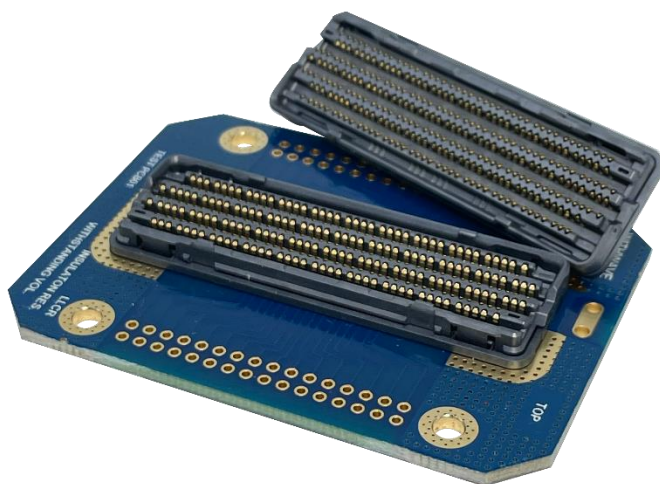


## High Speed Connector 0.9mm Pitch Systems



### ■ Features

- Higher bandwidth applications 56 Gbps NRZ, 112 Gbps PAM-4
- Stack heights from 5.0mm
- High pin counts : 292 total contacts(66 differential pairs)
- Pitch 0.9 mm x 1.5mm
- Differential pair 92ohm nominal impedance
- Surface Mount BGA Pin Design

### ■ Benefits

- Minimizes impedance discontinuities
- Excellent Insertion and Return loss performance
- Low crosstalk noise and resonances
- Biggest forced-offset(Rigid alignment) tolerance
- Hermaphroditic mating interface
- Integrated power and additional signal pin per column

### ■ Application

- Telecommunication and Data Embedded
- Data Servers and Storage
- Industrial Controls and Equipment
- Medical Instrumentation
- Military Electronics
- Network Diagnostics
- Test and Measurement Electronics

## High Speed Connector 0.9mm Pitch Systems

### ■ MECHANICAL PERFORMANCE

- Mating Tolerance :
  - X:  $\pm 1.0\text{mm}$ (floating mating)
  - Y:  $\pm 1.2\text{mm}$ (floating mating)
  - Z:  $-0.2/+0.5\text{mm}$
- Forced-offset (Rigid alignment) tolerance : X/Y  $\pm 0.2\text{mm}$
- Mating Force 0.45N max. per contact
- Un-mating Force 0.1N min. per contact

### ■ ELECTRICAL PERFORMANCE

- Contact Resistance:  $<10\text{m}\Omega$  change from initial reading after environmental exposure
- Current Rating(with  $<30^\circ\text{C}$  temperature rise above ambient): 0.5A min
- Insulation Resistance : 1000Mohm min
- Withstanding Voltage : 500Vrms min

