

# CABLINE®-CAF

Mechanical lock with shielding and multi-point ground, suitable for high-data-rate transfer (32 Gbps/lane), 0.4 mm pitch, Horizontal mating type FPC plug connector



**Product Specifications:**

Mating type	Horizontal	
Board Pitch (mm)	0.4	
Wiping Length (mm)	0.48	
Mated size (mm)	Height	1.10 Max
	Width	Formula: 5.75 + (0.4 x ? p)
	Depth	6.06
Pin Counts	Range	Up to 60
	Available	40, 60

**Applicable FPC**

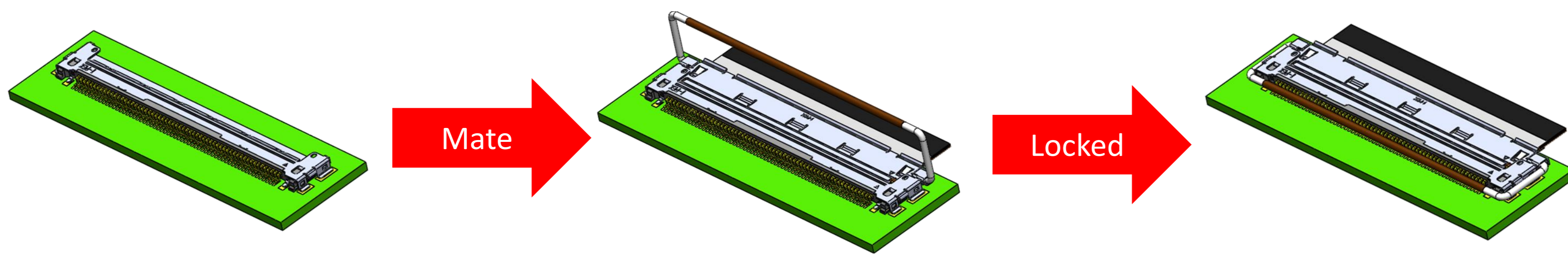
FPC Type	Shielded/Non-shielded FPC
FPC Pitch (mm)	0.4
FPC Contact Point	Top
FPC Thickness (mm)	Contact Area: 0.26 ± 0.02
	Ground Area: 0.40 ± 0.05

**Applicable Standards (Reference Only):**

32 Gbps/ Lane, USB4 Gen4 (40 Gbps/ Lane PAM3)  
Display Port UHBR20 (20 Gbps/Lane)

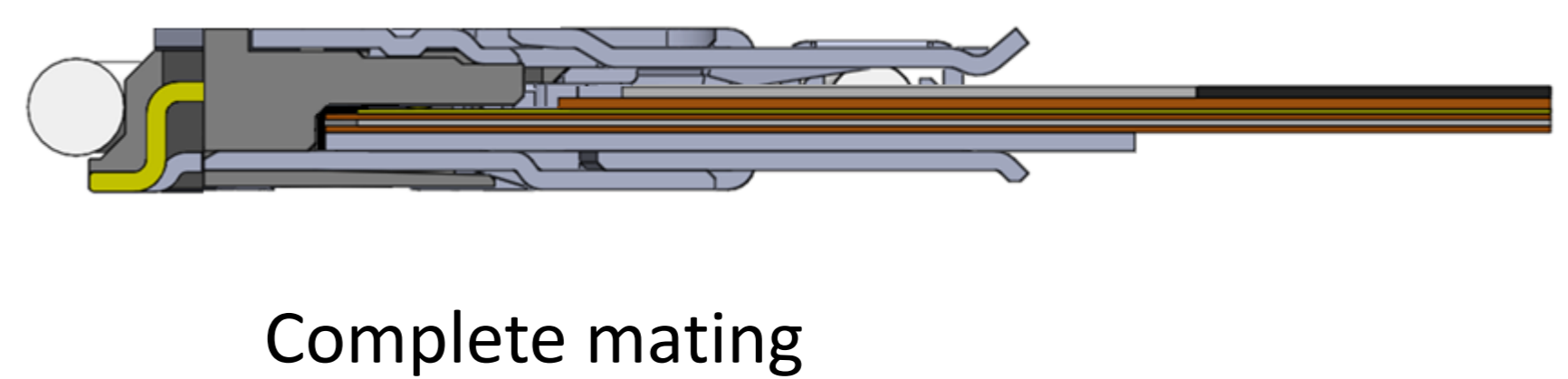
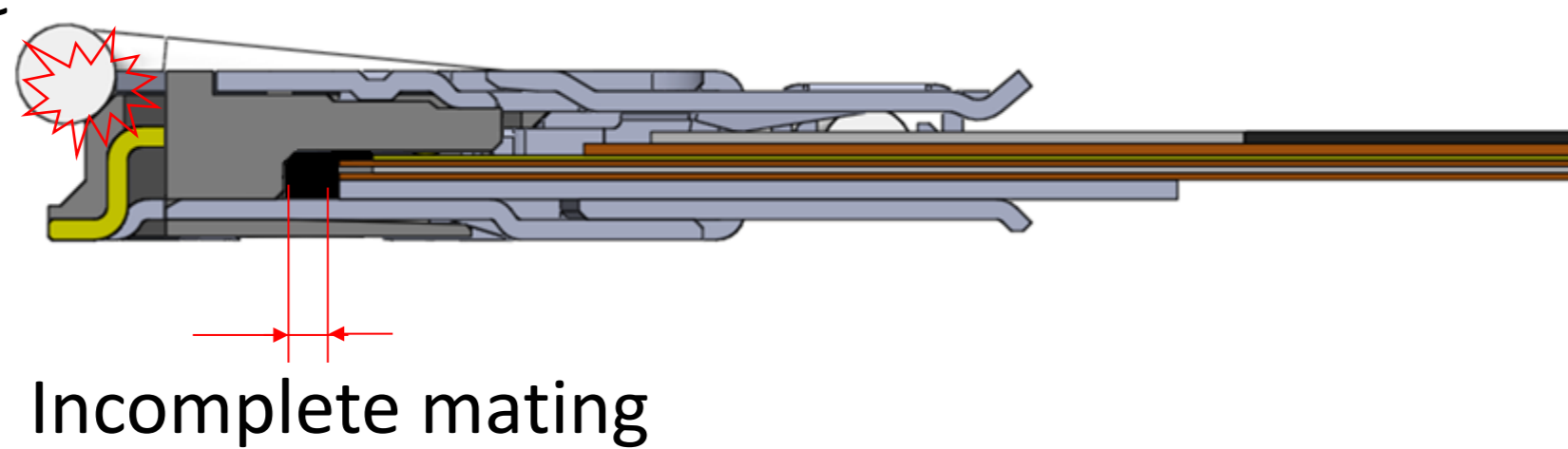
\* Please inquire for pin counts not listed or outside of the pin count range.

## ▶ Mechanical locking bar prevents incomplete mating and back-out/unmating

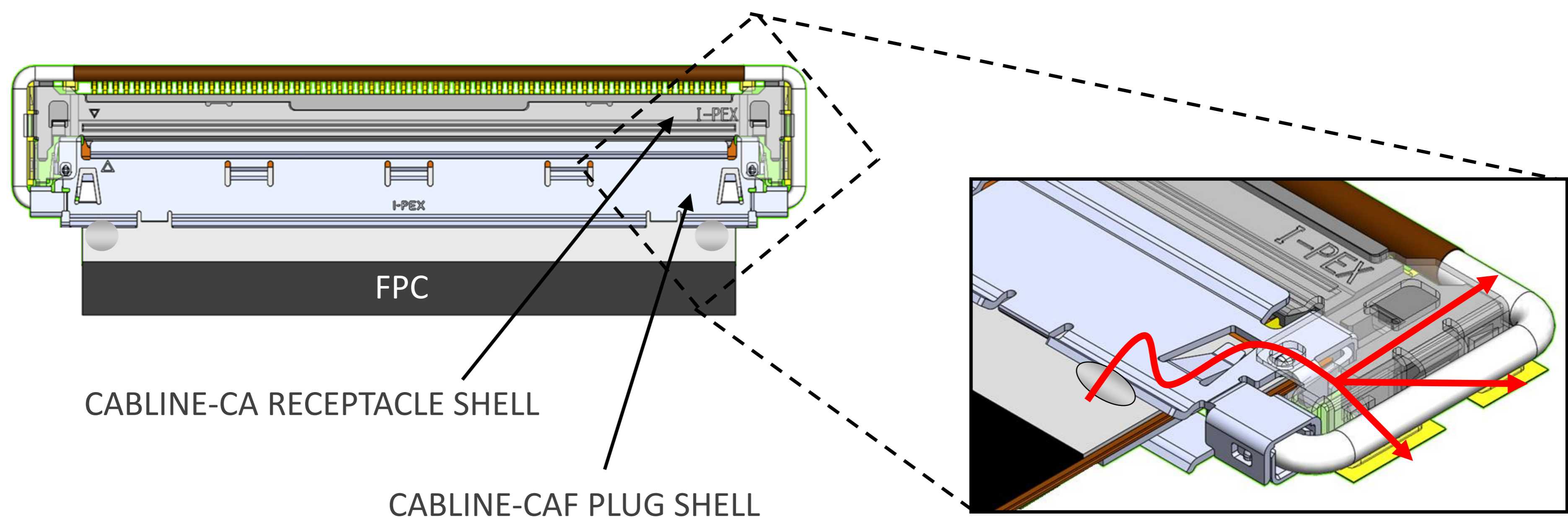


Mechanical locking bar can be locked only when plug is properly mated to receptacle

