

# CABLINE®-CAP

64 Gbps PAM4,  
0.4 mm pitch, horizontal mating type micro-coaxial cable assembly

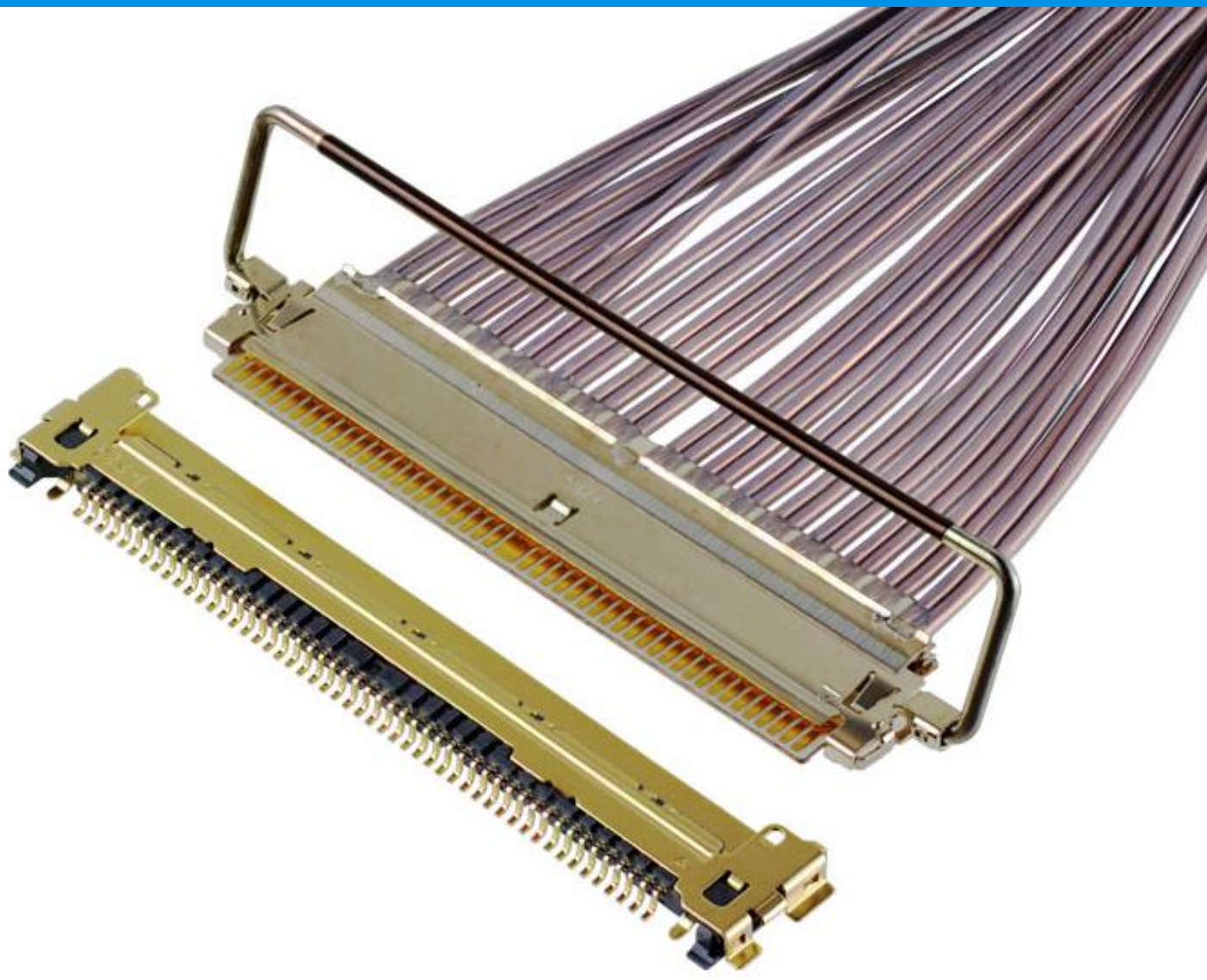
Product Specifications:

Mating type		Horizontal
Board Pitch (mm)		0.4
Wiping Length (mm)		0.54
Mated size (mm)	Height	1.35 Max
	Width	Formula: 5.75mm + (0.4mm* # of pins)
	Depth	6.86
Pin Counts	Range	Up to 60
	Available	50 (16 differential pair Max)

Applicable Cable Size:

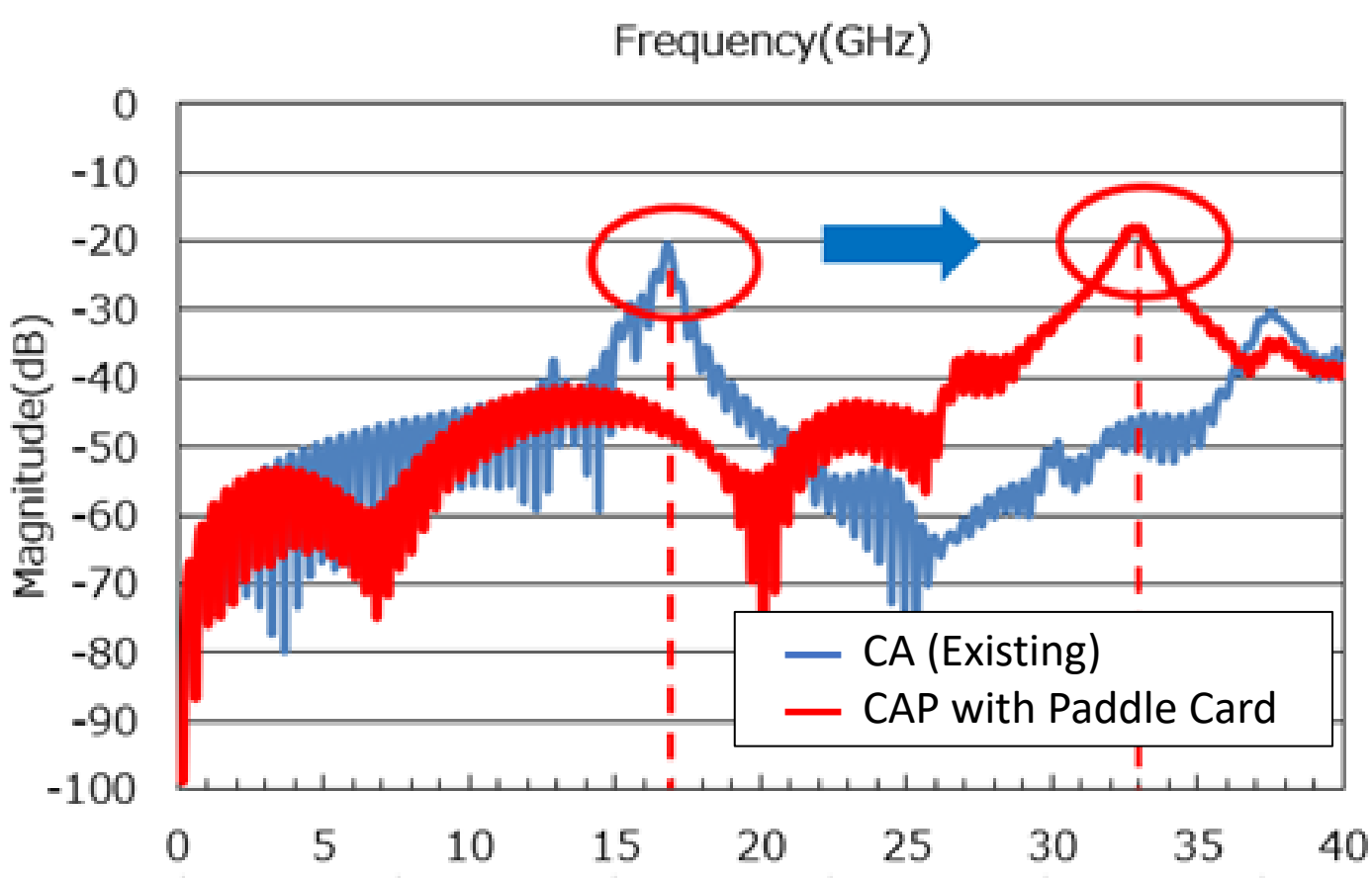
Maximum O.D. (mm)	0.47
Micro-Coaxial For Signal (AWG)	Diff 90 ohm: #38

\*CABLINE®-CAP is the name of the harness product. Receptacle is CABLINE®-CA (PN 20525-#50E-02).  
\*Please inquire for pin counts not listed or outside of the pin count range.  
\*PLUG is supplied as a harnessed product. Cable length can be customized as desired.

