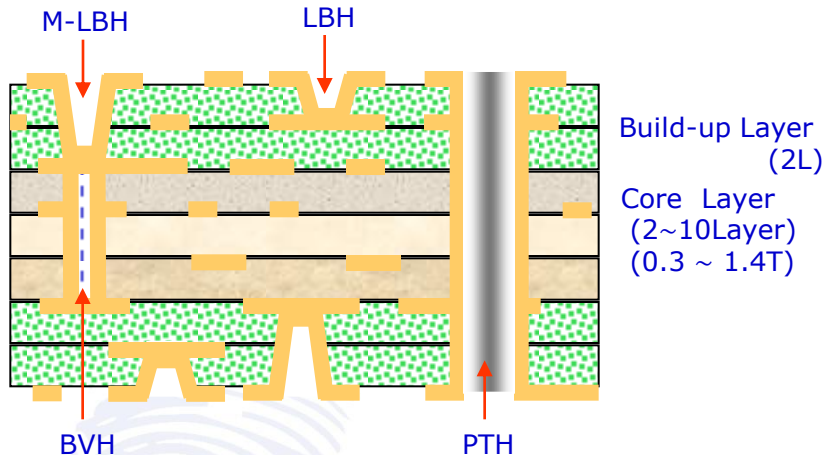


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Build Up PCB



Structure



Application

Mobile Phones, Digital Video Camera , Notebook ...

Specification

Item		Standard	Advanced
Laser Via Hole	1L-2L	0.11mm	0.07mm
	1L-3L	0.20mm	0.15mm
	1L-2L-3L	0.25mm	0.20mm
Line Width/Space		0.076 / 0.076mm	0.09 / 0.04mm
Min. Hole Size		0.20mm	0.15mm
Dielectric	Material	RCC/FR-4	RCC/FR-4
	Thickness	50-250 μ m	50-300 μ m
	Tg	140-180 $^{\circ}$ C	140-210 $^{\circ}$ C

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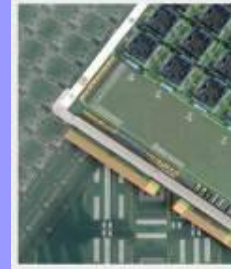
Special Board

Specialty Boards

Probe Cards/Boards



Burn-in Boards



High Technology Raw PCBs

Ultra Thin Boards



High Density Boards



Back Plane Boards



Build-Up Boards



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Design for Manufacturing (1)

Shop Tolerance :	Standard	Advanced	Remark
Minimum Outer Line Width	0.125mm	0.075mm	Advanced only on 9,12 and 18 mu basecopper
Minimum Inner Line Width	0.1	0.06	
Minimum Outer Space, Trace/Trace	0.125	0.04	Advanced only on 9,12 and 18 mu basecopper
Minimum Inner Space, Trace/Trace	0.1	0.06	
Minimum Space, PCB Edge to Conductor	0.2	0.2	
Layer-to-Layer Registration	± 0.125	± 0.1	
Maximum Finished PCB Thickness	0.3	0.6	
Minimum Board Thickness Tolerance	±10%	±7%	
Warp age (inch per inch) (flatness of finished board)	.008"	.006"	
Minimum Component Pitch	0.05	0.03	
Minimum Dielectric Thickness	0.1	0.06	
Maximum Number of Layers	24	32	



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Design for Manufacturing (2)

Pad to hole size :	Standard	Advanced	Remark
Tolerance-Plated Hole Size	±0.075mm	±0.05mm	
Nominal Finished Hole Size	0.25	0.2	
Plane Relief Diameter over drilled hole	0.25	0.2	
Minimum Outer Non-Plated Hole to Trace Spacing	0.25	0.2	
Minimum Inner Non-Plated	0.2	0.15	

Drilling :	Standard	Advanced	Remark
Minimum Drill Size	0.25mm	0.075mm	Depend on AR
Maximum Drill Size (Above .200 is routed)	6.0	6.0	
Maximum Aspect Ratio	10:1	12:1	

Solder mask criteria :	Standard	Advanced	Remark
Solder mask clearances	0.15mm	0.1mm	
(no mask pads/complete line coverage)	0.075/side	0.05/side	
SMT Minimum Pad Spacing	0.15	0.1	
Minimum Solder mask Dam	0.1	0.075	

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Design for Manufacturing (3)

Surface finished available :	Standard	Advanced	Remark
HASL (Lead Free) Thickness	3-25 μ m		
Immersion Silver	0.125- 0.63 μ m		
Organic Solder ability Preservative (OSP)	0.2-0.5 μ m		
Hard gold (Galvanic)	Au 1-2 μ m		Ni 3- 7 μ m
Immersion Ni/Au (ENIG)	Au 0.05- 1.0 μ m		Ni 3- 7 μ m
Immersion White Tin	0.8-1.2 μ m		

Testing capability:	Standard	Advanced	Remark
Minimum component Pitch	.020"	.012"	
Test Parameters	100 Volt	250 Volt	
	10 Ω resist	50 Ω resist	
	50M Ω	2G Ω	

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Design for Manufacturing (4)

Materials :	Standard	Advanced	Remark
FR4 (incl. Mid (150-170) Tg)	X		
FR4 High (+170) Tg		X	
Teflon (PTFE)		X	
Halogen Free		X	
High-Frequency (mainly Rogers materials)		X	
RCC (Resin Coated Copper Foil)		X	
Flex materials		X	

Copper thickness FR4 basematerial:	Standard	Advanced	Remark
1/2Oz, 1Oz, 2Oz, 3Oz	X		
Up to 6Oz		X	

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Manufacturing Capacity

Flex / Flex-Rigid

Number of layers – Flex-Rigid	20
Numbers of layer – flex	16
Blind and buried via's	Yes
Metal heat sinks (in rigid section)	Yes
Dielectric thickness (flex)	0.00005" / 12.5 my to 0.005"/ 125 microns
Adhesive thickness (flex)	0.00005" / 12.5 my to 0.002"/ 50 microns
Adhesive less material available (Sutter coated)	Yes
Standard copper weight (flex)	0.5 ounces / 17 my to 3.0 ounces / 105 microns
Electrolytic wire bondable gold	
Purity	> 99.998%
Hardness	< 90%
Flat thickness	0.000005" / 0.125 microns
Gold thickness	0.0004" / 10 microns maximum
MIL9G-45204C Type III Grade A	Yes
UL Approval	Yes
Tin/lead plate and fused	Yes
100 % Chem. Tin	Yes
Chem. Ni/Au	Yes
Hot Air Levelling	Yes
Organic coating	Yes

- ❑ Tighter tolerances, specifications and varying finishes and sizes can be achieved on request.

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Design for Manufacturing (5)

Available Finishes

1. Lead Free HAL
2. Immersion Gold
3. Flash Gold
4. Immersion Tin

5. Hard Gold
6. HASL
7. Immersion Silver
9. Immersion Palladium



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