Interference



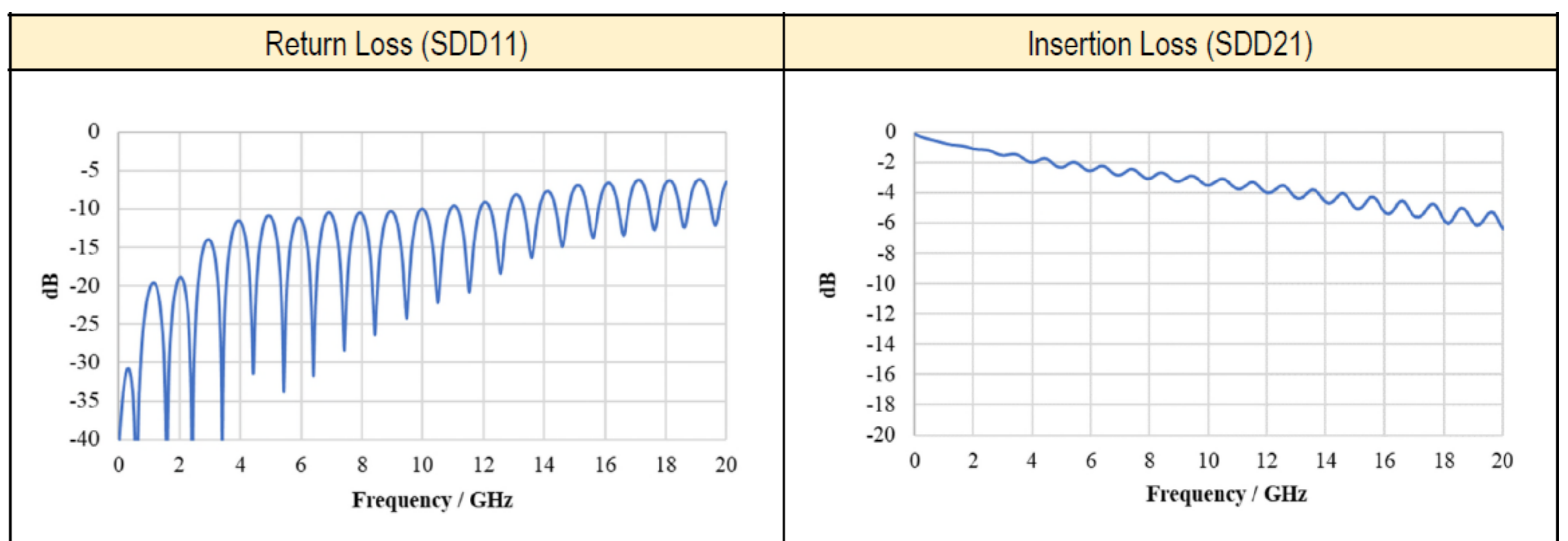
## ▶ EMI shielding and multi-point ground design



## ▶ High-data-rate transfer, ideal for 32 Gbps/lane applications

**Measurement results**

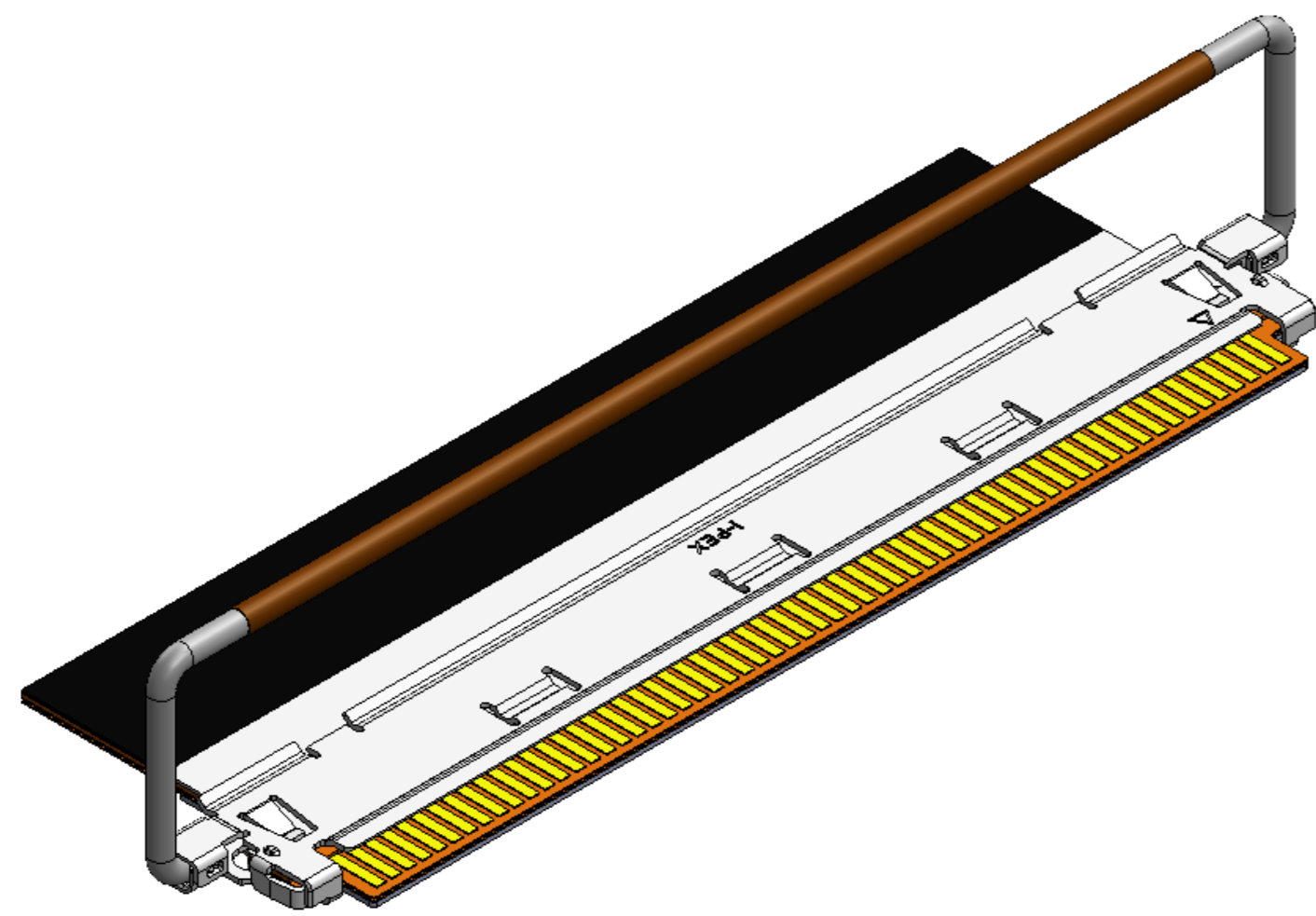
Connector: CABLINE-CAF 40P  
FPC: Shielded FPC,  
Differential 100 ohm, Length : 100 mm  
Pin Assignment: GSSGSSG