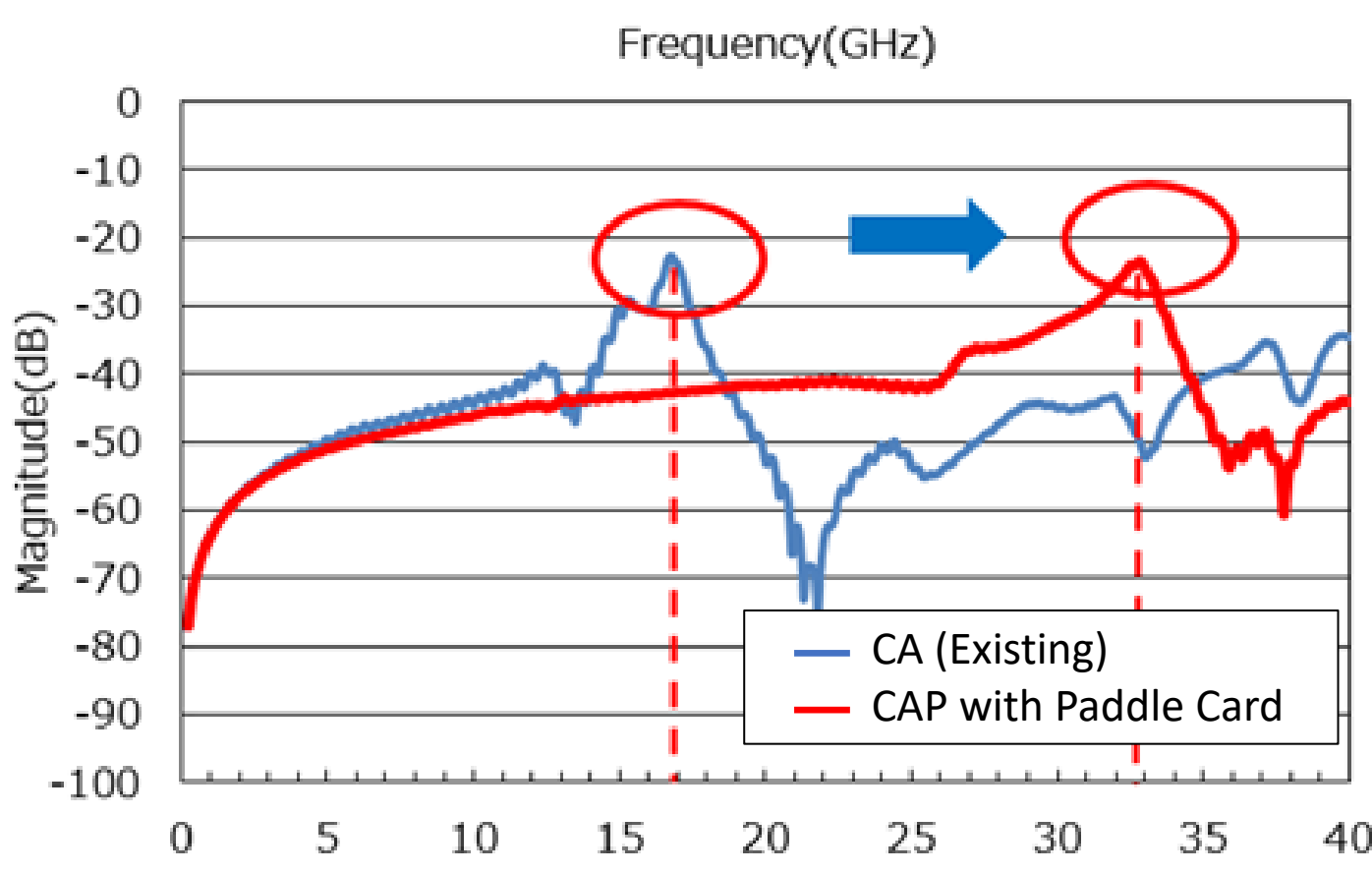


## High-speed transmission for 64 Gbps/lane PAM4 with Paddle Card Technology

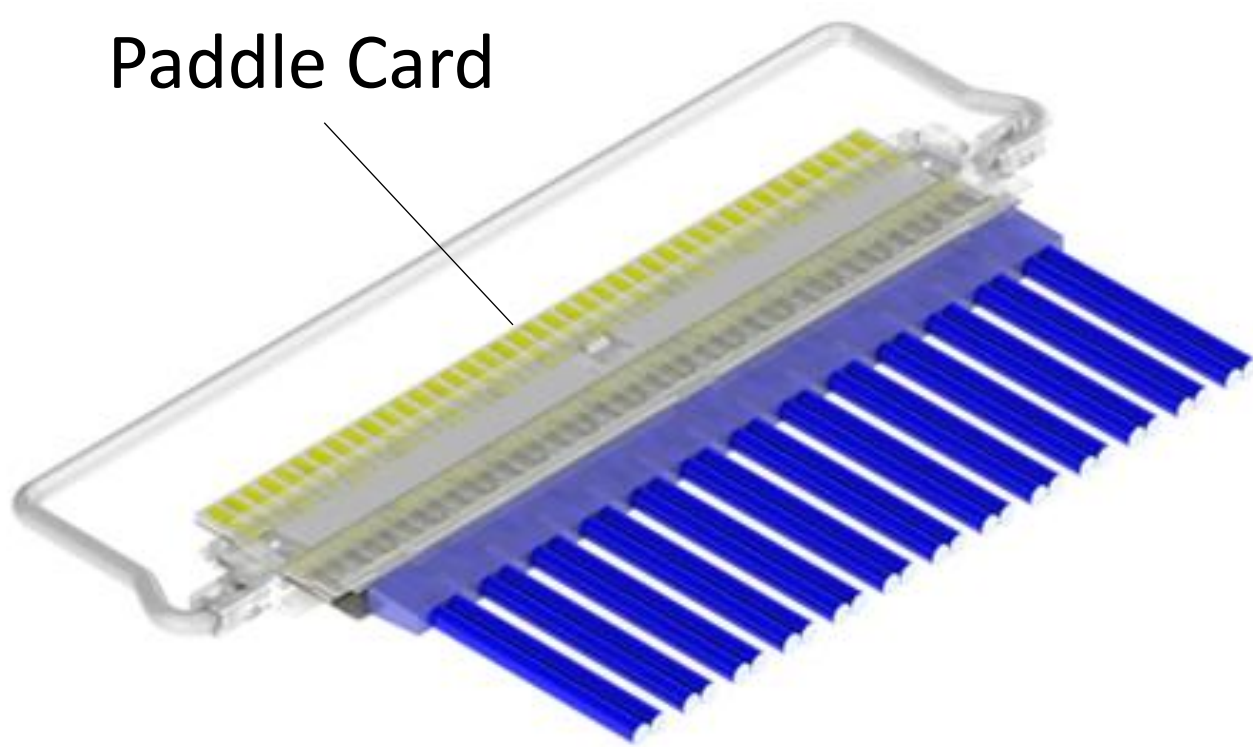
Signal quality is improved by adopting a paddle card in the cable plug section.  
This enables even faster transmission from the existing CABLINE series.



Near End Cross Talk

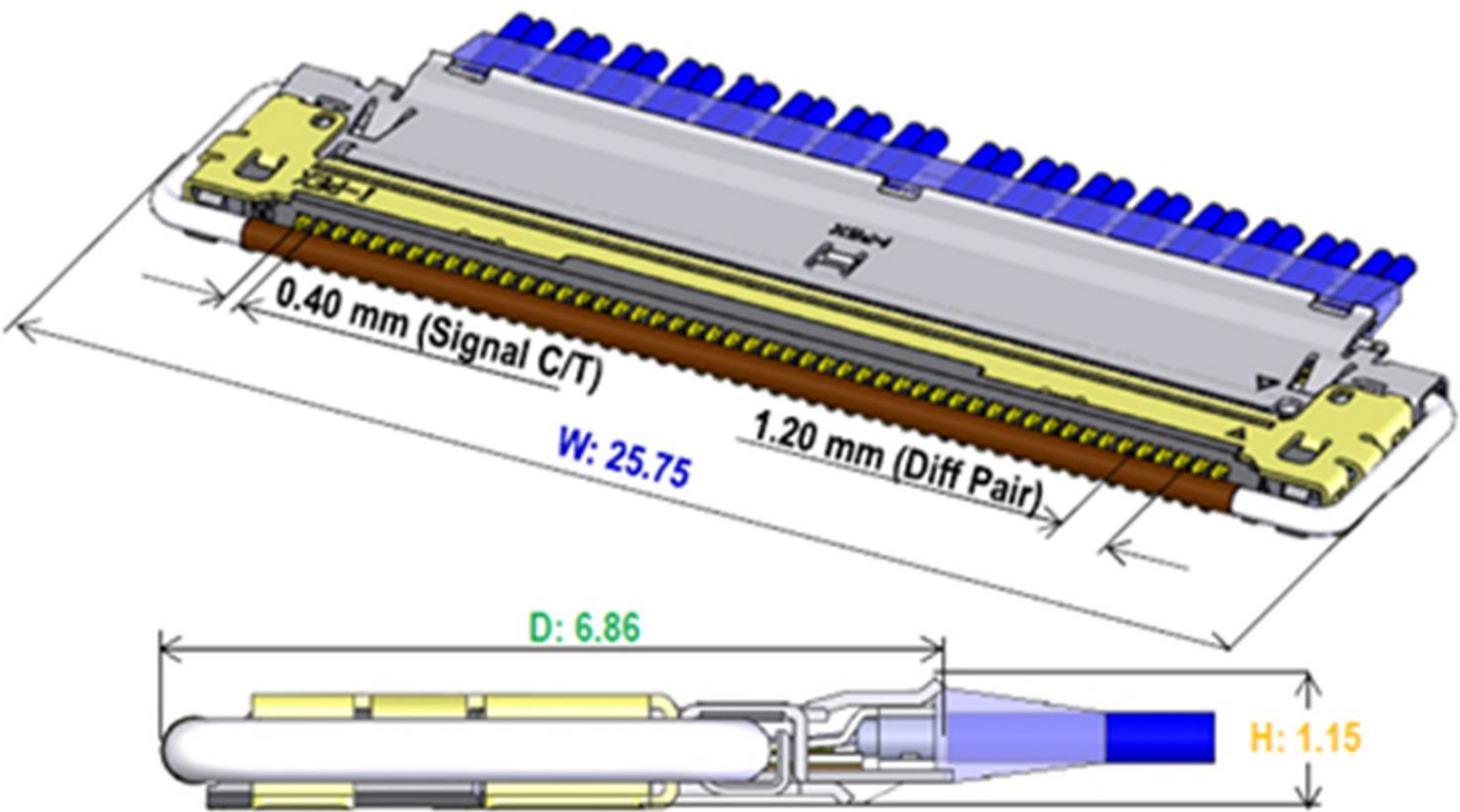


Far End Cross Talk

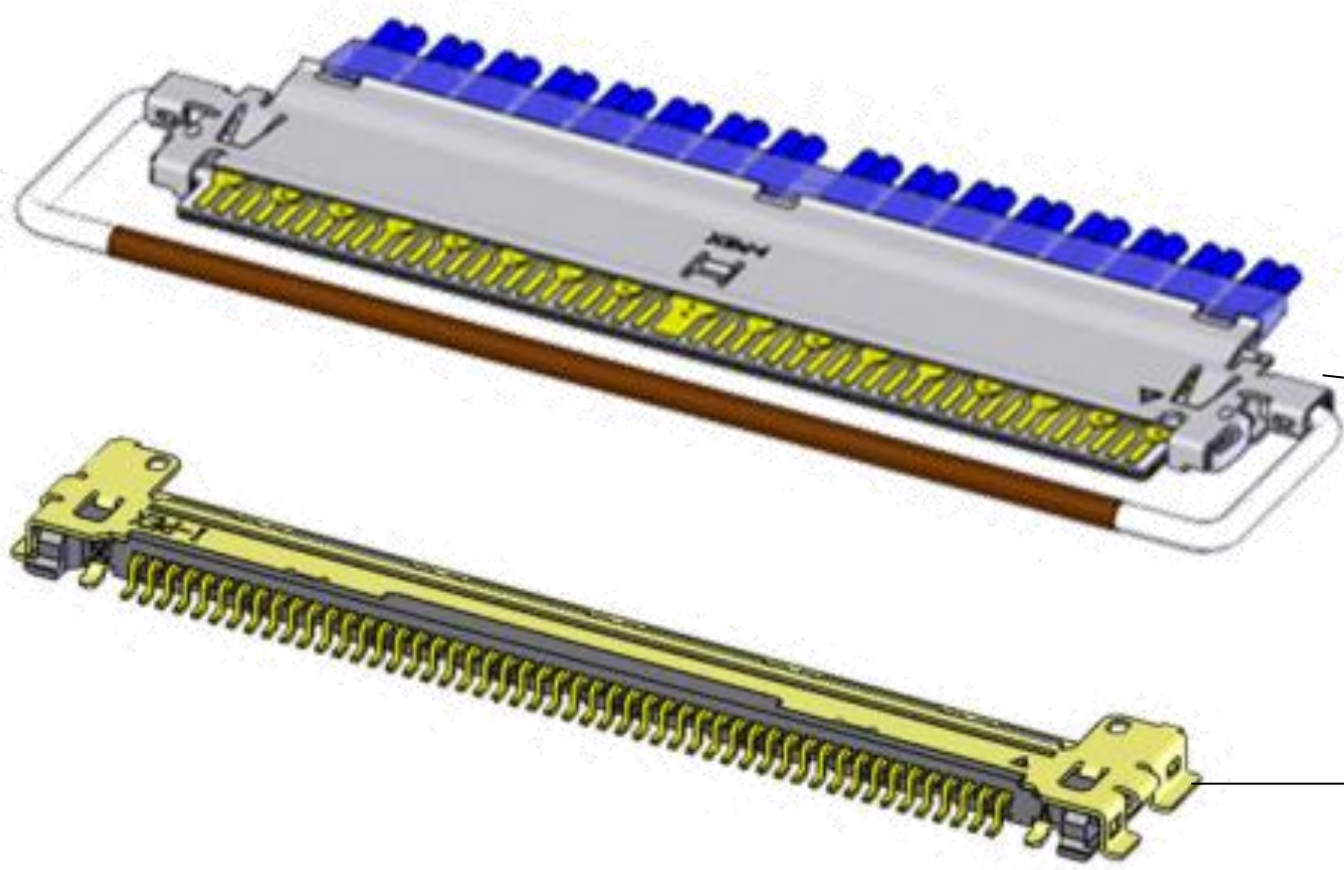


Technical page of paddle card  
<https://www.i-pex.com/library/white-papers/paddle-card-technology>

