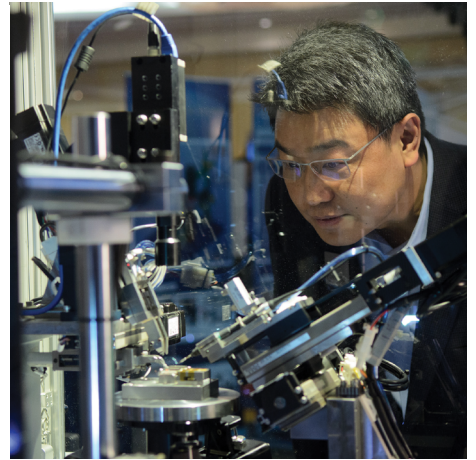




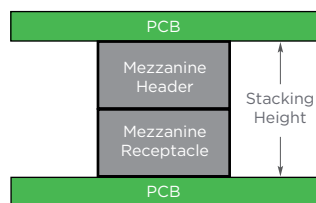
QUICK REFERENCE GUIDE

STACKING CONNECTORS

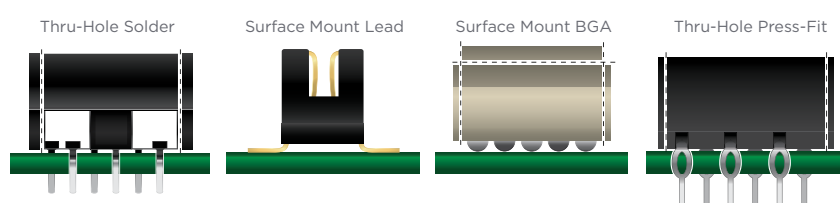
THINGS TO CONSIDER WHEN SELECTING A MEZZANINE CONNECTOR

- Determine a range of stack heights that will meet the application requirements
- Determine the minimum number of signals that must pass between the two printed circuit boards (PCBs) with consideration for power and ground
- Determine how much space is available for the connectors with consideration for its location. Will a traditional two-row connector fit or will a “grid” (many rows) style product work best in the application? The largest pitch that will fit is typically chosen, as larger pitch connectors tend to be more rugged and easier to process
- Determine the preferred method of attachment. Ball-Grid Array (BGA) products are a variant of surface mount that give connector manufacturers greater co-planarity tolerance than typical surface mount leads. Other types of attachments are solder thru-hole and press-fit thru-hole
- Determine the connector type, open pin field or controlled impedance, that will best fit the application. Open pin field connectors typically do not have any pre-determined grounds and are usually used in lower speed applications. TE Connectivity does offer several open pin field connectors that have very good electrical performance characteristics