# Component Parts Details

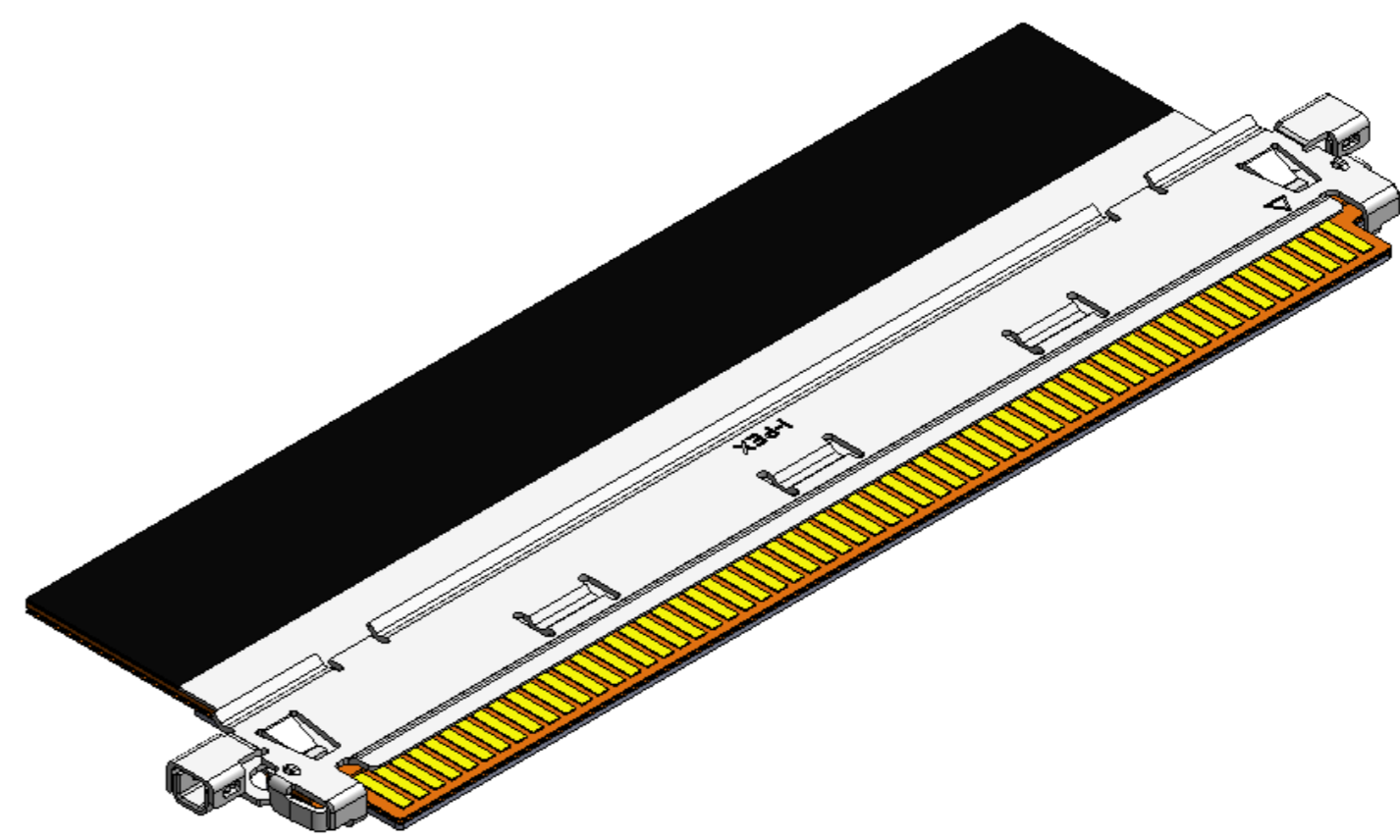
## Component Parts

WITH LOCK BAR TYPE



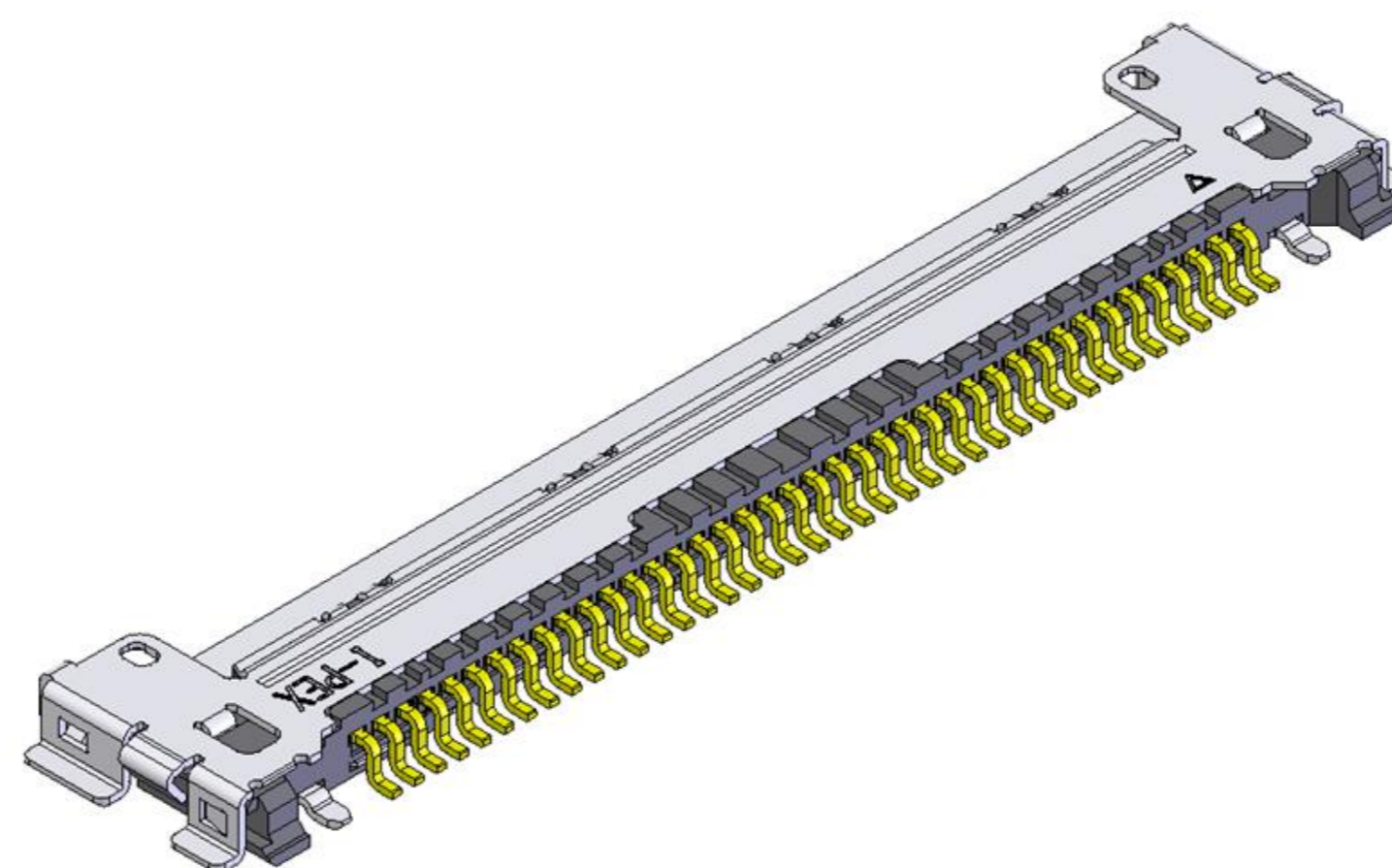
CABLINE-CAF SHELL ASS'Y PLUG with FPC

WITHOUT LOCK BAR TYPE



CABLINE-CAF SHELL PLUG with FPC

OR



CABLINE-CA RECEPTACLE

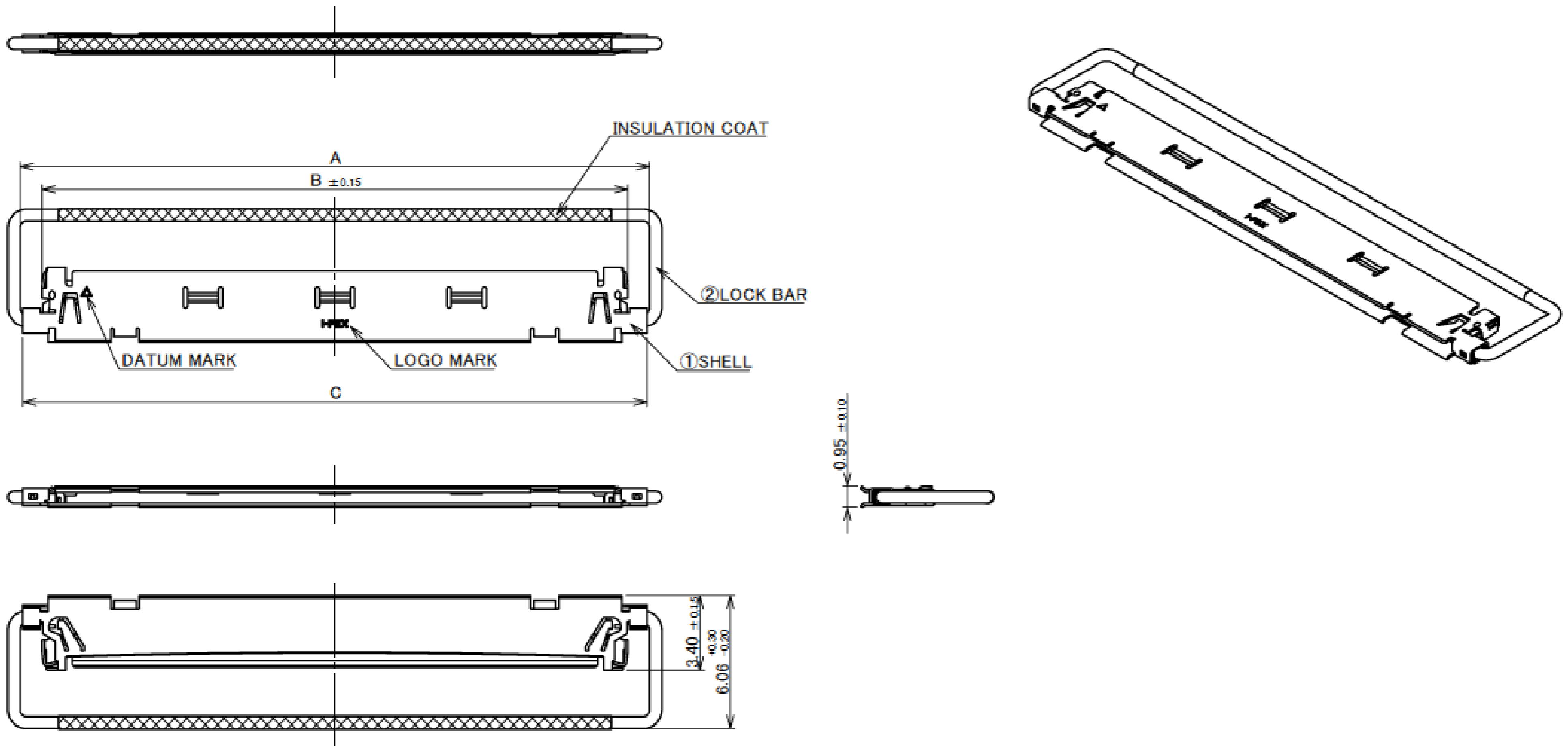
# Shell Assembly

Recommended P/N 20858-0\*\*T-01

PART NO.	Pos.	A	B	C
20858-040T-01	40	20.65	18.66	20.40