## Low profile, ideal for space-constrained applications H=1.15 mm



Mating condition



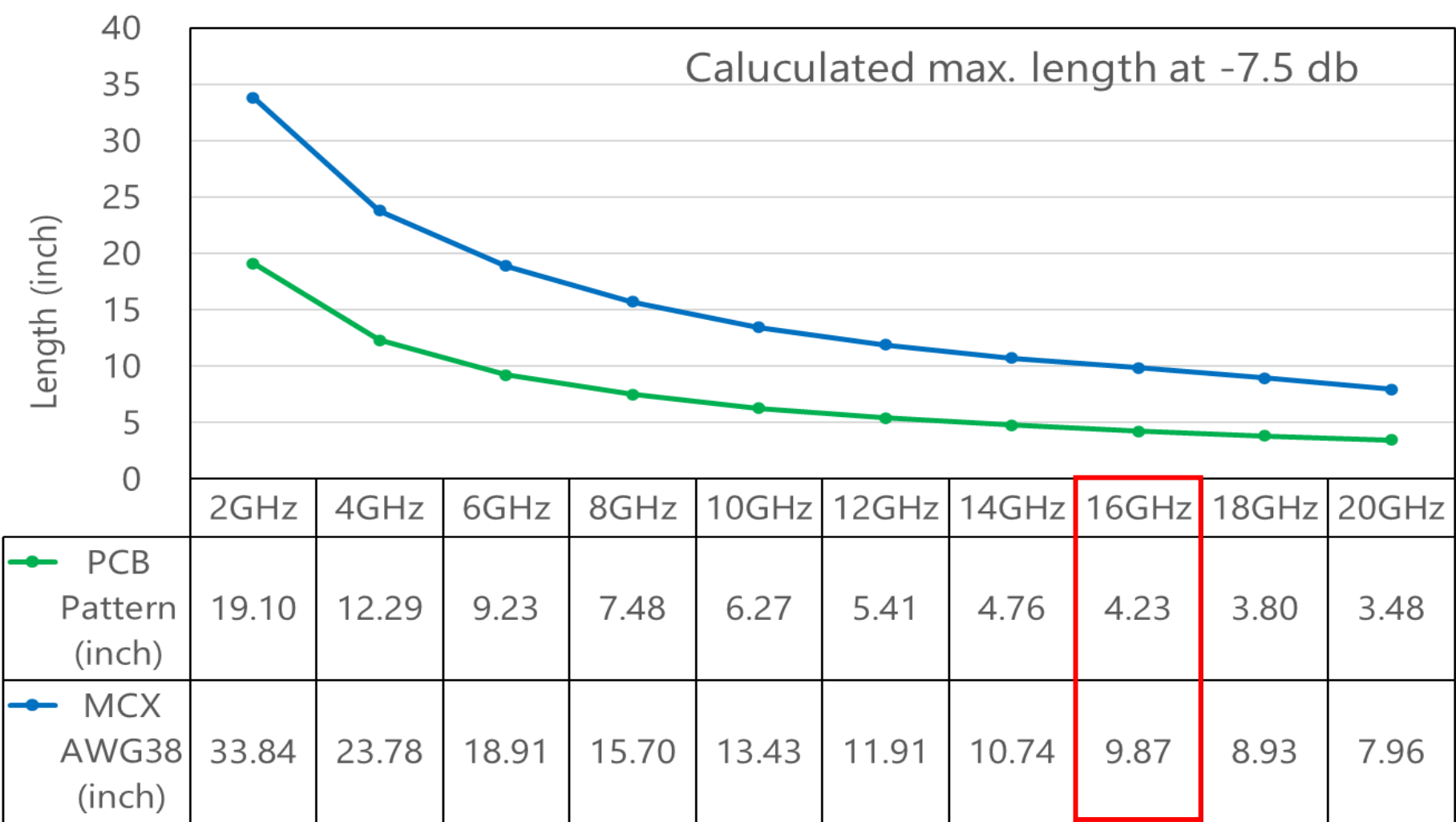
Un-Mating condition

Plug:  
CABLINE®-CAP harness

Receptacle:  
CABLINE®-CA receptacle  
(PN 20525-#50E-02)

## LEAPWIRE® jumper solution for micro-coaxial cable



Cable jumper harnesses are more advantageous than PCB in terms of transmission.  
Transmission distance comparison of Low-Loss PCB (Dk3.7) vs CABLINE-CAP® harness (Micro-coaxial cable)  
Micro-coaxial Cable can transmit approximately 2.3 times farther in the 16 GHz band than Low-Loss PCB (Dk3.7) transmission.