How To Measure For A Mezzanine Connector



Mounting Styles



PRODUCT SIZES

Mated Stack Height		Connector Description	Pitch	PCB Attach Method	Type	0-30 positions	31-100 positions	101-200 positions	More than 200 positions
mm	inch								
1.00	0.039	.4mm Fine Stack	0.4mm	SMT	Open Pin				
1.50	0.059	.4mm Fine Stack	0.4mm	SMT	Open Pin				
1.50	0.059	.5mm Fine Stack	0.5mm	SMT	Open Pin				
3.00	0.118	.8mm Fine Stack	0.8mm	SMT	Open Pin				
3.90	0.154	.8mm Fine Stack	0.8mm	SMT	Open Pin				
4.00	0.157	.5mm Fine Mate	0.5mm	SMT	Open Pin				
4.00	0.157	.8mm Fine Mate	0.8mm	SMT	Open Pin				
4.00	0.157	.8mm Fine Mate	0.8mm	SMT	Open Pin				
4.20	0.165	.8mm Fine Stack	0.8mm	SMT	Open Pin				
4.20	0.165	Micro-MaTch	1.27mm	TH	Open Pin				
4.50	0.177	.5mm Fine Mate	0.5mm	SMT	Open Pin				
4.50	0.177	.8mm Fine Mate	0.8mm	SMT	Open Pin				
4.70	0.185	.8mm Fine Stack	0.8mm	SMT	Open Pin				
4.60	0.181	AMPMODU Small Centerline	1.0mm	SMT	Open Pin				
5.00	0.197	.5mm Free Height	0.5mm	SMT	Open Pin				
5.00	0.197	.6mm Free Height	0.6mm	SMT	Open Pin				
5.00	0.197	.8mm Fine Stack	0.8mm	SMT	Open Pin				
5.00	0.197	.8mm Free Height	0.8mm	SMT	Open Pin				
5.00	0.197	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
5.00	0.197	MICTOR SB	0.8mm	SMT	Controlled Z				
5.20	0.205	Micro-MaTch	1.27mm	TH-SMT	Open Pin				
5.50	0.217	.5mm Fine Mate	0.5mm	SMT	Open Pin				
5.80	0.228	Micro-MaTch	1.27mm	TH	Open Pin				
5.90	0.232	.8mm Fine Stack	0.8mm	SMT	Open Pin				
6.00	0.236	.5mm Fine Mate	0.5mm	SMT	Open Pin				
6.00	0.236	.5mm Free Height	0.5mm	SMT	Open Pin				
6.00	0.236	.6mm Free Height	0.6mm	SMT	Open Pin				
6.00	0.236	.8mm Free Height	0.8mm	SMT	Open Pin				
6.00	0.236	AMPMODU 2mm	2.0mm	TH	Open Pin				
6.20	0.244	AMPMODU 2mm	2.0mm	TH-SMT	Open Pin				
6.35	0.250	AMPMODU 50/50	1.27mm	SMT	Open Pin				
6.50	0.256	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
6.55	0.258	AMPMODU 2mm	2.0mm	TH	Open Pin				
6.60	0.260	AMPMODU 2mm	2.0mm	SMT-TH	Open Pin				
6.60	0.260	MICTOR	0.6mm	SMT	Controlled Z				
6.70	0.264	AMPMODU 2mm	2.0mm	TH-SMT	Open Pin				
6.80	0.268	AMPMODU 2mm	2.0mm	SMT	Open Pin				
6.80	0.268	Micro-MaTch	1.27mm	SMT-TH	Open Pin				
6.90	0.272	AMPMODU 2mm	2.0mm	SMT-TH	Open Pin				
7.00	0.276	.5mm Free Height	0.5mm	SMT	Open Pin				
7.00	0.276	.6mm Free Height	0.6mm	SMT	Open Pin				
7.00	0.276	.8mm Fine Stack	0.8mm	SMT	Open Pin				
7.00	0.276	.8mm Free Height	0.8mm	SMT	Open Pin				
7.00	0.276	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
7.00	0.276	Micro-MaTch	1.27mm	TH-SMT	Open Pin				
7.10	0.280	AMPMODU 2mm	2.0mm	SMT	Open Pin				