20858-060T-01	60	28.65	26.66	28.40



Halogen Free RoHS Compliant



NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
2	LOCK BAR	SUS	-
1	SHELL	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.00 μm MIN.

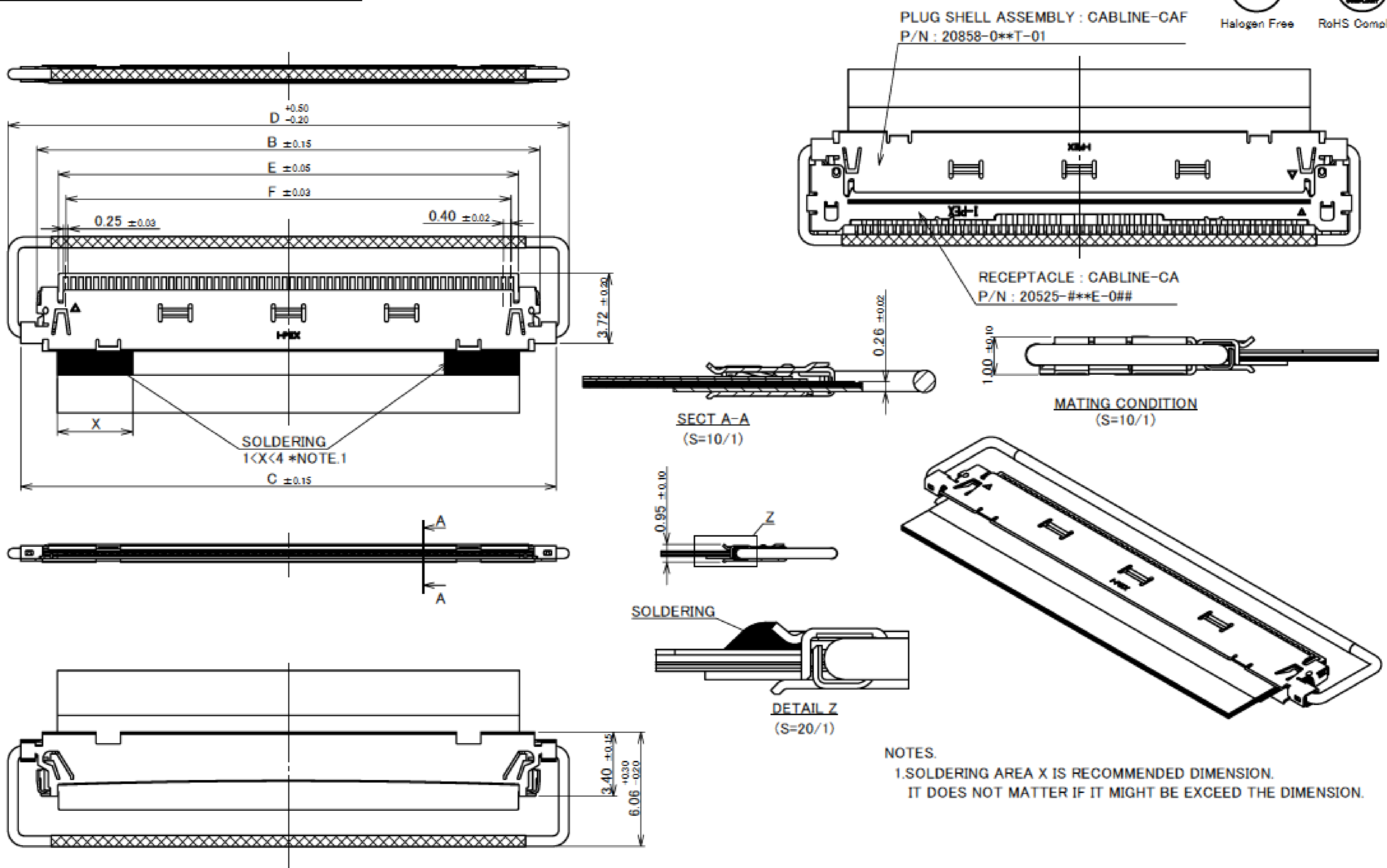
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PART NO.	Pos.	B	C	D	E	F
20858-040T-01	40	18.66	20.40	21.75	16.40	15.60
20858-060T-01	60	26.66	28.40	29.75	24.40	23.60

