

Metabee DeMax Series High-speed Backplane Connector System Catalog

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1. Introduction

The DeMax Series High-Speed Backplane System is a collection of high-density interconnect components intended for use in electronic devices requiring fast data transfers. It maintains two dependable points of contact at all times and minimizes residual stubs for better signal integrity performance. Meanwhile, it offers low mating force and excellent contact normal force. Signal wafers include a one-piece, embossed ground construction that reduces crosstalk. It Supports 64 Gbps PAM4 (32 Gbps NRZ) applications and is PICe[®] 6.0/CXL[™] 3.1 capable.

The DeMAX Series is a high-performance electrical connector system designed for backplane, coplanar, and orthogonal applications. Backplane applications utilize a right-angle receptacle (EBTF-RA) and a vertical header (EBTM-VT). Coplanar and orthogonal applications use a right-angle header (EBTM-RA) and a right-angle receptacle (EBTF-RA).

2. Features:

- Compatible with SAMTEC's ExaMax series connectors;
- Meets industry specifications such as PCI Express®, Intel OPI and VPI, SAS, SATA, Fibre Channel, InfiniBand™ and Ethernet;
- 85Ω matched differential impedance for ensuring signal integrity;
- Meet bandwidth requirements ranging from 25Gbps to 56Gbps;
- Supports 64 Gbps PAM4 (32 Gbps NRZ) applications;
- PCIe® 6.0/CXL™ 3.1 capable;
- Exceeds OIF CEI-28G-LR specification for 28 Gbps standards;
- 24 - 72 pair designs (4 and 6 pairs; 6, 8, 10 and 12 columns);
- Wafer design increases isolation for reduced crosstalk;
- Press-fit tails provide a reliable electrical connection.

3. Key Specifications:

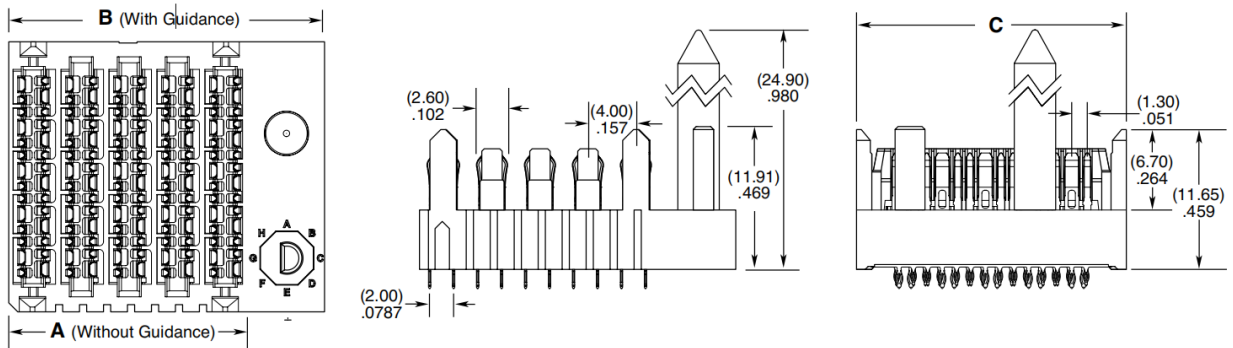
Product Type	High-speed Board-to-board Connector
Series:	EBTM/EBTF/EBDM
Insulator Material:	Liquid Crystal Polymer
Contact Material:	Copper Alloy
Plating:	Sn or Au over 50 μ" (1.27 μm) Ni
Temperature Range:	-55 °C to +105 °C
Current Rating:	4 A per pin
Voltage Rating:	150V AC
Lead-free Solderable:	Yes

4. How to Order

DeMax 2.00 mm High-Speed Backplane Vertical & Right-angle Header: EBTM, EBTM-RA

Part Number Example	EBTM	-4	-06	-2.0	-S	-VT	-1	-L	-A
Series Prefix									
No. of Pairs Per Column:		-4 = 4 Pairs; -6 = 6 Pairs							
Columns:		-06, -08, -10, -12 (12 column only available in -6 pairs)							
Column Pitch:		-2.0 = (2.0 mm) .0787"							
Plating:		-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail							
Orientation:		-VT = Vertical; -RA = Right-Angle							
Guidance:		(Leave Blank for no Guidance)							
		-L = Left Guidance; -R = Right Guidance							
Keying:		(Only available with -L or -R Guidance)							
		(Leave Blank for no Keying)							