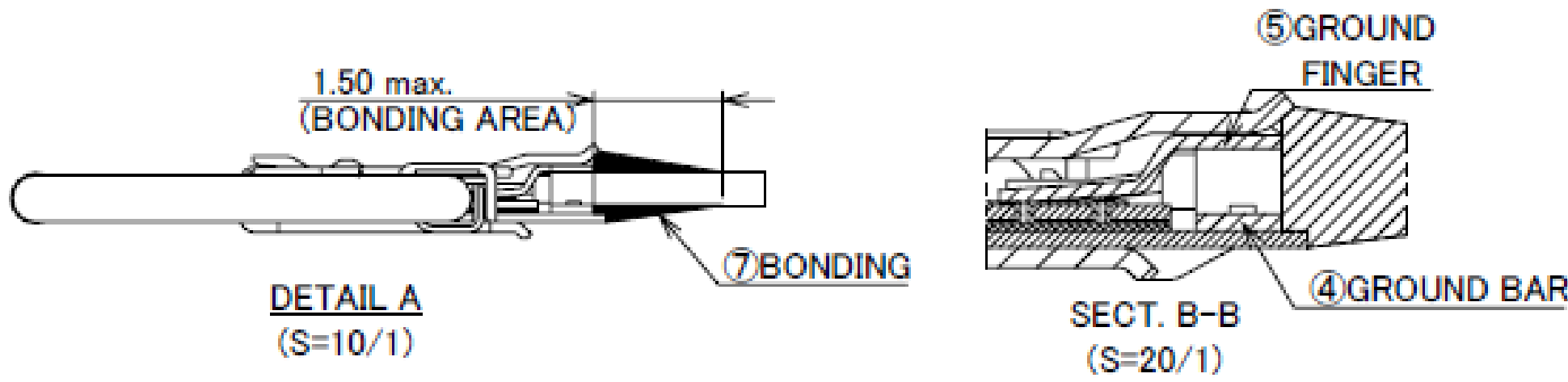
# Component Parts Details

## Component Parts

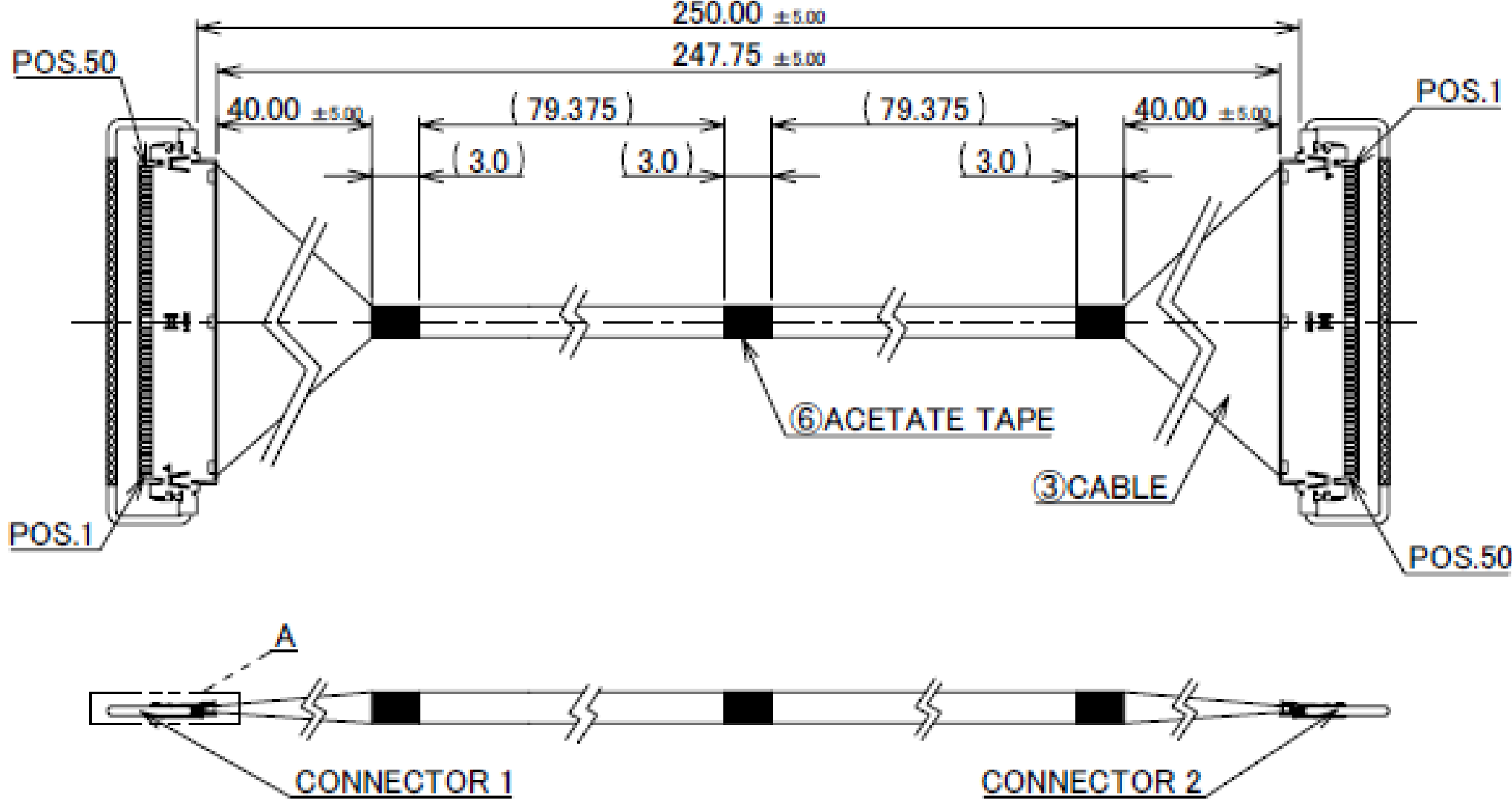
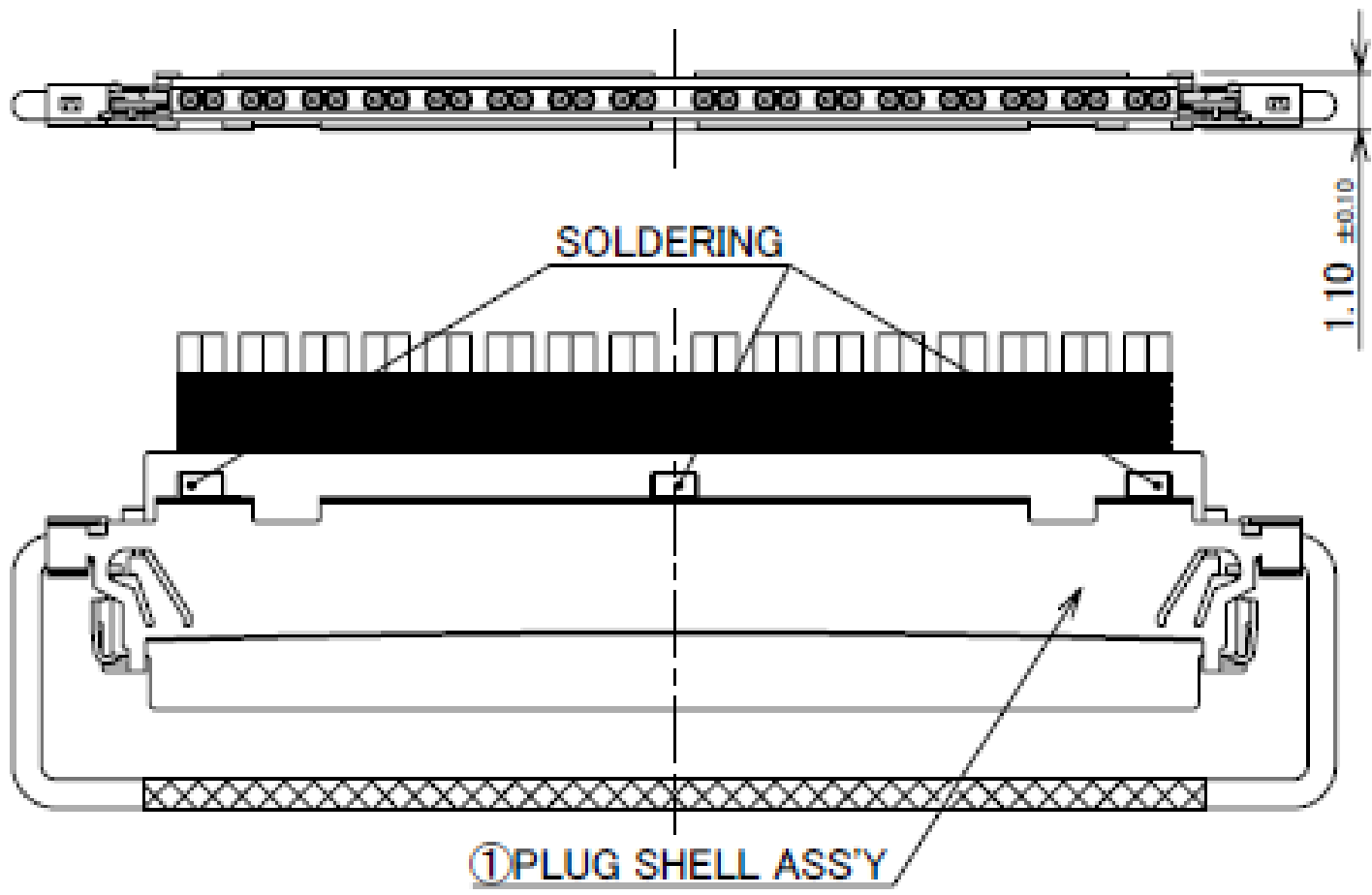
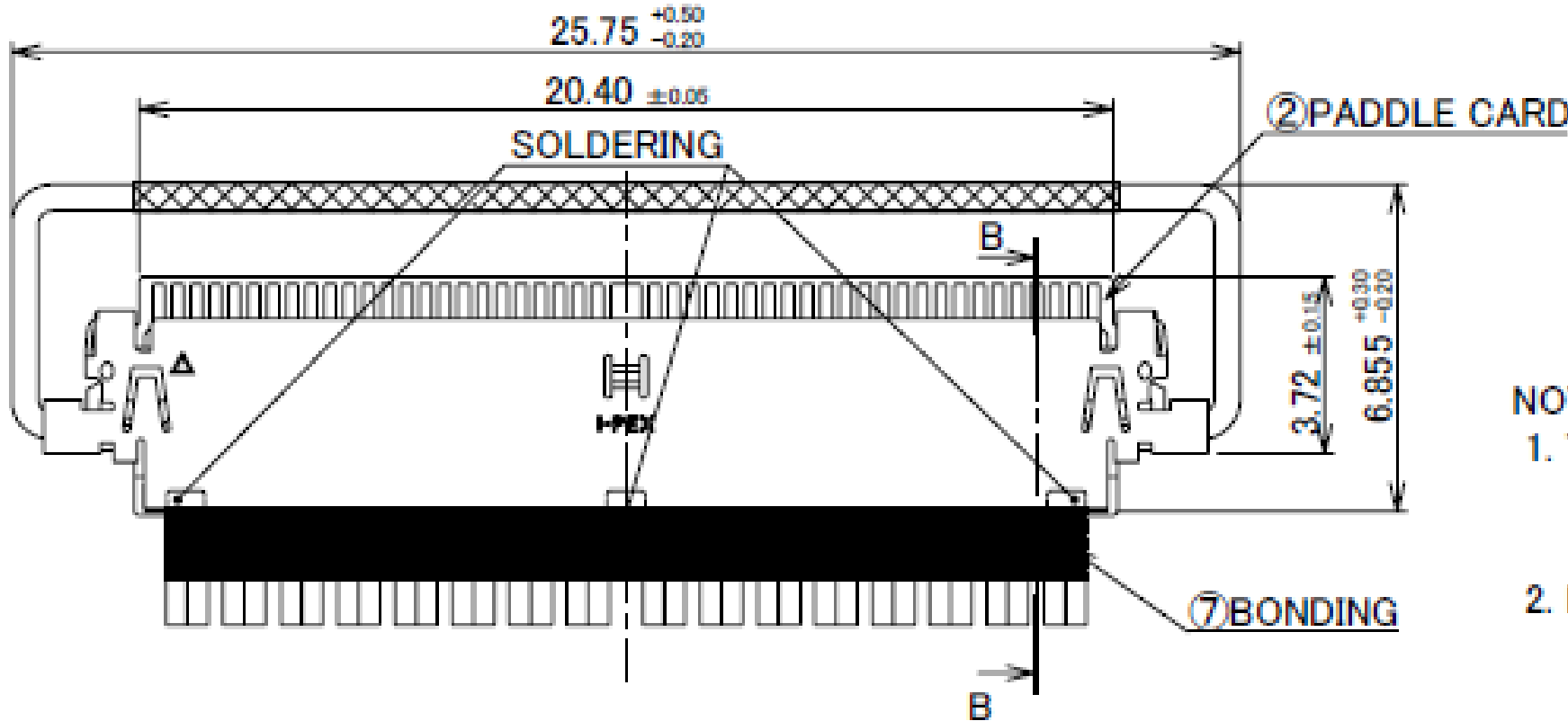
Connector parts	
	
PLUG Harness	RECEPTACLE

Plug Harness Assembly

I-PEX PART NO.	HARNESS LENGTH
81863-100B-01	250



CONNECTOR 1&2  
(S=5/1)

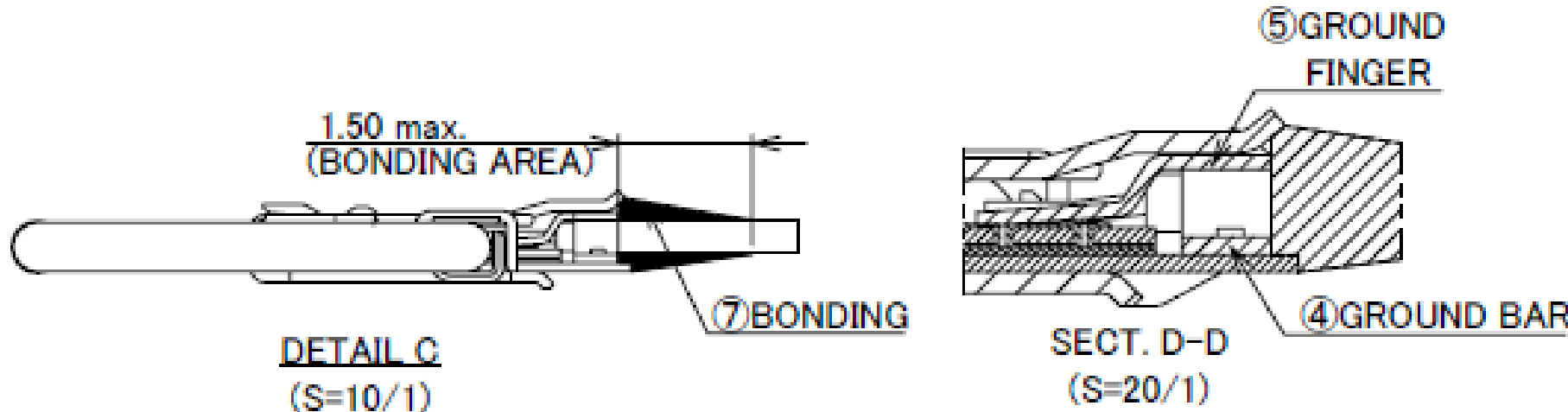


- NOTE.
- 1. TO HANDLE THIS CONNECTOR :  
YOU MUST READ AND FOLLOW THE INSTRUCTION MANUAL BELOW.  
I-PEX INSTRUCTION MANUAL No.HIM-23013.
  - 2. ELECTRIC CHARACTERISTICS  
WITHSTANDING VOLTAGE: AC 250V LEAKAGE CURRENT 2.0mA MAX.  
INSULATION RESISTANCE: 50MΩ MIN. DC 100V
  - 3. THE OPERATING TEMPERATURE OF THE HARNESS: 80°C MAX.
  - 4. MINIMUM HARNESS LENGTH: 85mm