PRODUCT SIZES

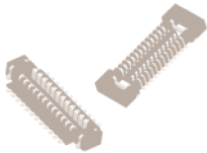
Mated Stack Height		Connector Description	Pitch	PCB Attach Method	Type	0-30 positions	31-100 positions	101-200 positions	More than 200 positions
mm	inch								
8.00	0.315	.5mm Free Height	0.5mm	SMT	Open Pin				
8.00	0.315	.6mm Free Height	0.6mm	SMT	Open Pin				
8.00	0.315	.8mm Free Height	0.8mm	SMT	Open Pin				
8.00	0.315	1mm Free Height	1.0mm	SMT	Open Pin				
8.00	0.315	MICTOR SB	0.8mm	SMT	Controlled Z				
8.00	0.315	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
8.00	0.315	Micro-MaTch	1.27mm	SMT	Open Pin				
8.13	0.320	AMPMODU 50/50	1.27mm	SMT	Open Pin				
9.00	0.354	.5mm Free Height	0.5mm	SMT	Open Pin				
9.00	0.354	.8mm Fine Stack	0.8mm	SMT	Open Pin				
9.00	0.354	.8mm Free Height	0.8mm	SMT	Open Pin				
9.00	0.354	1mm Free Height	1.0mm	SMT	Open Pin				
9.00	0.354	MICTOR	0.6mm	SMT	Controlled Z				
9.91	0.390	AMPMODU 50/50	1.27mm	SMT	Open Pin				
10.00	0.394	.6mm Free Height	0.6mm	SMT	Open Pin				
10.00	0.394	.8mm Free Height	0.8mm	SMT	Open Pin				
10.00	0.394	1mm Free Height	1.0mm	SMT	Open Pin				
10.00	0.394	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
10.50	0.413	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
10.92	0.430	Micro-Strip	1.27mm	TH	Controlled Z				
10.92	0.430	MICTOR	0.6mm	SMT	Controlled Z				
11.00	0.433	.5mm Free Height	0.5mm	SMT	Open Pin				
11.00	0.433	.6mm Free Height	0.6mm	SMT	Open Pin				
11.00	0.433	.8mm Free Height	0.8mm	SMT	Open Pin				
11.00	0.433	1mm Free Height	1.0mm	SMT	Open Pin				
11.00	0.433	1.25mm Fine Pitch	1.25mm	SMT	Open Pin				
11.00	0.433	MICTOR SB	0.8mm	SMT	Controlled Z				
11.43	0.45	AMPMODU System 50	1.27mm	TH	Open Pin				
11.94	0.47	AMPMODU System 50	1.27mm	TH-SMT	Open Pin				
12.00	0.472	.5mm Free Height	0.5mm	SMT	Open Pin				
12.00	0.472	.6mm Free Height	0.6mm	SMT	Open Pin				
12.00	0.472	.8mm Free Height	0.8mm	SMT	Open Pin				
12.00	0.472	1mm Free Height	1.0mm	SMT	Open Pin				
12.00	0.472	Industrial Express	0.8mm	SMT	Open Pin				
12.57	0.495	MICTOR	0.6mm	SMT	Controlled Z				
12.57	0.495	AMPMODU System 50	1.27mm	SMT-TH	Open Pin				
13.00	0.512	.6mm Free Height	0.6mm	SMT	Open Pin				
13.00	0.512	.8mm Free Height	0.8mm	SMT	Open Pin				
13.00	0.512	1mm Free Height	1.0mm	SMT	Open Pin				
13.08	0.515	AMPMODU System 50	1.27mm	SMT	Open Pin				
14.00	0.551	.6mm Free Height	0.6mm	SMT	Open Pin				
14.00	0.551	.8mm Free Height	0.8mm	SMT	Open Pin				
14.00	0.551	1mm Free Height	1.0mm	SMT	Open Pin				
14.00	0.551	MICTOR SB	0.8mm	SMT	Controlled Z				
15.00	0.591	.5mm Free Height	0.5mm	SMT	Open Pin				