(1) EBTM

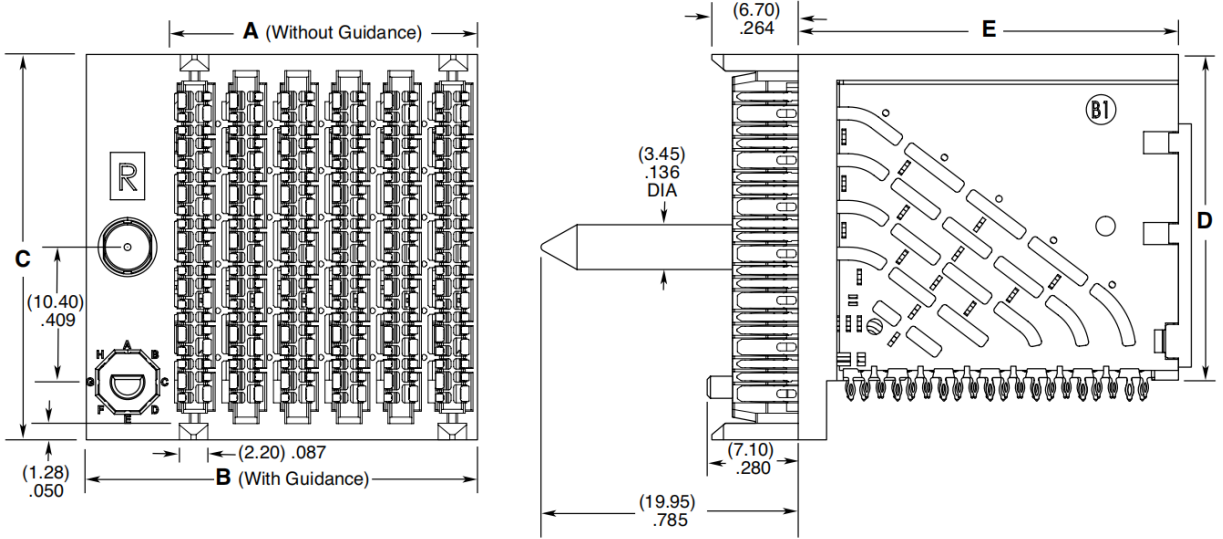


		KEYING(VT)							
		-A	-B	-C	-D	-E	-F	-G	-H
-L / -R									

COLUMNS	A	B
-06	(11.90) .469	(18.35) .722
-08	(15.90) .626	(22.35) .880
-10	(19.90) .783	(26.35) 1.037
-12	(23.90) .941	(30.35) 1.195

NO. OF PAIRS PER COLUMN	C
-4	(22.50) .886
-6	(29.70) 1.169

(2) EBTM-RA

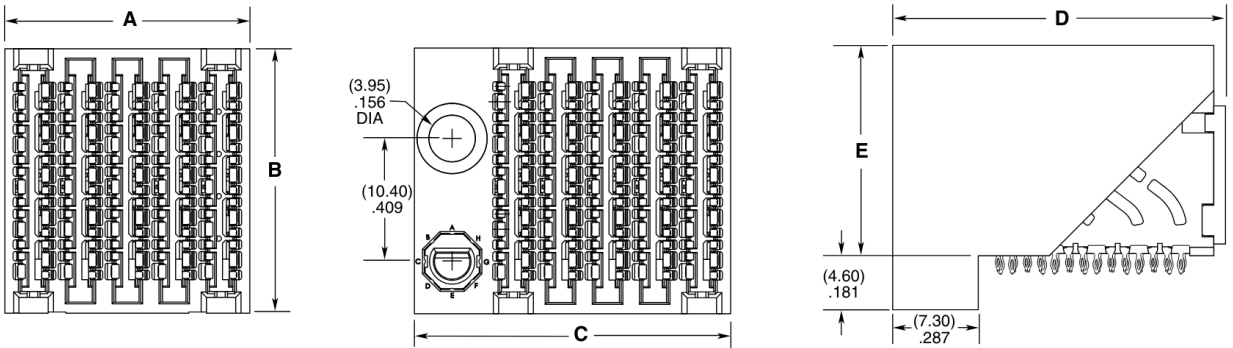


KEYING(RA)								
	-A	-B	-C	-D	-E	-F	-G	-H
-L / -R								

COLUMNS	A	B	NO. OF PAIRS PER COLUMN	C	D	E
-06	(11.90) .469	(18.35) .722				
-08	(15.90) .626	(22.35) .880	-4	(22.50) .886	(17.90) .705	(23.30) .917
-10	(19.90) .783	(26.35) 1.037	-6	(29.70) 1.169	(25.10) .988	(30.50) 1.201
-12	(23.90) .941	(30.35) 1.195				