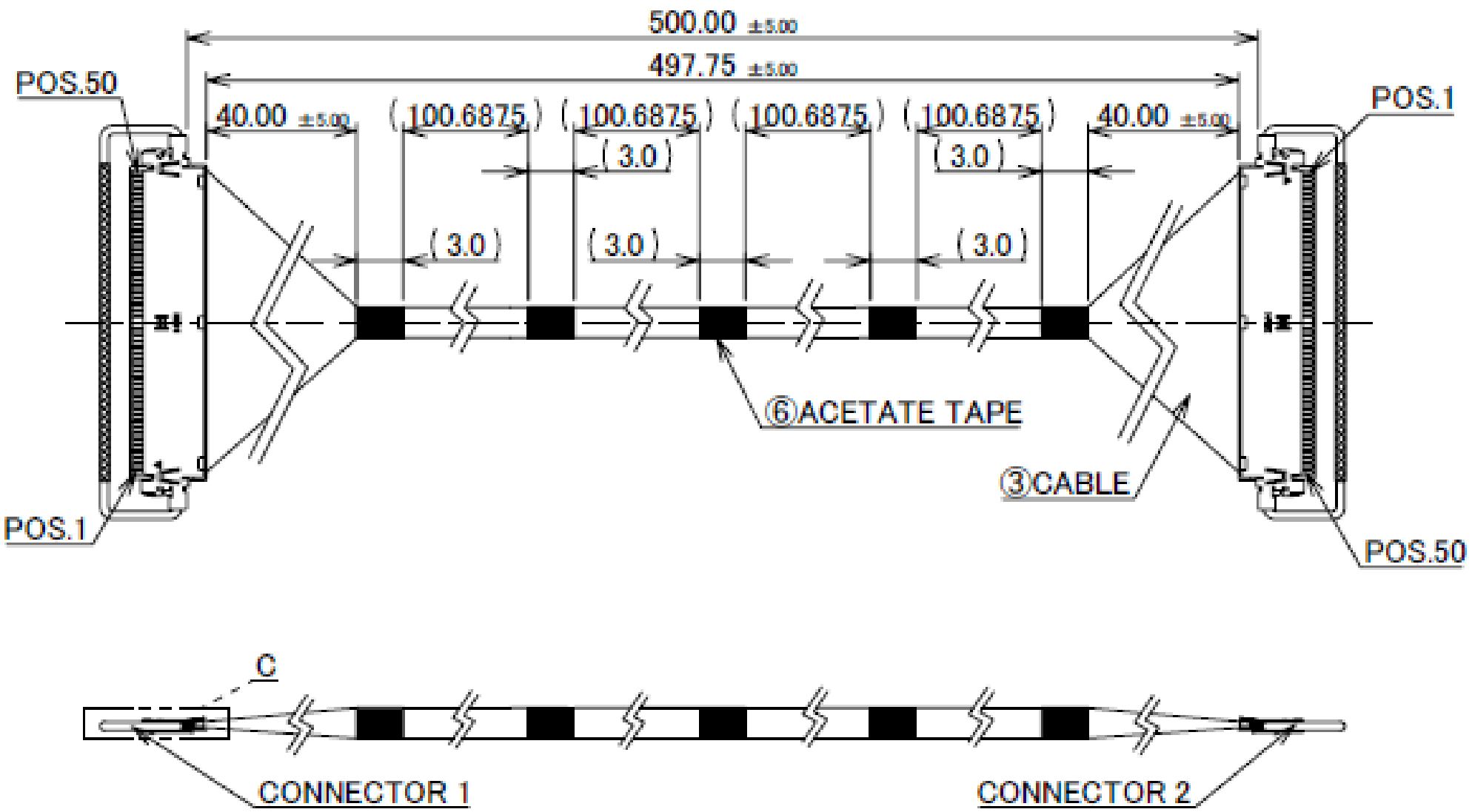
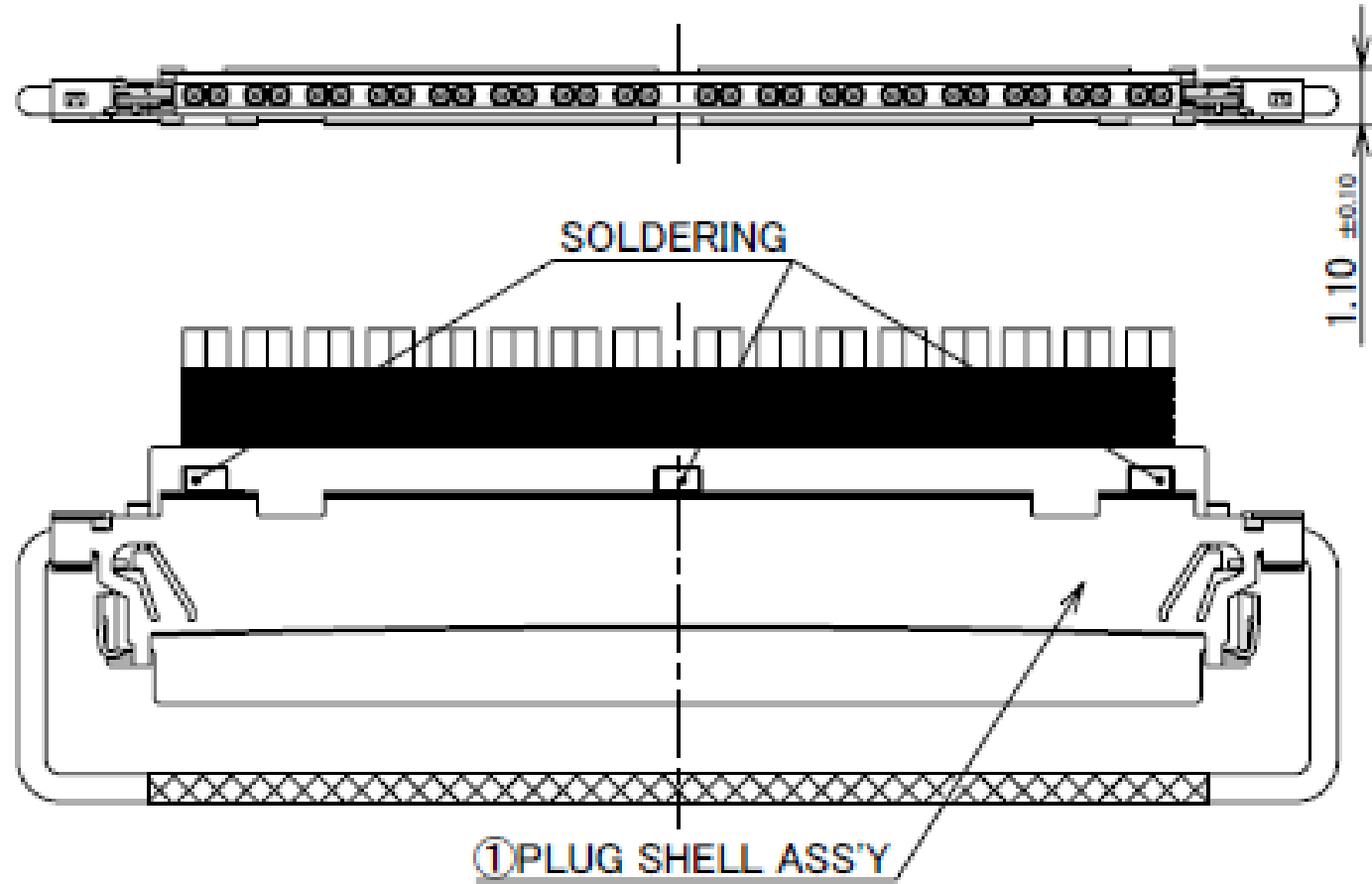
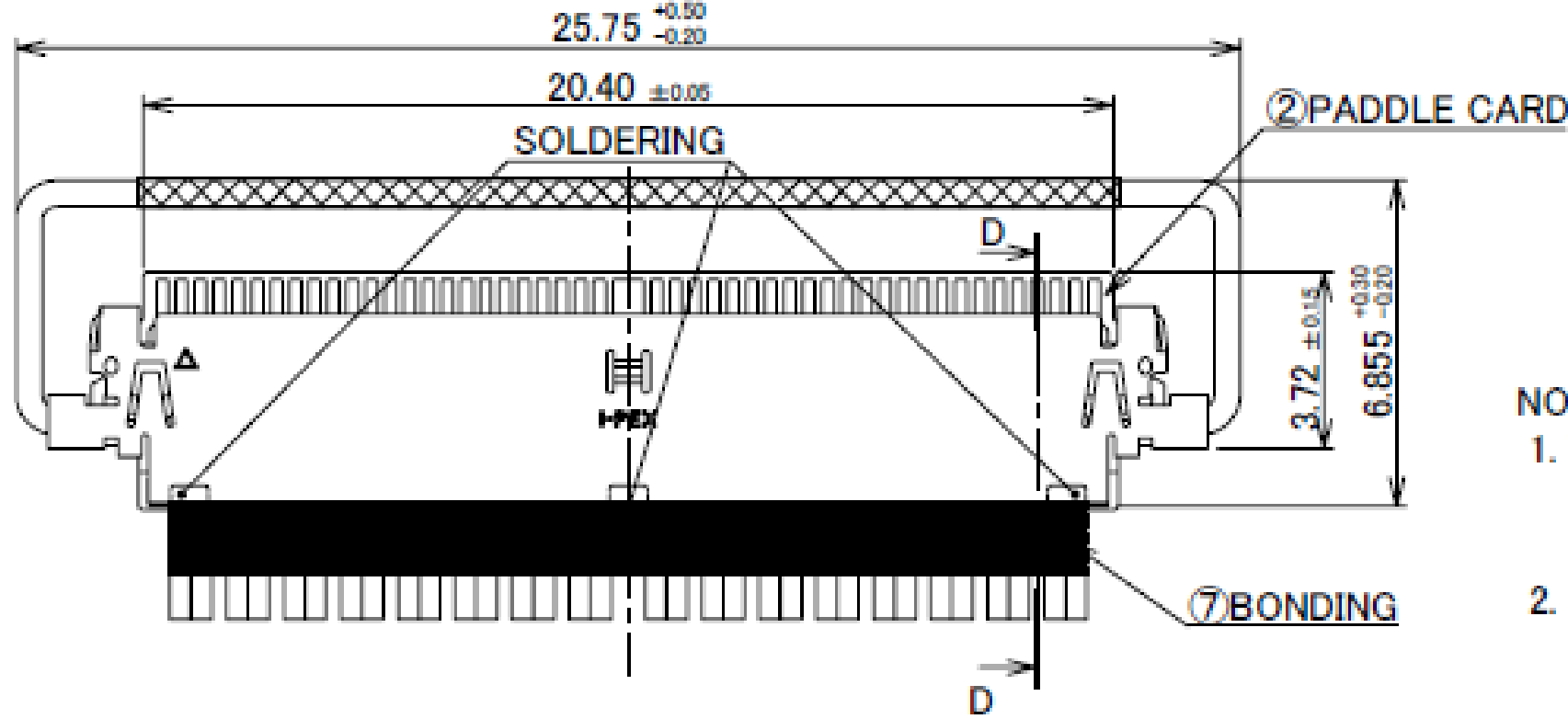
7	BONDING	-	-	UV GLUE
6	ACETATE TAPE	-	3	BLACK
5	GROUND-FINGER	-	2	-
4	GROUND-BAR	-	2	-
3	CABLE	-	32	MICRO-COAXIAL CABLE AWG #38, 45 OHM, BLUE
2	PADDLE CARD	3660-0501	2	CONNECTOR 1&2
1	PLUG SHELL ASS'Y	20993-050T-01	2	CABLINE®-CAP PLUG SHELL ASS'Y P/N: 20993-050T-01 CONNECTOR TO BE MATED: 20525-050E-02
NO.	DESCRIPTION	PARTS NO.	QTY	REMARKS

Rev.1

I-PEX PART NO.	HARNESS LENGTH
81863-100B-02	500



CONNECTOR 1&2  
(S=5/1)



- NOTE.
- 1. TO HANDLE THIS CONNECTOR :  
YOU MUST READ AND FOLLOW THE INSTRUCTION MANUAL BELOW.  
I-PEX INSTRUCTION MANUAL No.HIM-23013.
  - 2. ELECTRIC CHARACTERISTICS  
WITHSTANDING VOLTAGE: AC 250V LEAKAGE CURRENT 2.0mA MAX.  
INSULATION RESISTANCE: 50MΩ MIN. DC 100V
  - 3. THE OPERATING TEMPERATURE OF THE HARNESS: 80°C MAX.
  - 4. MINIMUM HARNESS LENGTH: 85mm

7	BONDING	-	-	UV GLUE
6	ACETATE TAPE	-	5	BLACK
5	GROUND-FINGER	-	2	-
4	GROUND-BAR	-	2	-
3	CABLE	-	32	MICRO-COAXIAL CABLE AWG #38, 45 OHM, BLUE
2	PADDLE CARD	3660-0501	2	CONNECTOR 1&2
1	PLUG SHELL ASS'Y	20993-050T-01	2	CABLINE®-CAP PLUG SHELL ASS'Y P/N: 20993-050T-01 CONNECTOR TO BE MATED: 20525-050E-02
NO.	DESCRIPTION	PARTS NO.	QTY	REMARKS