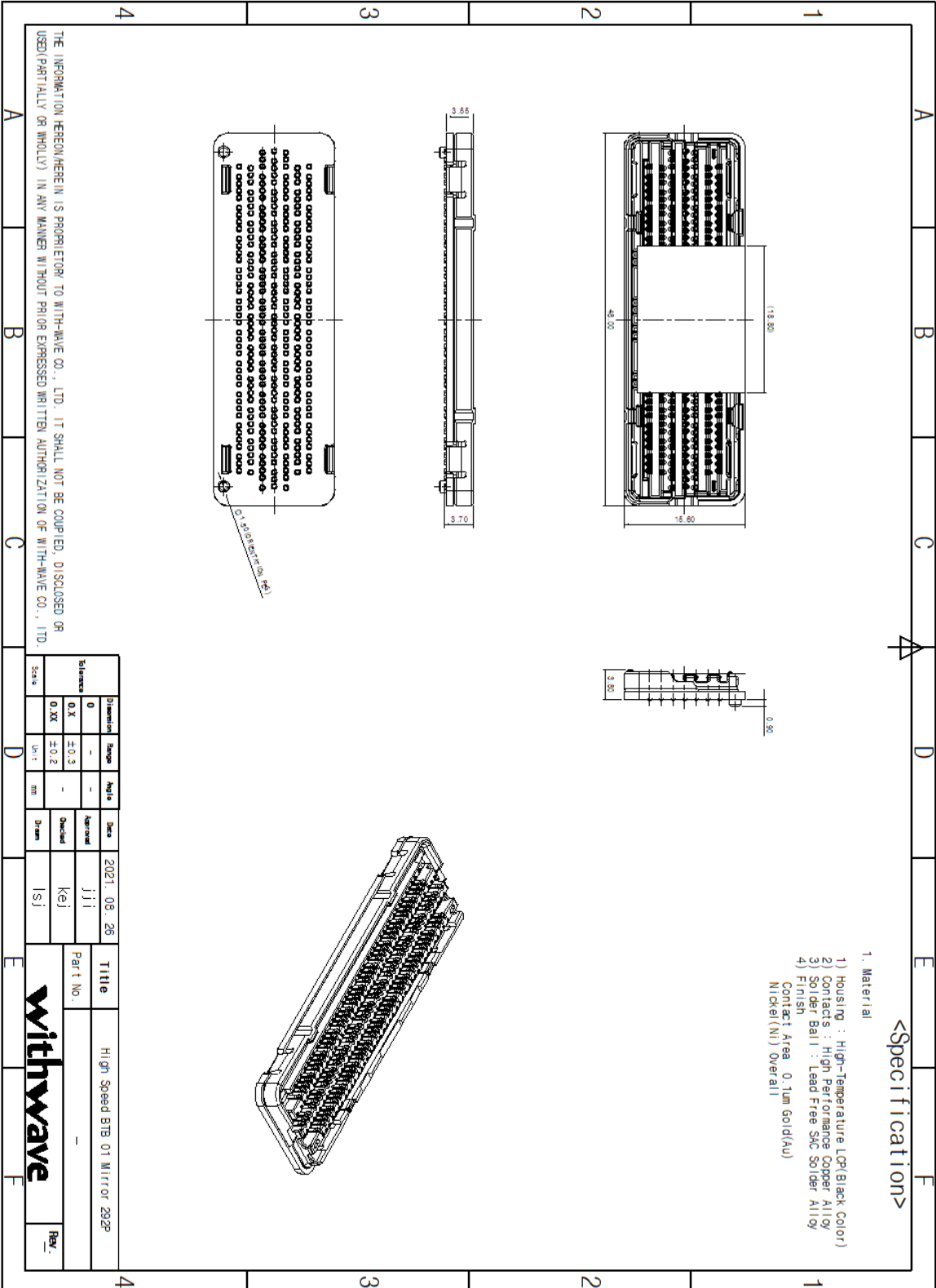
### ■ MATERIAL

- Housing : High-Temperature LCP
- Contacts : High performance Copper Alloy
- Plating(s) :
  - Contact Area 0.1 $\mu\text{m}$  Gold(Au)
  - Nickel(Ni) Overall