## FPC ASSEMBLY STATE



Halogen Free RoHS Compliant



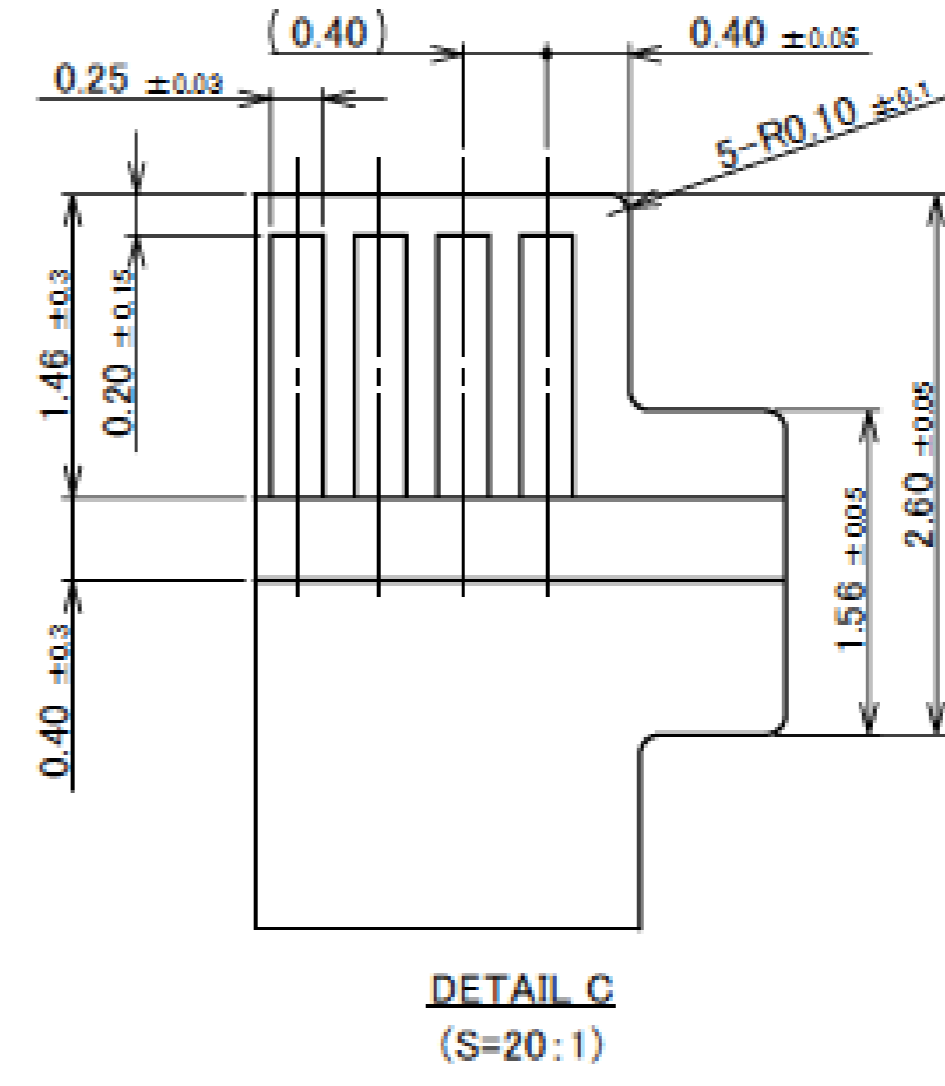
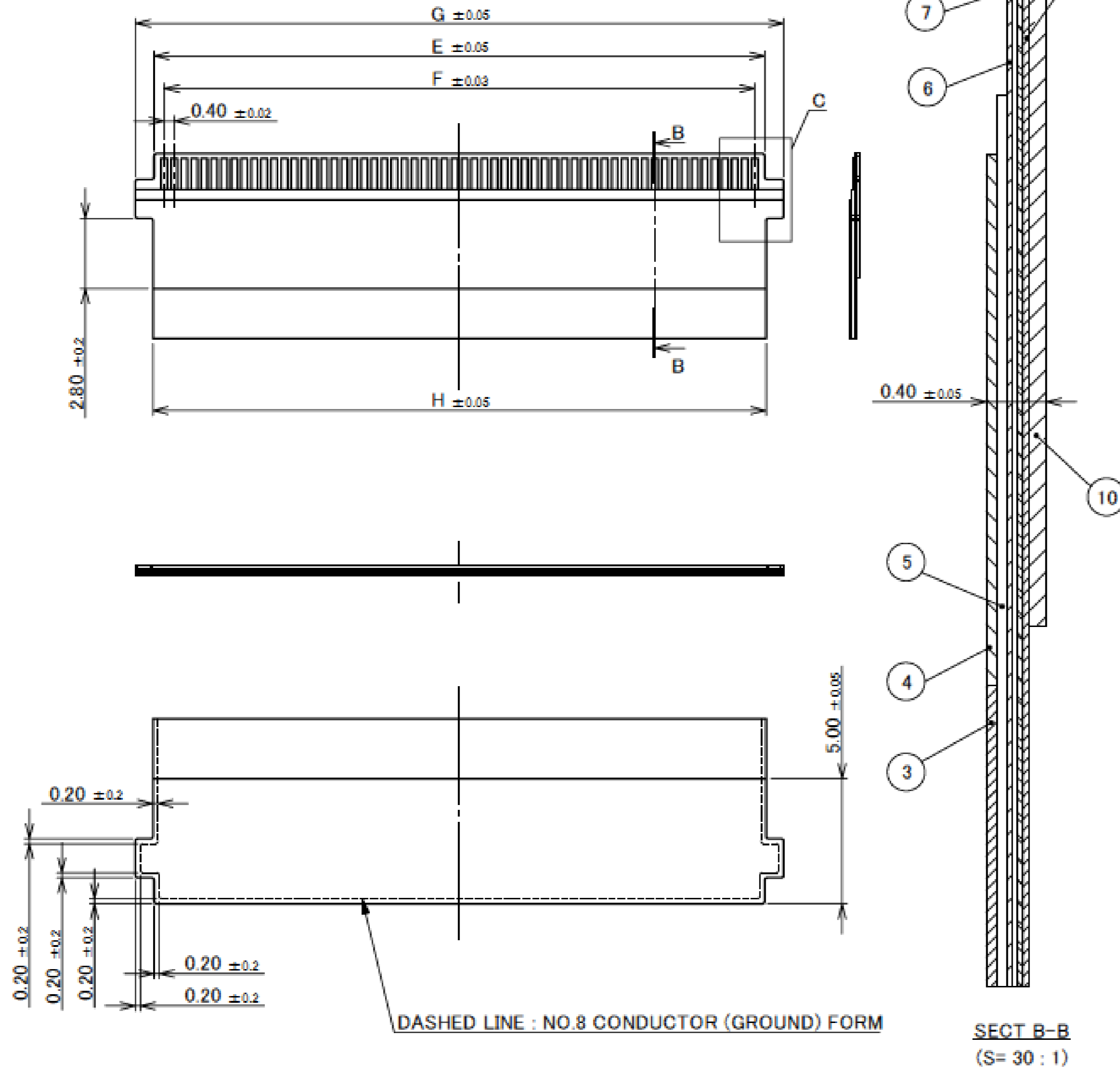
NOTES.  
1.SOLDERING AREA X IS RECOMMENDED DIMENSION.  
IT DOES NOT MATTER IF IT MIGHT BE EXCEED THE DIMENSION.

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# Shell Assembly

PART NO.	Pos.	E	F	G	H
20858-040T-01	40	16.40	15.60	17.90	16.50
20858-060T-01	60	24.40	23.60	25.90	24.50

## RECOMMENDED FPC LAYOUT 【SHIELDED FPC】



### NOTES.

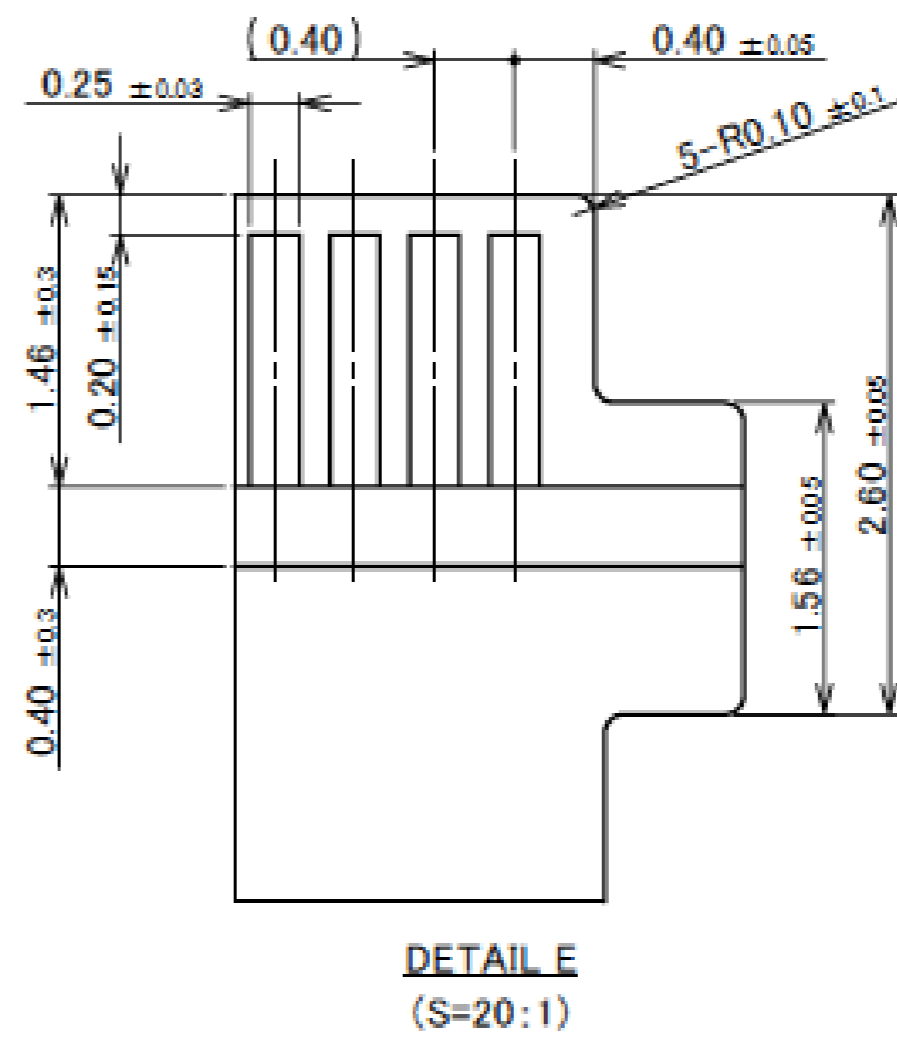
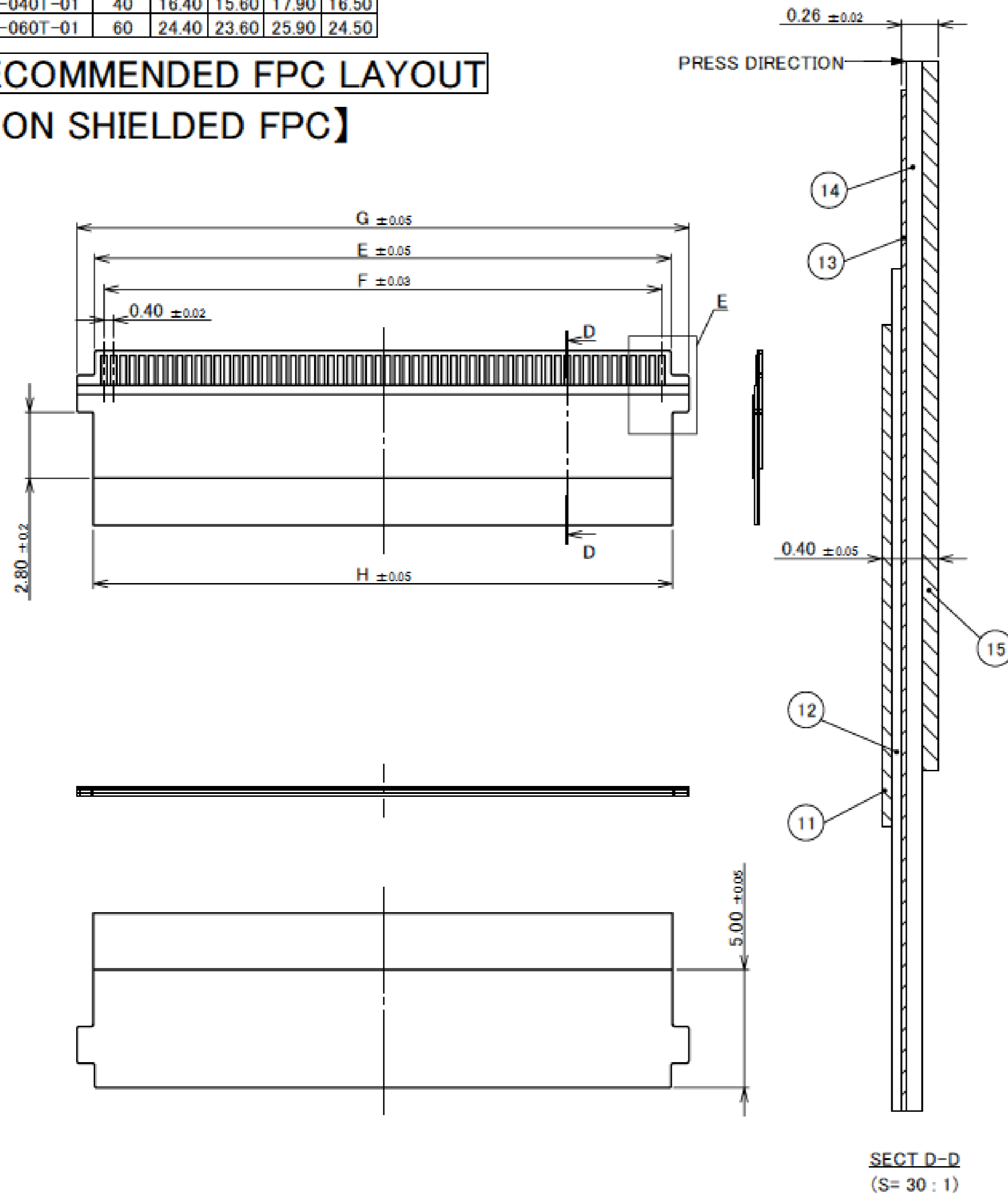
- ADHESIVE SHOULD USE THERMOSETTING.
- NO.3 : SHIELD FILM AND NO.4, NO.8 : CONDUCTOR (GROUND) ARE CARRYING OUT THE ELECTRICAL CONNECTION.
- NO.4 : CONDUCTOR (GROUND) AND NO.8 : CONDUCTOR (GROUND) ARE CARRYING OUT THE ELECTRICAL CONNECTION.
- NO.3 : SHIELD FILM AND NO.6 : CONDUCTOR (SIGNAL) ARE NOT CONTACTING.
- NO.4, NO.8 : CONDUCTOR (GROUND) AND NO.6 : CONDUCTOR (SIGNAL) ARE NOT CONTACTING.