Rev.1

# Plug Harness Assembly

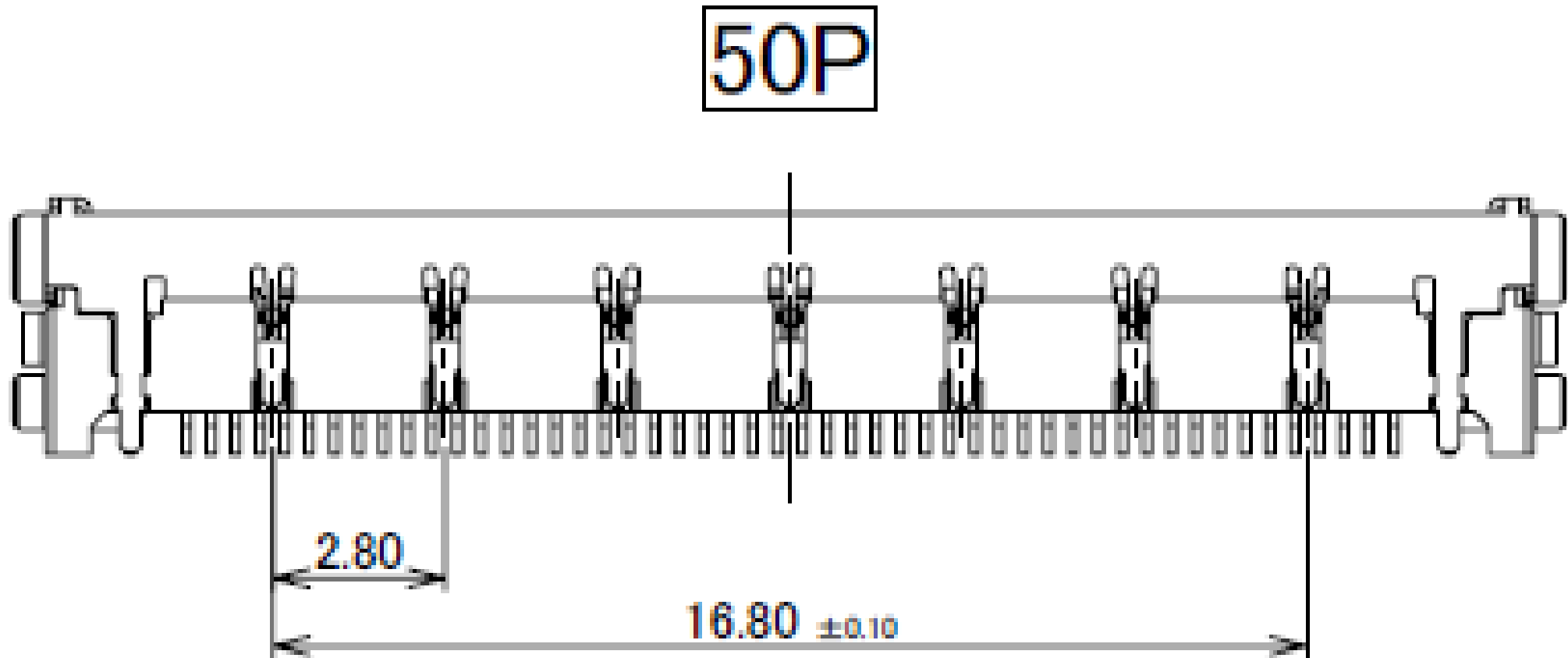
ITEMS	SPECIFICATION
APPLICABLE CABLE	Micro Coaxial: AWG#38 Diff 90ohm
RATING AMPERAGE (FOR CONTACT)	0.4A AC/DC (AWG#38)
RATING VOLTAGE	100V AC (PER CONTACT PIN)
OPERATING TEMPERATURE	233~358K (-40℃~85℃)
OPERATING HUMIDITY	85℃ MAX. (NON-CONDENDING)
CONTACT RESISTANCE	INITIAL: 270mohm MAX.(AWG#38) / AFTER TEST: Δ40mohm MAX.
GROUND SHELL RESISTANCE	INITIAL : 50mohm MAX. / AFTER TEST : Δ40mohm MAX.
INSULATION RESISTANCE	INITIAL: 1000Mohm MIN. / AFTER TEST: 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30CYCLES
MATING FORCE (INITIAL / AFTER 30 CYCLES)	50P: 18.9N MAX.
UNMATING FORCE (INITIAL / AFTER 30 CYCLES)	50P: 2.5N MIN.
CABLE RETENTION FORCE	50P: 24.5N MIN.
PRODUCT SPECIFICATION	PRS-2832
TEST REPORT	TR-23020
INSTRUCTION MANUAL	HIM-23013

Rev.1

# Receptacle Assembly

PART NO.
20525-050E-02

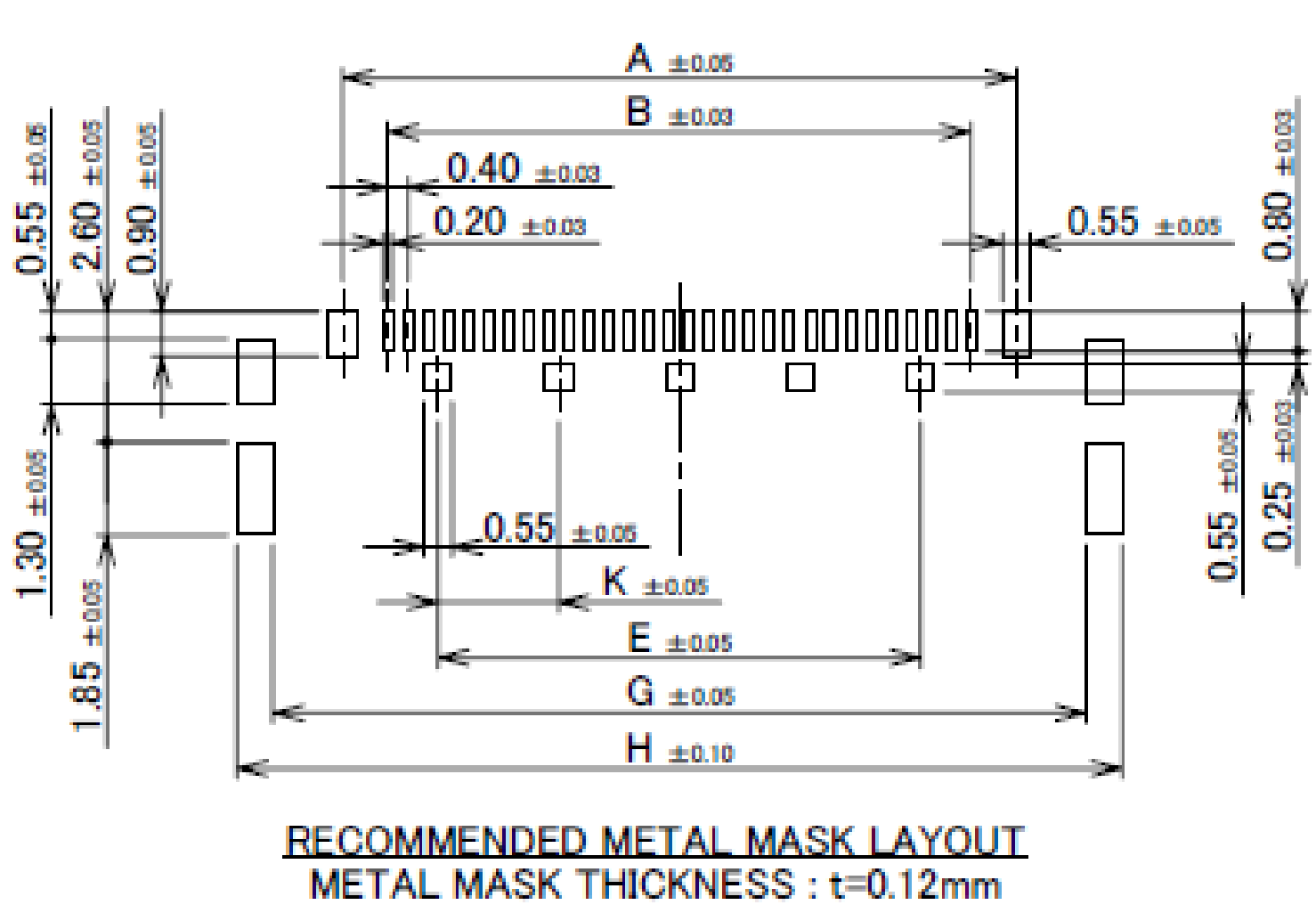
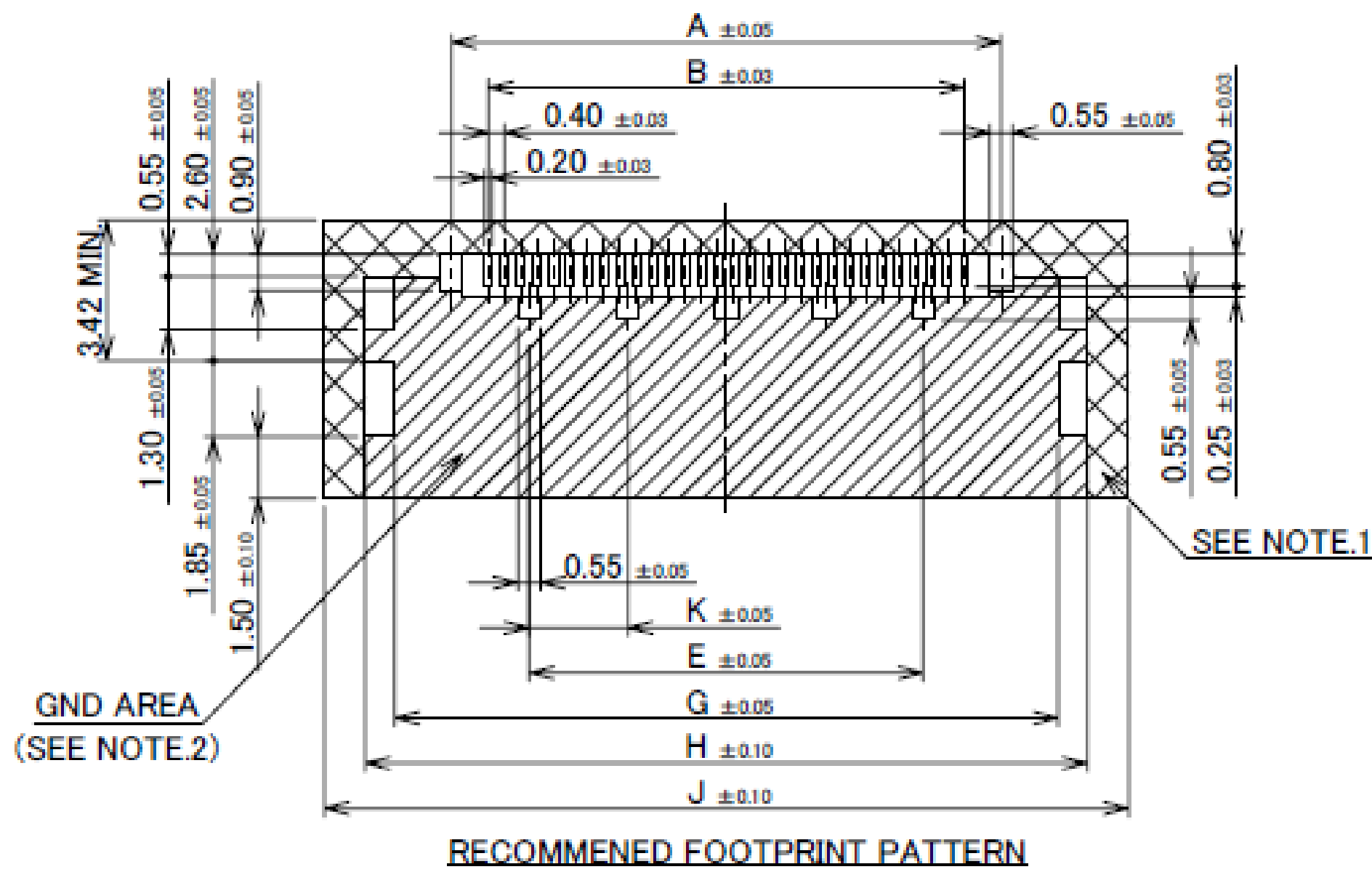
BOTTOM VIEW