PRODUCT SIZES

Mated Stack Height		Connector Description	Pitch	PCB Attach Method	Type	0-30 positions	31-100 positions	101-200 positions	More than 200 positions
mm	inch								
15.00	0.591	.6mm Free Height	0.6mm	SMT	Open Pin				
15.00	0.591	.8mm Free Height	0.8mm	SMT	Open Pin				
15.00	0.591	1mm Free Height	1.0mm	SMT	Open Pin				
15.00	0.591	Z-PACK 2mm HM	2.0mm	Press Fit	Open Pin				
15.00	0.591	STEP-Z Grid Array	Grid	BGA	Controlled Z				
15.00	0.591	Z-PACK TinMan 85ohm	1.9mm	Press Fit	Controlled Z				
15.61	0.615	MICTOR	0.6mm	SMT	Controlled Z				
16.00	0.630	.5mm Free Height	0.5mm	SMT	Open Pin				
16.00	0.630	.6mm Free Height	0.6mm	SMT	Open Pin				
16.00	0.630	.8mm Free Height	0.8mm	SMT	Open Pin				
16.00	0.630	MICTOR SB	0.8mm	SMT	Controlled Z				
16.00	0.630	Z-PACK TinMan	1.9mm	Press Fit	Controlled Z				
16.00	0.630	Industrial Express	0.8mm	SMT	Open Pin				
16.66	0.656	Eurocard (Din)	2.54mm	TH	Open Pin				
16.75	0.659	Micro Stack	0.6mm	SMT	Open Pin				
17.00	0.669	.8mm Free Height	0.8mm	SMT	Open Pin				
17.00	0.669	STEP-Z Grid Array	Grid	BGA	Controlled Z				
17.70	0.697	Z-PACK Futurebus +	2.0mm	Press Fit	Open Pin				
17.96	0.707	MICTOR	0.6mm	SMT	Controlled Z				
18.00	0.709	.6mm Free Height	0.6mm	SMT	Open Pin				
18.00	0.709	.8mm Free Height	0.8mm	SMT	Open Pin				
18.00	0.709	MICTOR	0.6mm	SMT	Controlled Z				
18.00	0.709	STEP-Z Grid Array	Grid	BGA	Controlled Z				
18.00	0.709	Micro-Strip	1.27mm	TH	Controlled Z				
18.00	0.709	Z-PACK HM-Zd	2.5mm	Press Fit	Controlled Z				
18.75	0.738	MICTOR	0.6mm	SMT	Controlled Z				
19.00	0.748	.8mm Free Height	0.8mm	SMT	Open Pin				
19.00	0.748	Micro Stack	0.6mm	SMT	Open Pin				
19.00	0.748	MICTOR SB	0.8mm	SMT	Open Pin				
20.00	0.787	.6mm Free Height	0.6mm	SMT	Open Pin				
20.00	0.787	.8mm Free Height	0.8mm	SMT	Open Pin				
20.00	0.787	MICTOR	0.6mm	SMT	Controlled Z				
20.00	0.787	STEP-Z Grid Array	Grid	BGA	Controlled Z				
21.00	0.787	STEP-Z Grid Array	Grid	BGA	Controlled Z				
21.60	0.827	MICTOR	0.6mm	SMT	Controlled Z				
22.00	0.866	MICTOR SB	0.8mm	SMT	Controlled Z				
22.86	0.900	MICTOR	0.6mm	SMT	Controlled Z				
23.00	0.906	STEP-Z Grid Array	Grid	BGA	Controlled Z				
23.00	0.906	Z-PACK HS3	25mm	Press Fit	Controlled Z				
24.00	0.945	STEP-Z Grid Array	Grid	BGA	Controlled Z				
25.00	0.984	MICTOR SB	0.8mm	SMT	Controlled Z				
25.00	0.984	STEP-Z Grid Array	Grid	BGA	Controlled Z				
26.00	1.020	STEP-Z Grid Array	Grid	BGA	Controlled Z				
26.00	1.024	Micro Stack	0.6mm	SMT	Open Pin				
27.00	1.063	MICTOR	0.6mm	SMT	Controlled Z				
27.00	1.063	STEP-Z Grid Array	Grid	BGA	Controlled Z				

Mated Stack Height		Connector Description	Pitch	PCB Attach Method	Type (Open Pin or Controlled Z)	0-30 positions	31-100 positions	101-200 positions	More than 200 positions
mm	inch								
27.80	1.094	MICTOR	0.6mm	SMT	Controlled Z				
28.00	1.102	STRADA Mesa	Grid	Press Fit	Controlled Z				
28.00	1.102	STEP-Z Grid Array	Grid	BGA	Controlled Z				
29.00	1.142	MICTOR	0.6mm	SMT	Controlled Z				
30.00	1.181	MICTOR SB	0.8mm	SMT	Controlled Z				
30.00	1.181	STEP-Z Grid Array	Grid	BGA	Controlled Z				
30.00	1.181	Micro Stack	0.6mm	SMT	Open Pin				
31.00	1.220	STEP-Z Grid Array	Grid	BGA	Controlled Z				
31.12	1.220	Micro-Strip	1.27mm	TH	Controlled Z				
31.88	1.255	MICTOR	0.6mm	SMT	Controlled Z				
35.00	1.378	STEP-Z Grid Array	Grid	BGA	Controlled Z				
36.00	1.417	STEP-Z Grid Array	Grid	BGA	Controlled Z				
38.94	1.533	Micro-Strip	1.27mm	TH	Controlled Z				
40.00	1.575	STEP-Z Grid Array	Grid	BGA	Controlled Z				