No.	DESCRIPTION	MATERIAL	PLATING
3	SHIELD FILM	-	-
4	CONDUCTOR (GROUND)	Cu	Ni, Au
5	INSULATOR	-	-
6	CONDUCTOR (SIGNAL)	Cu	Ni, Au
7	INSULATOR	-	-
8	CONDUCTOR (GROUND)	Cu	Ni
9	INSULATOR	-	-
10	REINFORCING TAPE	-	-

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PART NO.	Pos.	E	F	G	H
20858-040T-01	40	16.40	15.60	17.90	16.50
20858-060T-01	60	24.40	23.60	25.90	24.50

## RECOMMENDED FPC LAYOUT 【NON SHIELDED FPC】



### NOTES.

- ADHESIVE SHOULD USE THERMOSETTING.
- NO.11 : CONDUCTOR (GROUND) AND NO.1 : SHELL ARE CARRYING OUT THE ELECTRICAL CONNECTION BY SOLDERING.
- NO.11 : CONDUCTOR (GROUND) AND NO.13 : CONDUCTOR (SIGNAL) ARE NOT CONTACTING.

No.	DESCRIPTION	MATERIAL	PLATING
11	CONDUCTOR (GROUND)	Cu	Ni, Au
12	INSULATOR	-	-
13	CONDUCTOR (SIGNAL)	Cu	Ni, Au
14	INSULATOR	-	-
15	REINFORCING TAPE	-	-

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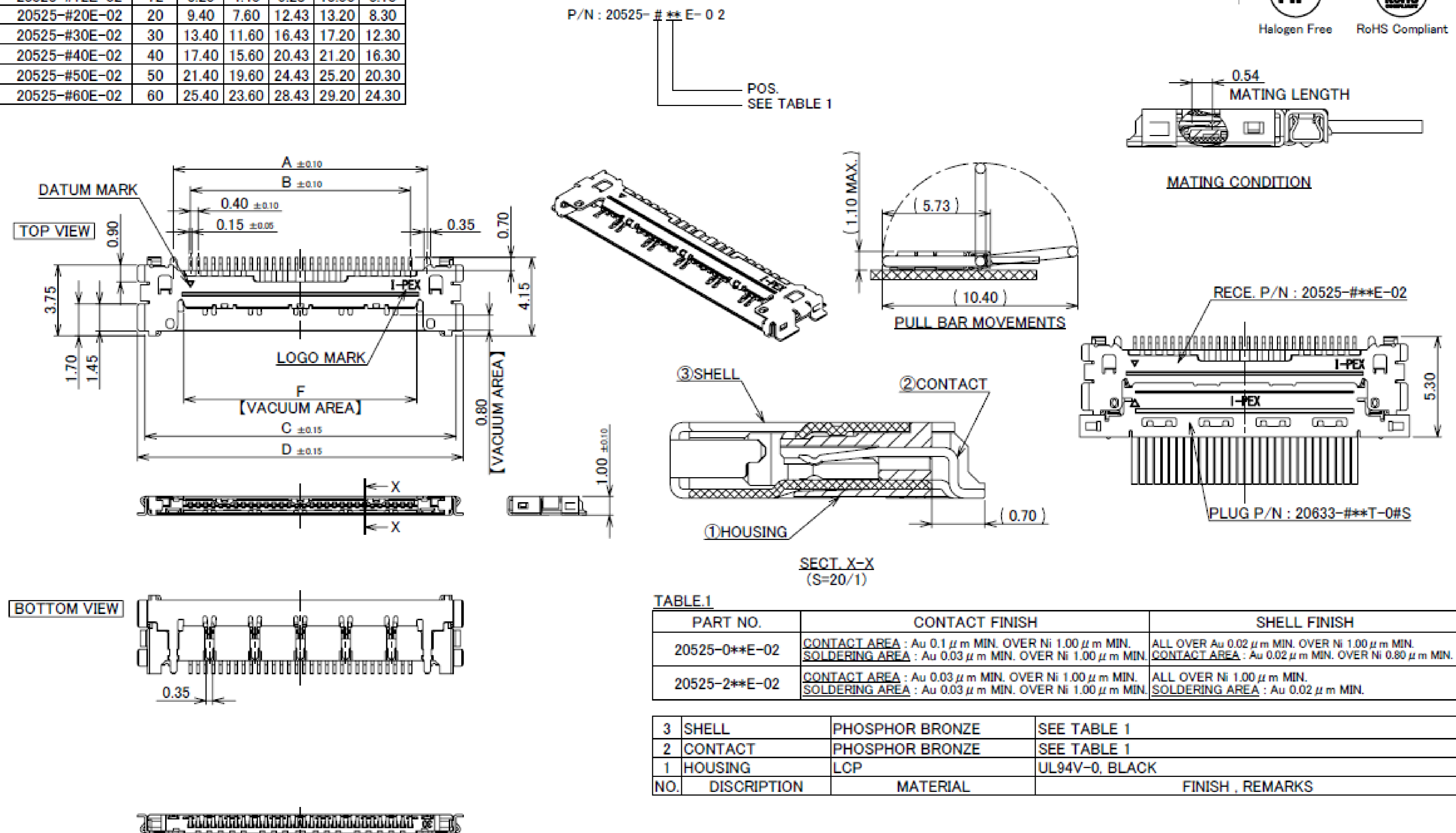
# Shell Assembly