Rev.32

Receptacle Assembly

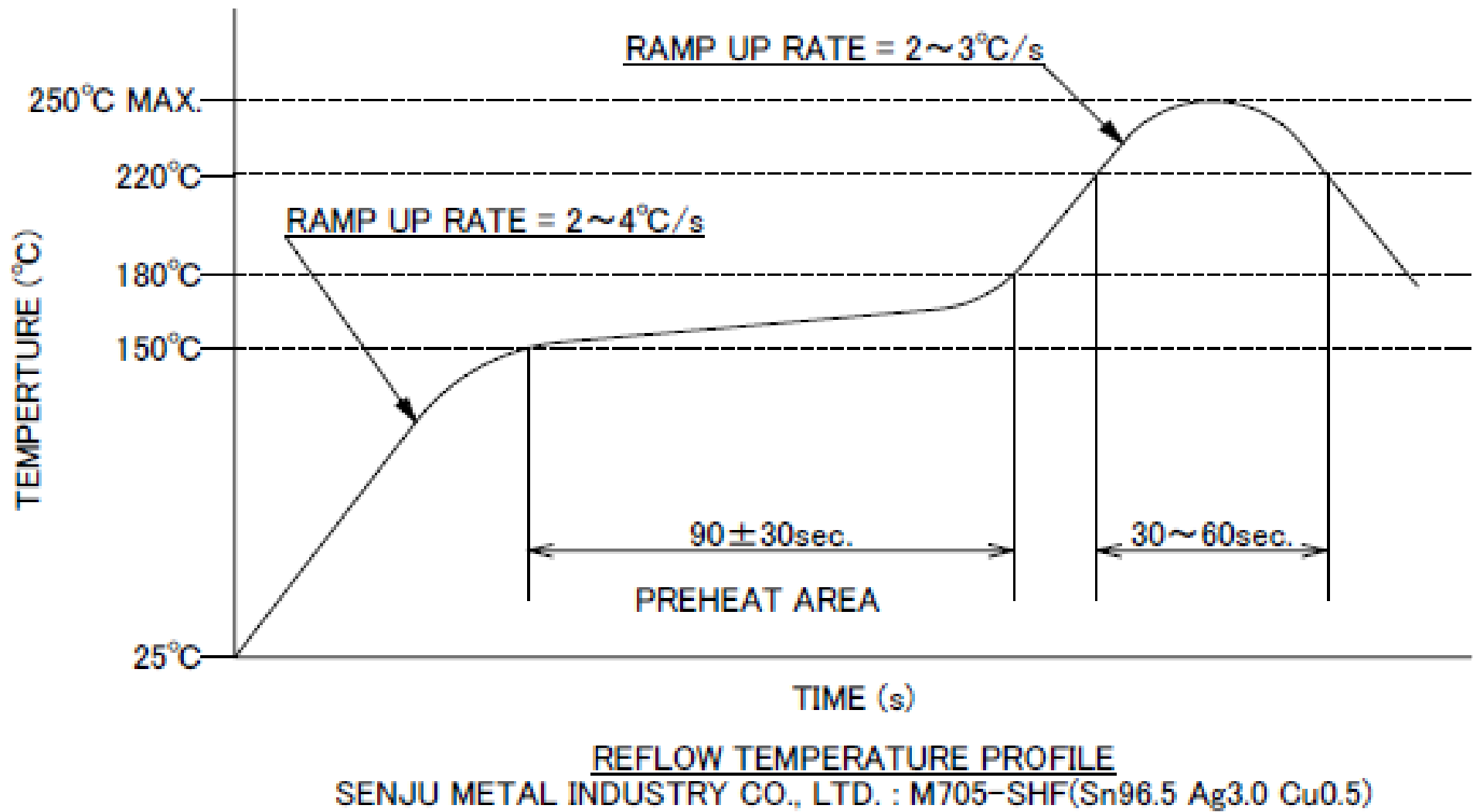
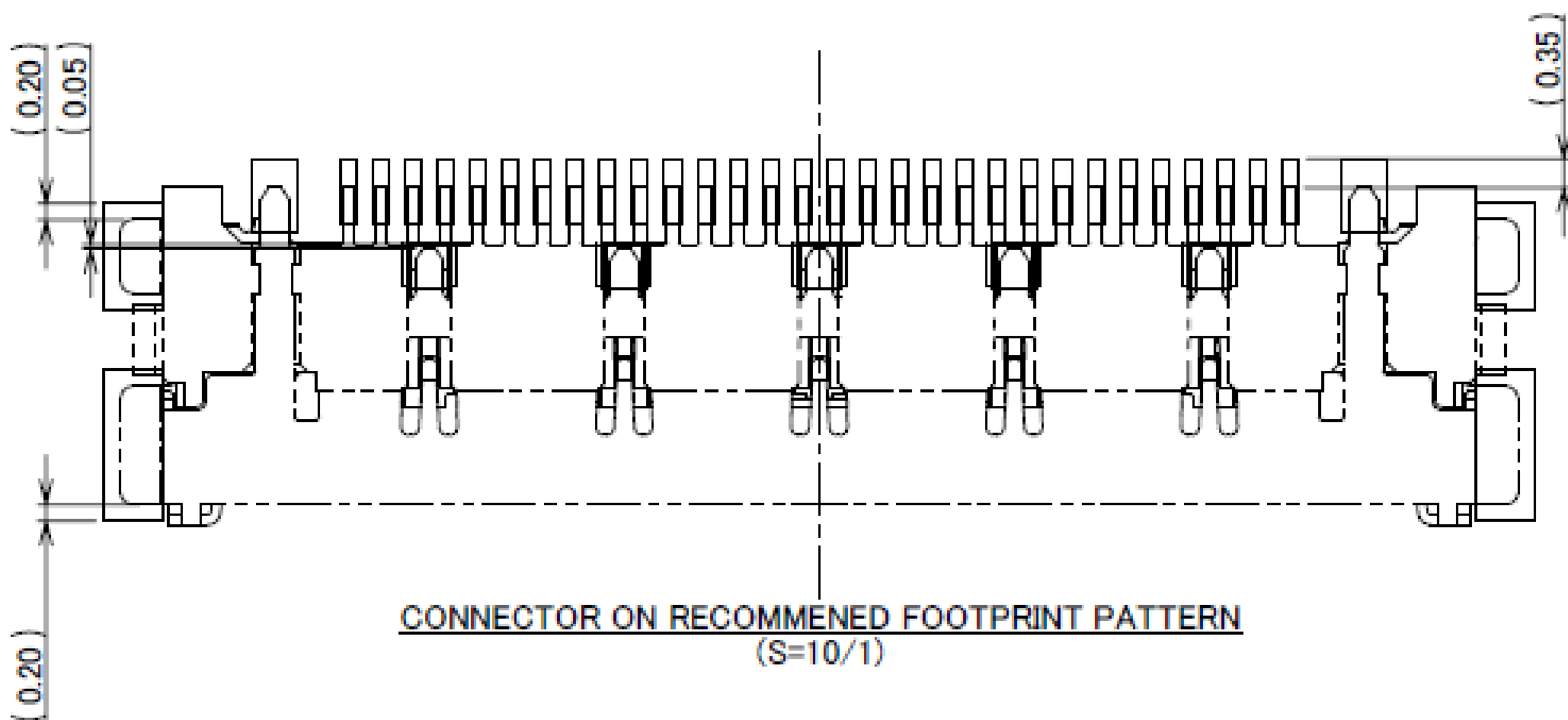
PART NO.	POS.	A	B	E	G	H	J	K
20525-050E-02	50	21.40	19.60	16.80	24.18	25.60	27.60	2.80



NOTES.  
1. IN CASE OF PLUG WITH PULL BAR(20633-#\*\*T-01S), DO NOT MOUNT ANOTHER COMPONENT IN THIS AREA.  
2. SOLDER RESIST MUST BE APPLIED TO THIS AREA.

Rev.32

Receptacle Assembly



Rev.32



Receptacle Assembly

FOR CABLINE-CA PLUG CABLE ASSEMBLY (DWG NO. 20633)

ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL CABLE : AWG# 44 , 42 , 40 , 38 , 36 DISCRETE WIRE : AWG# 36 , 34 TWINAX CABLE : AWG# 40 , 42
RATING VOLTAGE	100V AC (PER CONTACT PIN) ※THIS IS THE RATED VOLTAGE OF THE CONNECTOR. PLEASE NOTE THAT THE RATED VOLTAGE MAY VARY IN THE HARNESS DEPENDING ON THE CABLES USED.
RATING AMPERAGE (FOR CONTACT)	0.1A AC/DC [AWG#44] PER CONTACT PIN/UP TO 60 CONTACTS 0.24A AC/DC [AWG#42] PER CONTACT PIN/UP TO 50 CONTACTS 0.3A AC/DC [AWG#40] PER CONTACT PIN/UP TO 40 CONTACTS 0.5A AC/DC [AWG#38] PER CONTACT PIN/UP TO 14 CONTACTS 0.8A AC/DC [AWG#36] PER CONTACT PIN/UP TO 6 CONTACTS 1.0A AC/DC [AWG#34] PER CONTACT PIN/UP TO 4 CONTACTS ※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION.
OPERATING TEMPERATURE	233~358K (-40℃~85℃)
OPERATING HUMIDITY	85% MAX.
CONTACT RESISTANCE	INITIAL : 180mohm MAX. (AWG#34) / AFTER TEST : ≦140mohm MAX. 275mohm MAX. (AWG#36) 360mohm MAX. (AWG#38) 600mohm MAX. (AWG#40) 700mohm MAX. (AWG#42) 1080mohm MAX. (AWG#44)
GROUND SHELL RESISTANCE	INITIAL : 50mohm MAX. / AFTER TEST : ≦140mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER 30 CYCLES)	10P : 7.80N MAX.      40P : 19.40N MAX. 12P : 8.20N MAX.      50P : 24.25N MAX. 20P : 9.70N MAX.      60P : 29.10N MAX. 30P : 14.55N MAX.
UNMATING FORCE (INITIAL / AFTER 30 CYCLES)	10P : 1.00N MIN.      40P : 4.00N MIN. 12P : 1.20N MIN.      50P : 5.00N MIN. 20P : 2.00N MIN.      60P : 6.00N MIN. 30P : 3.00N MIN.
CABLE RETENTION FORCE	10P : 4.90N MIN.      40P : 19.60N MIN. 12P : 5.88N MIN.      50P : 24.50N MIN. 20P : 9.80N MIN.      60P : 29.40N MIN. 30P : 14.70N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-1968
TEST REPORT	TR-14122 (20525-0**E-0#) / TR-16023 (20525-2**E-0#)
PACKING STANDARD	300-824
INSTRUCTION MANUAL	HIM-09008
APPEARANCE CRITERIA No.	QLS-A***