FINE PITCH SMT STACKING CONNECTORS (PARALLEL BOARD-TO-BOARD)



0.4mm Fine Stack Connectors

- 0.4mm contact pitch
- 1.0mm and 1.5mm stacking heights
- 20 to 90 positions



Eurocard (Din)

- 0.4mm contact pitch
- 1.0mm and 1.5mm stacking heights
- 20 to 90 positions



0.5mm Fine Stack Connectors

- 0.5mm contact pitch
- 1.5mm stacking height
- 20 to 80 positions



0.8mm Fine Stack Connectors

- 0.8mm contact pitch
- 3.0mm stacking height
- 14 to 50 positions



0.8mm Fine Mate Connectors

- 0.8mm contact pitch
- 4.0mm and 4.5mm stacking heights
- 10 to 60 positions



0.8mm Fine Mate Connectors

- 0.8mm contact pitch
- 4.0mm and 4.5mm stacking heights
- 10 to 60 positions



0.5mm Fine Mate Connectors

- 0.5mm contact pitch
- 4.0mm to 6.0mm stacking heights
- 16 to 100 positions
- Right angle options



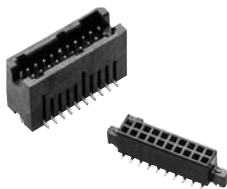
0.5mm Free Height (FH) Connectors

- 0.5mm contact pitch
- 5.0mm to 16mm stacking heights
- 120 to 440 positions



1.25mm Centerline Fine Pitch Connectors

- 1.25mm fine pitch
- 5mm to 11mm stacking heights
- 4 to 30 positions
- Pin and socket



AMPMODU 50/50 Grid Connectors

- 1.27mm (.050") contact pitch
- 6.35mm (.250"), 8.13mm (.320") and 9.91mm (.390") stacking heights
- 10 to 100 positions



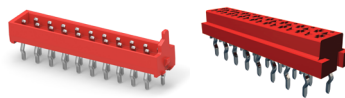
0.6mm Free Height (FH) Connectors

- 0.6mm contact pitch
- 4.0mm to 16mm stacking heights
- 50 to 320 positions
- Grounded (GIGA) versions



0.8mm Free Height (FH) Connectors

- 0.8mm contact pitch
- 5.0mm to 16mm stacking heights
- 40 to 200 positions



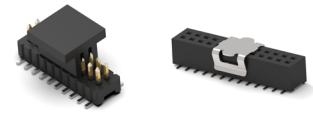
Micro-MaTch

- 1.27mm contact pitch
- 5.8mm - 8.0mm stacking height
- 4 to 20 positions



MICTOR Connectors

- 0.635mm (.025") contact pitch
- 6.6mm to 22.86mm (.260" to .900") stacking heights
- 38 to 266 positions
- Matched impedance



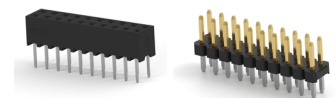
AMPMODU Small Centerline

- 1.0mm contact pitch
- 4.6mm stacking height
- 4 to 100 positions



MICTOR SB Connectors

- 0.8mm pitch
- 5mm to 30mm stacking heights
- 40 to 200 positions
- Controlled impedance



AMPMODU 2mm

- 2.0mm contact pitch
- 6mm - 7.1mm stacking heights
- 4 to 50 positions



1.0mm FH (IEEE 1386) Connectors

- 1.0mm contact pitch
- 8.0mm to 15mm stacking heights
- 64 and 84 positions



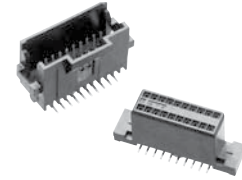
STRADA Mesa Connectors

- 3.1 x 2.6 grid
- 8mm to 42mm stacking heights
- 130 to 518 positions
- Controlled impedance
- Power options



Micro-Strip Connectors

- 1.27mm (.050") pitch
- 10.92mm to 38.94mm stacking heights
- 40 to 240 positions
- Controlled impedance