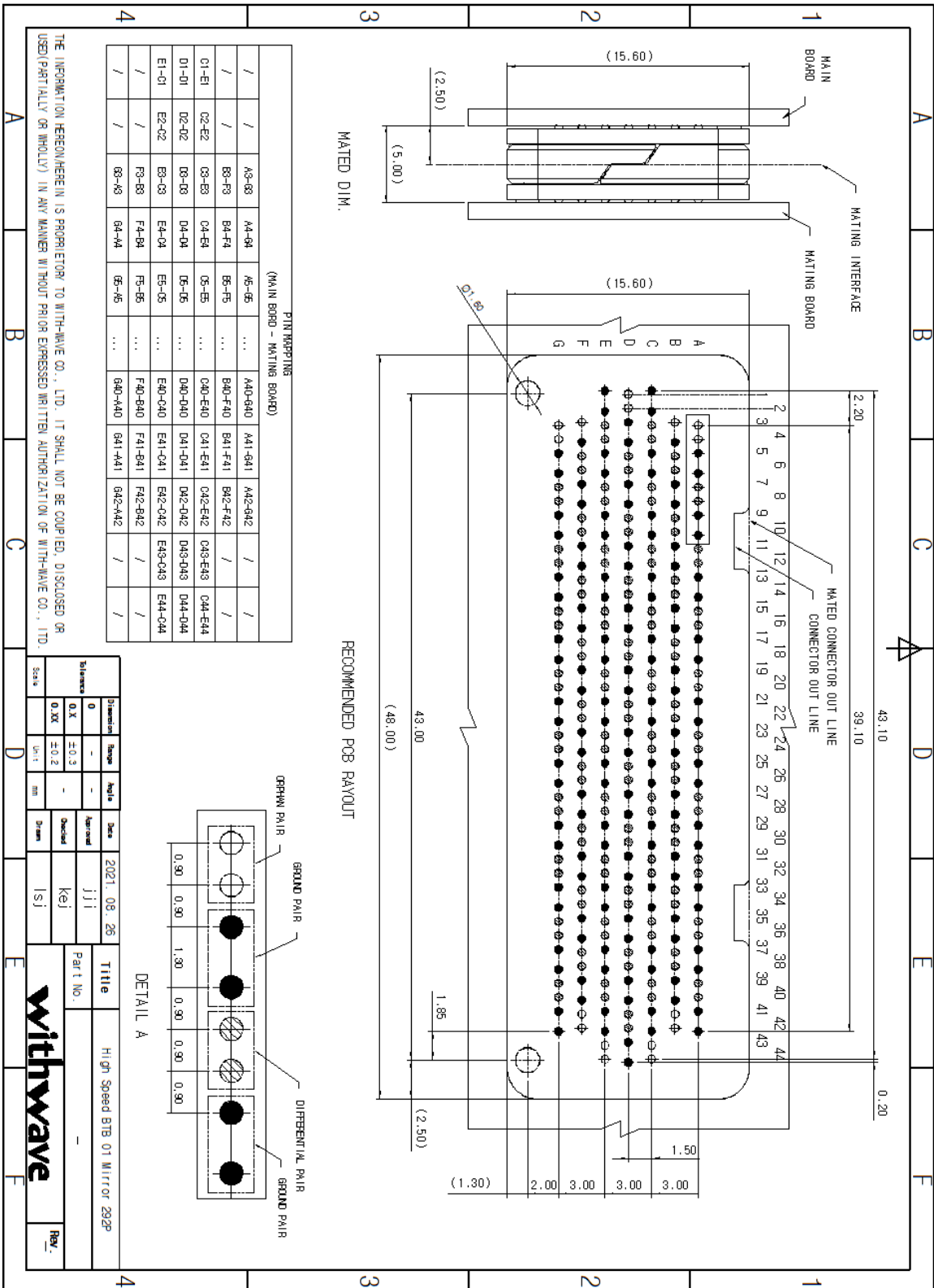
### ■ ENVIRONMENTAL

- Operating Temperature range :  $-55$  to  $+85^\circ\text{C}$

## CONNECTOR DRAWING



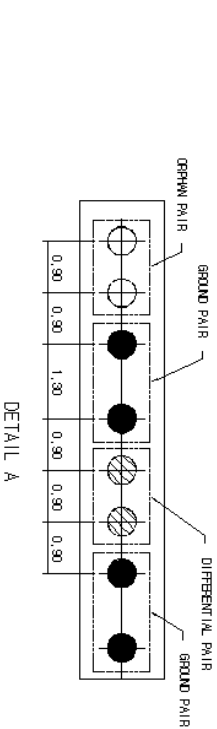
### RECOMMENDED PCB LAYOUT



PIN MAPPING (MAIN BOARD - MATING BOARD)

/	A3-F3	A4-F4	A5-F5	...	A40-G40	A41-G41	A42-G42	/	/
/	B3-F3	B4-F4	B5-F5	...	B40-F40	B41-F41	B42-F42	/	/
C1-E1	C2-E2	C3-E3	C4-E4	...	C40-E40	C41-E41	C42-E42	C43-E43	C44-E44
D1-D1	D2-D2	D3-D3	D4-D4	...	D40-D40	D41-D41	D42-D42	D43-D43	D44-D44
E1-D1	E2-C2	E3-C3	E4-C4	...	E40-C40	E41-C41	E42-C42	E43-C43	E44-C44
/	F3-F3	F4-F4	F5-F5	...	F40-B40	F41-B41	F42-B42	/	/
/	G3-G3	G4-G4	G5-G5	...	G40-M40	G41-M41	G42-M42	/	/