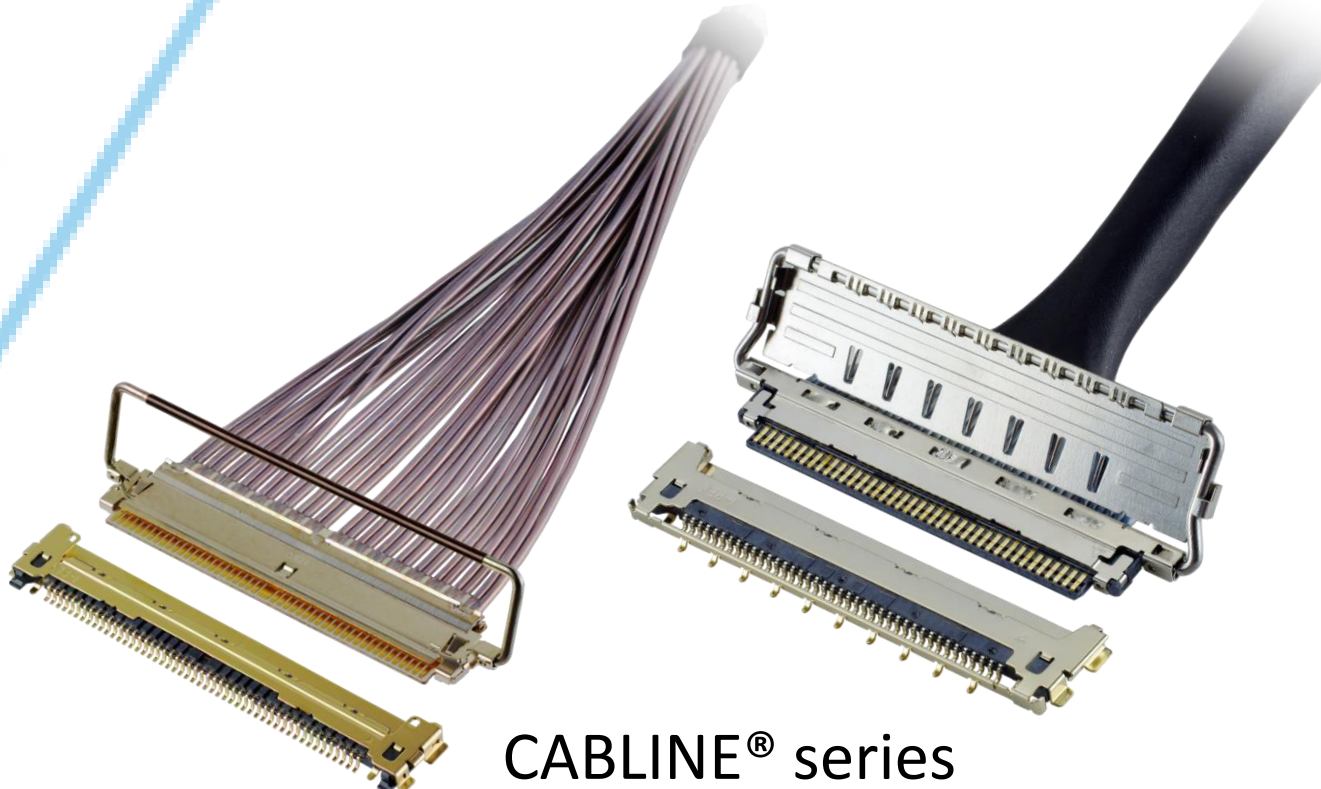
# Custom Connectors Available

 RF  
Connectors

MHF® series



CABLINE® series

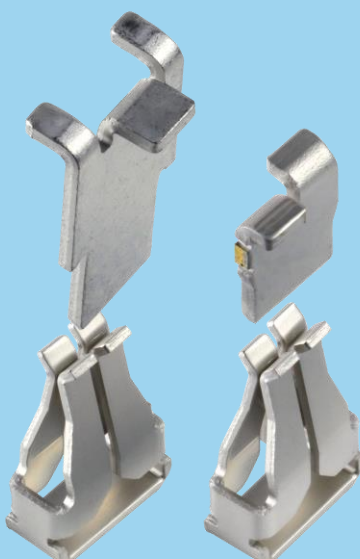


Micro-Coaxial/Twinax  
Connectors



Wire-to-Board  
Connectors/  
Terminals

AP series



ISH® series



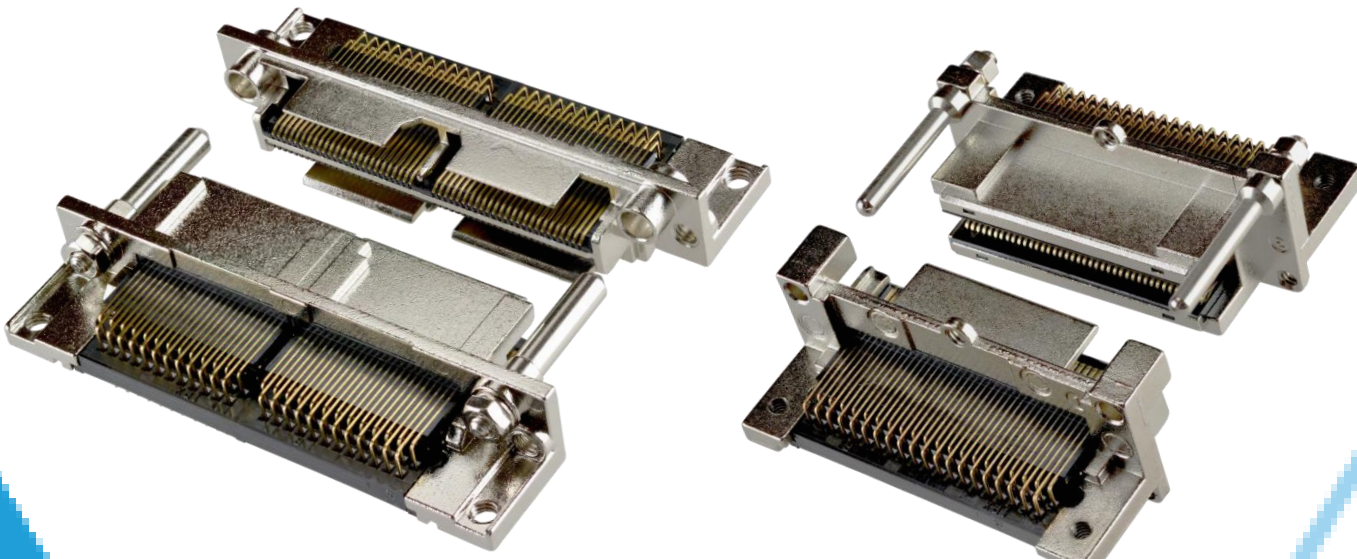
NOVASTACK® series



Board-to-Board  
Connectors



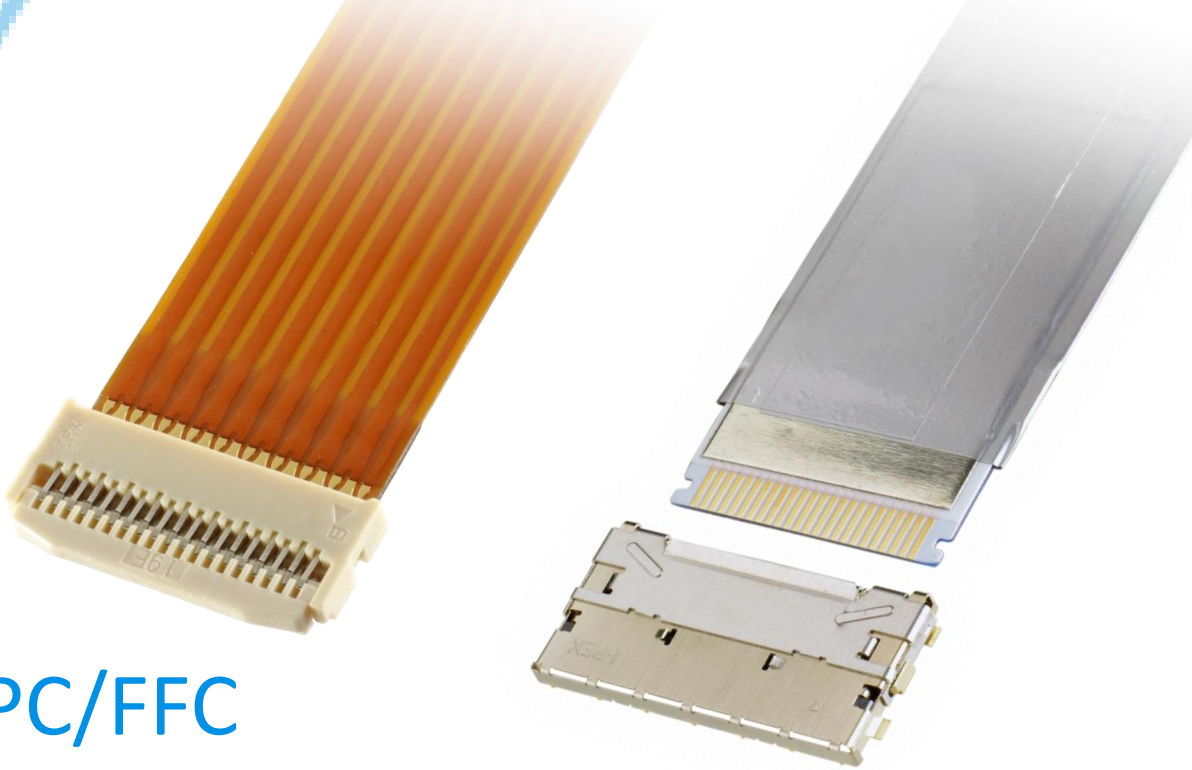
I/O  
Connectors



MINIDOCK™ series

MINIFLEX® series

EVAFLEX® series



FPC/FFC  
Connectors



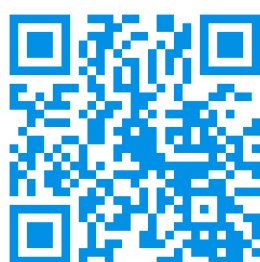
Inquiry



I-PEX, MHF, CABLINE, NOVASTACK, ISH, IARPB, MINIFLEX, EVAFLEX, MINIDOCK and ZenShield are registered trademarks of I-PEX Inc. Please note that the contents in the catalog might be changed without prior notification. I-PEX Inc. assumes no responsibility for any inaccuracies or obligation to update information on these documents. Please be sure to read and understand the latest “Precautions for Use” and “Instruction Manual” before you use our products. We shall not be responsible for any defects, damages or troubles in case you use our products without following the precautions for use. Please feel free to contact our sales representatives when you use our products for any applications that require very high reliability and safety, or that relate to human life (ex. nuclear power control, aerospace, transportation, medical equipment, safety equipment etc.).

Contact your sales representative  
or more detailed information.

[www.i-pex.com](http://www.i-pex.com)



# I-PEX

© I-PEX Inc. 2025  
All rights reserved