AMPMODU System 50 Connectors

- 1.27mm x 2.54mm contact pitch
- 11.43mm - 13.08mm stacking height
- 10 to 100 positions



Z-PACK TinMan & Z-PACK TinMan 85ohm Connectors

- 1.9mm Pitch
- 15mm, 16mm and 39mm stacking heights
- 24 different pair minimum
- Controlled impedance
- End-to-end stackable



STEP-Z Grid Array Connectors

- 1 x 0.65 grid
- 15mm to 40mm stacking heights
- 104, 200, 296 positions
- Controlled impedance



Z-PACK 2mm HM Connectors

- 2mm pitch
- 15mm stacking height
- 55 positions minimum
- End-to-end stackable



Industrial Express

- 0.8mm contact pitch
- 16mm and 12mm stacking heights
- 160 positions



Micro Stack

- 0.6mm contact pitch
- 16.75mm - 30.0mm stacking heights
- 80 positions



Z-PACK Futurebus+ Connectors

- 2mm pitch
- 17.7mm stacking height
- 24 positions minimum
- End-to-end stackable



Z-PACK HM-Zd Connectors

- 2.5mm pitch
- 18mm stacking height
- 40 different pairs minimum
- End-to-end stackable
- Controlled impedance

Z-PACK HS3 Connectors

- 2.5mm pitch
- 23mm stacking height
- 30 positions minimum
- Controlled impedance
- End-to-end stackable

STACKING CONNECTORS

Once you have determined which connector description best suits your needs (using the chart on pages 3 to 6 of this document), use the chart below to find a part number to search the TE website.

Connector Description	Representative Part Numbers	
	Plug	Receptacle
.4mm Fine Stack	2-1871566-4	2-1747769-4
.5mm Fine Mate	1565359-1	1565357-1
.5mm Fine Stack	7-5353164-6	7-5353159-5
.5mm Free Height	3-6318491-6	3-6318490-6
.6mm Free Height	1-5353184-0	1-5353190-0
.8mm Fine Mate	2-5917407-2	2-5917408-2
.8mm Fine Stack	1-179396-2	1-179397-2
.8mm Free Height	5177983-4	5177984-4
1mm Free Height	5120528-1	5120534-1
AMPMODU 50/50	5-104693-2	5-104652-2
AMPMODU System 50	5-147377-3	5-104550-4
Eurocard (Din)	650889-1	5353032-4
Micro-Strip	5536280-1	5536279-1
MICTOR	5767007-8	2-5767004-2
MICTOR SB	1658013-1	1658012-1
STEP-Z Grid Array	6-1761714-3	5-1761715-5
STRADA Mesa	2-2057470-8	2057471-1
Z-PACK 2mm HM	100143-1	106773-1
Z-PACK Futurebus+	223002-1	223652-1
Z-PACK HM-Zd	1469002-1	1469362-1
Z-PACK TinMan	1934312-1	1934544-1
Z-PACK TinMan 85ohm	1934948-1	1934949-1
1.25 mm Centerline Fine Pitch	4-176890-6	4-175630-6
Z-PACK HS3	120732-1	120948-1
Micro Stack	6376611-1	6376608-1
Industrial Express	2069917-2	2069395-2
AMPMODU 2mm	2842125-8	2307776-8
Micro-MaTch	338728-4	215079-4
AMPOMODU Small Centerline	2-2331928-5	2-2267440-5

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[Link](#)

Do a keyword search for Parallel (Stacking) configuration or follow the breakdown below.

BREAKDOWN FROM MAIN PAGE



FOR MORE INFORMATION

TE Technical Support Center

USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico	+52 (0) 55-1106-0800
Latin/S. America:	+54 (0) 11-4733-2200
Germany:	+49 (0) 6251-133-1999
UK:	+44 (0) 800-267666
France:	+33 (0) 1-3420-8686
Netherlands:	+31 (0) 73-6246-999
China:	+86 (0) 400-820-6015

Part numbers in this brochure are RoHS Compliant*, unless marked otherwise.

*as defined www.te.com/leadfree

te.com

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