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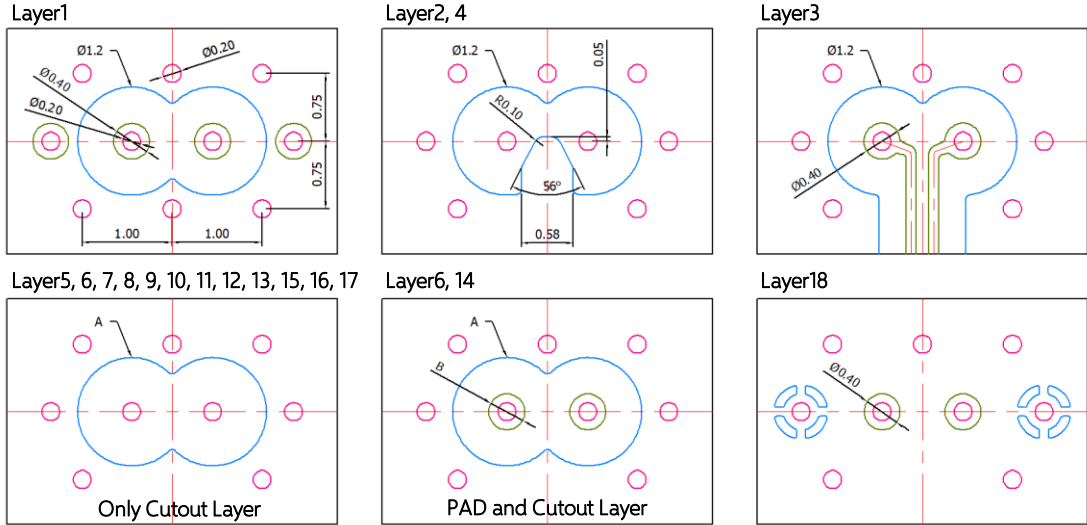
Dimension	0	±0.3	±0.2	mm	Scale	2021.08.26	Title	High Speed BTB 01 Mirror 292P
Balance	0	±0.3	±0.2	mm	Scale	2021.08.26	Part No.	-
Scale	0	±0.3	±0.2	mm	Scale	2021.08.26	Rev.	-



### PCB DESIGN GUIDE

PAD    
  Cutout    
  Via( $\varnothing 0.2$ )    
  Back Drill Endmill  $\varnothing 0.45$

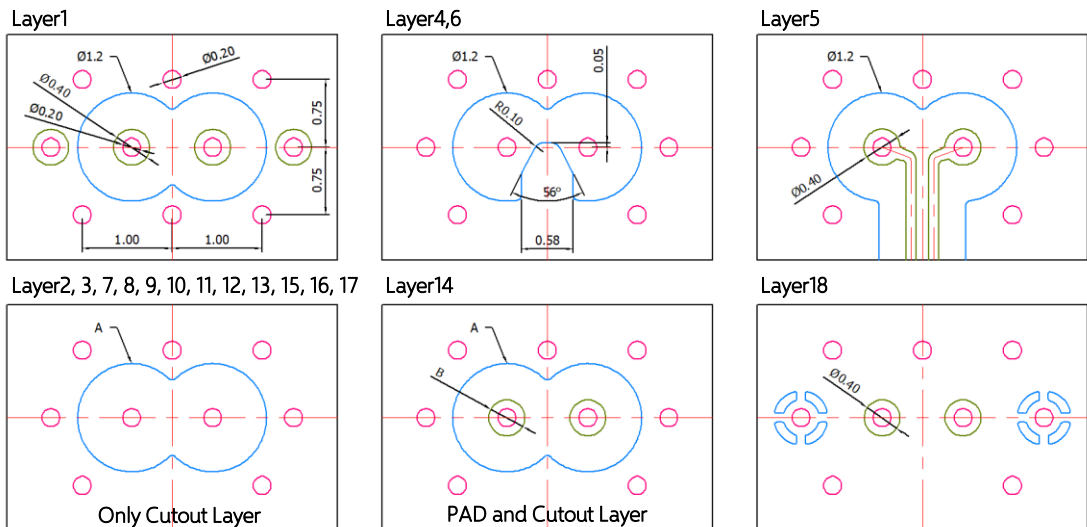
#### PCB Layer3 Transition



PAD and Cutout Dimension

	PAD(A)	Cutout(B)		PAD(A)	Cutout(B)		PAD(A)	Cutout(B)
L5	-	$\varnothing 1.20$	L10	-	$\varnothing 0.65$	L15	-	$\varnothing 1.20$
L6	-	$\varnothing 1.15$	L11	-	$\varnothing 0.80$	L16	-	$\varnothing 1.20$
L7	$\varnothing 0.40$	$\varnothing 1.05$	L12	-	$\varnothing 1.05$	L17	-	$\varnothing 1.20$
L8	-	$\varnothing 0.80$	L13	-	$\varnothing 1.15$			
L9	-	$\varnothing 0.65$	L14	$\varnothing 0.50$	$\varnothing 1.20$			