ITEMS	SPECIFICATION
RATING VOLTAGE	100V AC (PER CONTACT)
RATING AMPERAGE (FOR SIGNAL CONTACT)	0.5A AC/DC (PER CONTACT) ※AVAILABLE UP TO 14PIN 0.3A AC/DC (PER CONTACT) ※AVAILABLE UP TO ALL PIN
OPERATING TEMPERATURE	233~358K(-40°C~+85°C)
OPERATING HUMIDITY	85% MAX.(NON-CONDENSING)
CONTACT RESISTANCE (FOR SIGNAL CONTACT)	INITIAL : 60mohm MAX. / AFTER TEST : $\triangleleft$ 40mohm MAX.
GROUND SHELL RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : $\triangleleft$ 40mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER TEST)	40P : 11.07N MAX. 60P : 16.61N MAX.
UNMATING FORCE (INITIAL / AFTER TEST)	40P : 1.44N MIN. 60P : 2.16N MIN.
PRODUCT SPECIFICATION	PRS-2465
TEST REPORT	TR-18016
PACKING STANDARD	PST-17138
INSTRUCTION MANUAL	HIM-18016
ASSEMBLY MANUAL	ASM-18005
APPEARANCE CRITERIA No.	QLS-A***

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# Receptacle Assembly

Recommended P/N	20525-0**E-02(12~60P)						20525-210E-02(10P)					
PART NO.	POS.	A	B	C	D	F						
20525-#10E-02	10	5.40	3.60	8.43	9.20	4.30						
20525-#12E-02	12	6.20	4.40	9.23	10.00	5.10						
20525-#20E-02	20	9.40	7.60	12.43	13.20	8.30						
20525-#30E-02	30	13.40	11.60	16.43	17.20	12.30						
20525-#40E-02	40	17.40	15.60	20.43	21.20	16.30						
20525-#50E-02	50	21.40	19.60	24.43	25.20	20.30						
20525-#60E-02	60	25.40	23.60	28.43	29.20	24.30						



PART NO.	CONTACT FINISH	SHELL FINISH
20525-0**E-02	CONTACT AREA : Au 0.1 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN. SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.	ALL OVER Au 0.02 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN. CONTACT AREA : Au 0.02 $\mu$ m MIN. OVER Ni 0.80 $\mu$ m MIN.
20525-2**E-02	CONTACT AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN. SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.	ALL OVER Ni 1.00 $\mu$ m MIN. SOLDERING AREA : Au 0.02 $\mu$ m MIN.

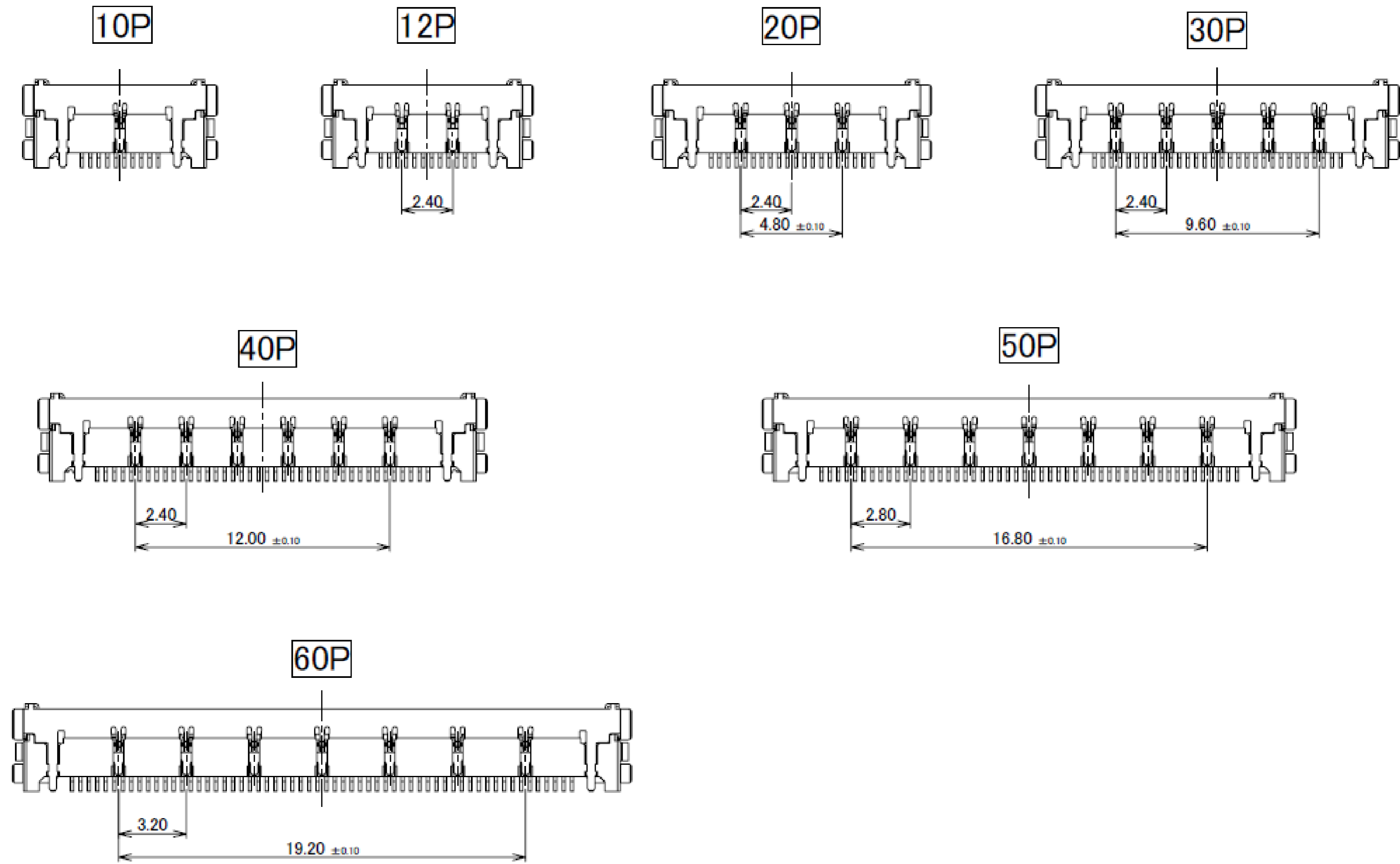
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
3	SHELL	PHOSPHOR BRONZE	SEE TABLE 1
2	CONTACT	PHOSPHOR BRONZE	SEE TABLE 1
1	HOUSING	LCP	UL94V-0, BLACK