DeMax 2.00 mm High-Speed Backplane Right-Angle Receptacle: EBTF-RA

Part Number Example	EBTF	-4	-06	-2.0	-S	-RA	-1	-L	-A
Series Prefix									
No. of Pairs Per Column:		-4 = 4 Pairs; -6 = 6 Pairs							
Columns:		-06, -08, -10, -12 (-12 column only available in -6 pairs)							
Column Pitch:		-2.0 = (2.0 mm) .0787"							
Plating:		-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail							
Orientation:		-RA = Right-Angle							
-									
Guidance:		(Leave Blank for no Guidance)							
		-L = Left Guidance; -R = Right Guidance							
Keying:		(Only available with -L or -R Guidance)							
		(Leave Blank for no Keying)							
		-A thru -H = Position of flat on Key							



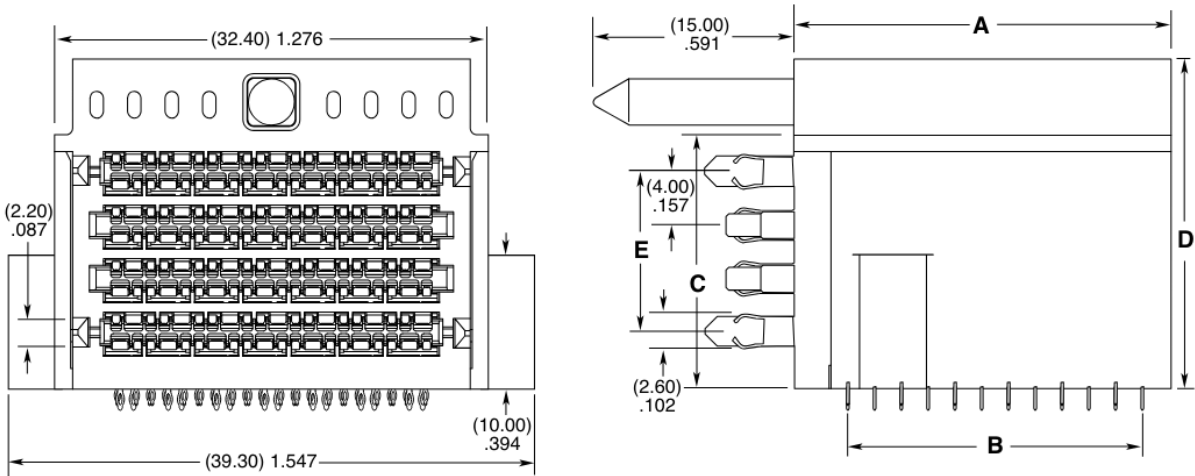
KEYING(RA)								
-L / -R	-A	-B	-C	-D	-E	-F	-G	-H

NO. OF COLUMNS	A	C
-06	(12.90) .508	(18.85) .742
-08	(16.90) .665	(22.85) .900
-10	(20.90) .823	(26.85) 1.057
-12	(24.90) .980	(30.85) 1.215

NO. OF PAIRS PER COLUMN	B	D	E
-4	(22.50) .886	(28.40) 1.118	(17.90) .705
-6	(29.70) 1.169	(35.60) 1.402	(25.10) .988

DeMax 2.00 mm Direct Mate Orthogonal Header: EBDM-RA

Part Number Example	EBDM	-4	-06	-2.0	-S	-RA	-1	-G	-S
Series Prefix									
No. of Pairs Per Column: -6 = 6 Pairs									
Columns: -06, -08, -10, -12									
Column Pitch: -2.0 = (2.0 mm) .0787"									
Plating: -S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail									
Orientation: -RA = Right-Angle									
-									
Guidance: (Leave Blank for no Pin)									
-G = Guide Pin									
Screw Mount: (Leave Blank for no Screw Mount)									
-S = Screw Mount									



COLUMNS	A	B	C (without -G)	D (with -G)	E
-06	(16.15) .636	(10.00) .394	(15.00) .591	(20.65) .813	(8.00) .315
-08	(20.15) .793	(14.00) .551	(19.00) .748	(24.65) .970	(12.00) .472
-10	(24.15) .951	(18.00) .709	(23.00) .906	(28.65) 1.128	(16.00) .630
-12	(28.15) 1.108	(22.00) .866	(27.00) 1.063	(32.65) 1.285	(20.00) .787

5. Applications:

The DeMax high-speed backplane system finds applications in various industries due to its ability to handle high data speeds and provide reliable connections. Here are some of the common applications:

- 5G Networking;
- Medical Devices;
- Automotive Industry;
- Industrial Automation;
- Test and Instrumentation;
- Military and Aerospace;
- Artificial Intelligence and Machine Learning.

Thank You!