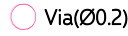
#### PCB Layer5 Transition



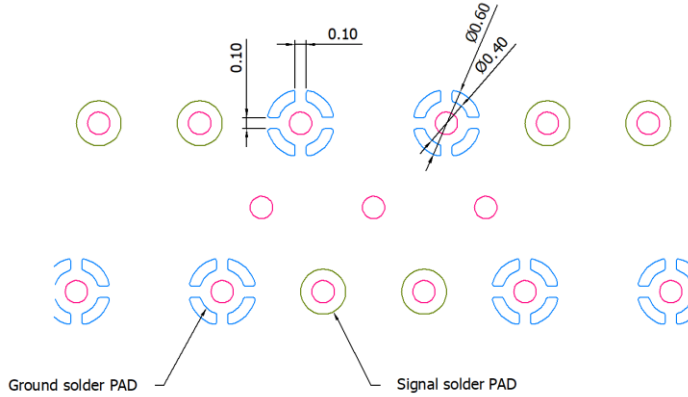
PAD and Cutout Dimension

	PAD(A)	Cutout(B)		PAD(A)	Cutout(B)		PAD(A)	Cutout(B)
L2	-	$\varnothing 1.20$	L10	-	$\varnothing 0.62$	L15	-	$\varnothing 1.20$
L3	-	$\varnothing 1.20$	L11	-	$\varnothing 1.15$	L16	-	$\varnothing 1.20$
L7	-	$\varnothing 1.20$	L12	-	$\varnothing 1.20$	L17	-	$\varnothing 1.20$
L8	-	$\varnothing 1.15$	L13	-	$\varnothing 1.20$			
L9	-	$\varnothing 0.62$	L14	$\varnothing 0.50$	$\varnothing 1.20$			

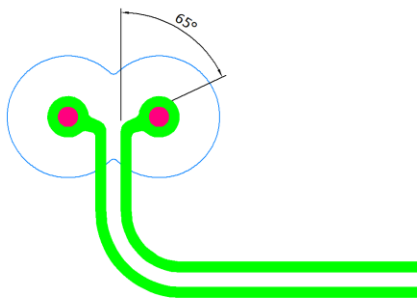
### PCB DESIGN GUIDE



#### Thermal Relief Pad

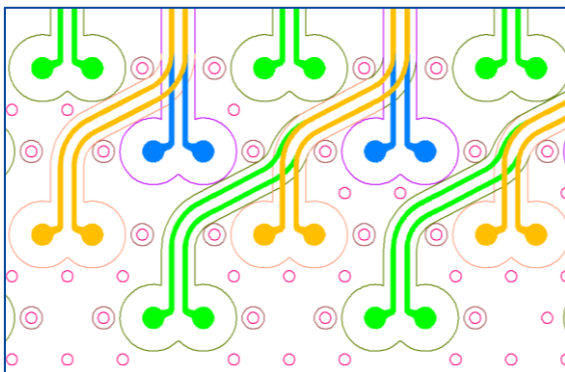


#### Differential Pair Signal PAD

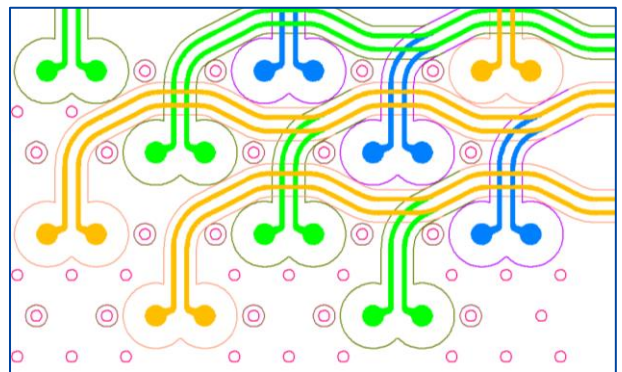


#### Differential Pair Routing

- Recommended to route the PCB traces one pitch away.
- Add a GND via between signal and signal for maximum cross talk performance.



Vertical routing



Horizontal routing