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# Receptacle Assembly

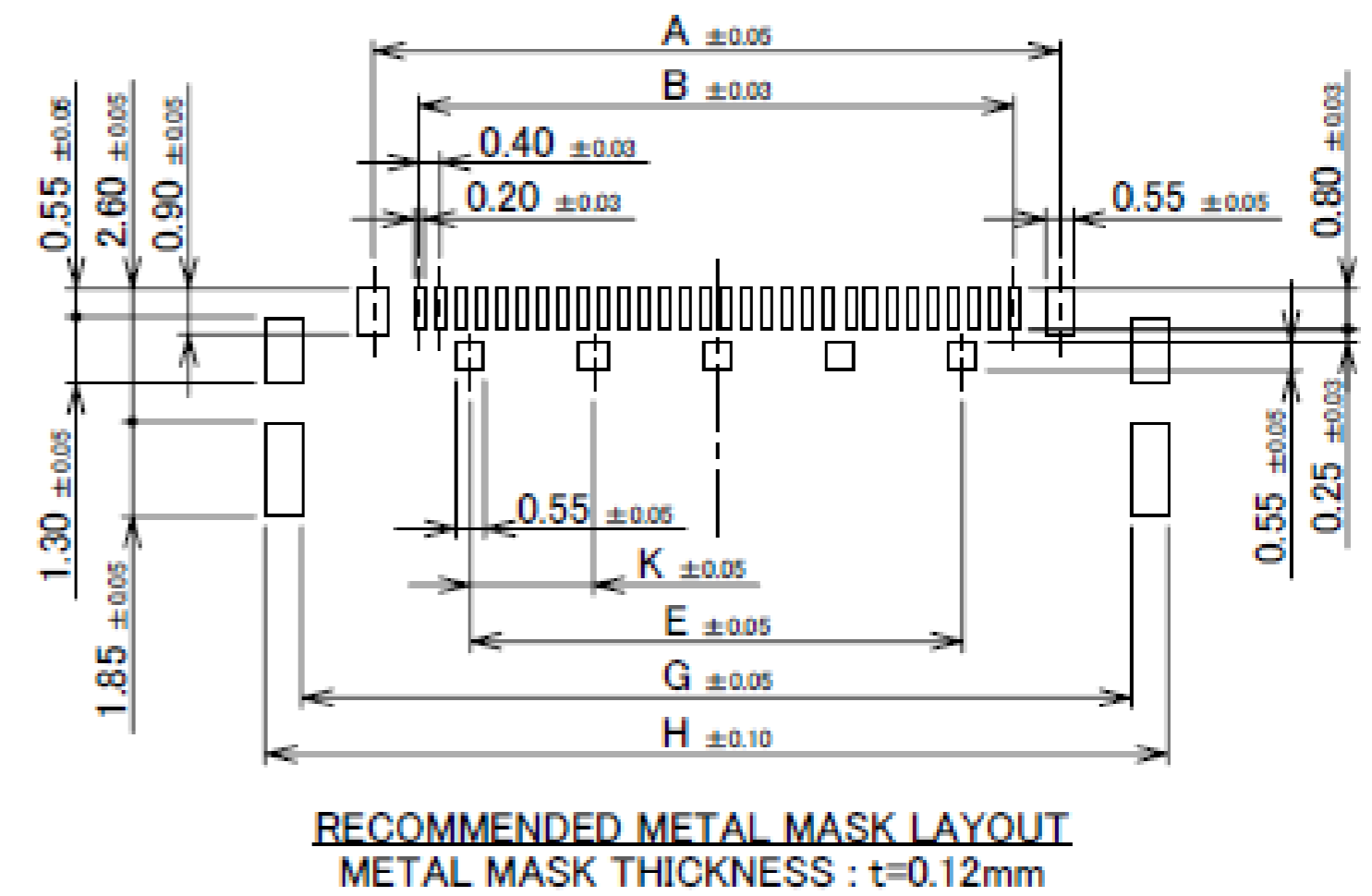
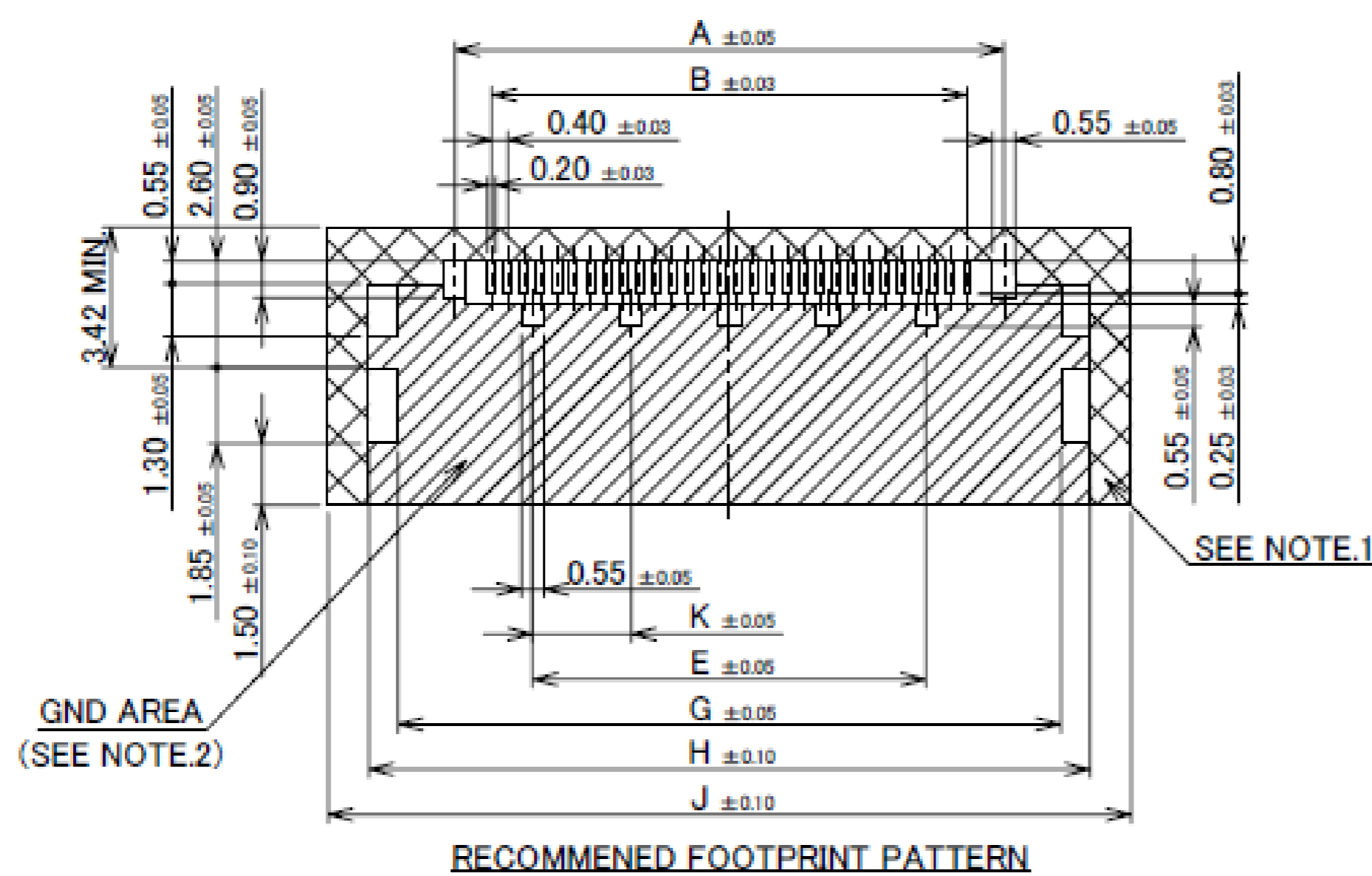
PART NO.
20525-##*E-02

## BOTTOM VIEW



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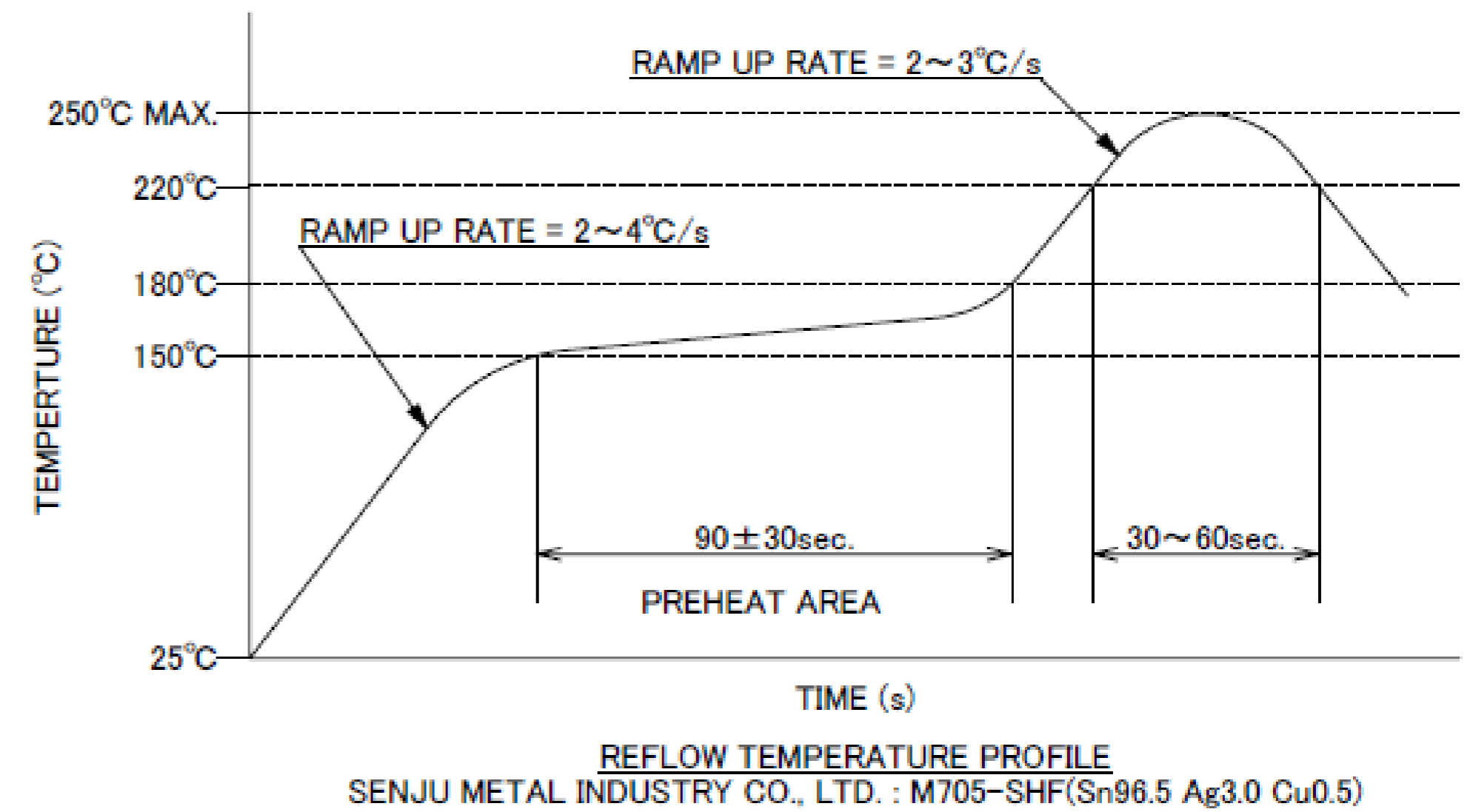
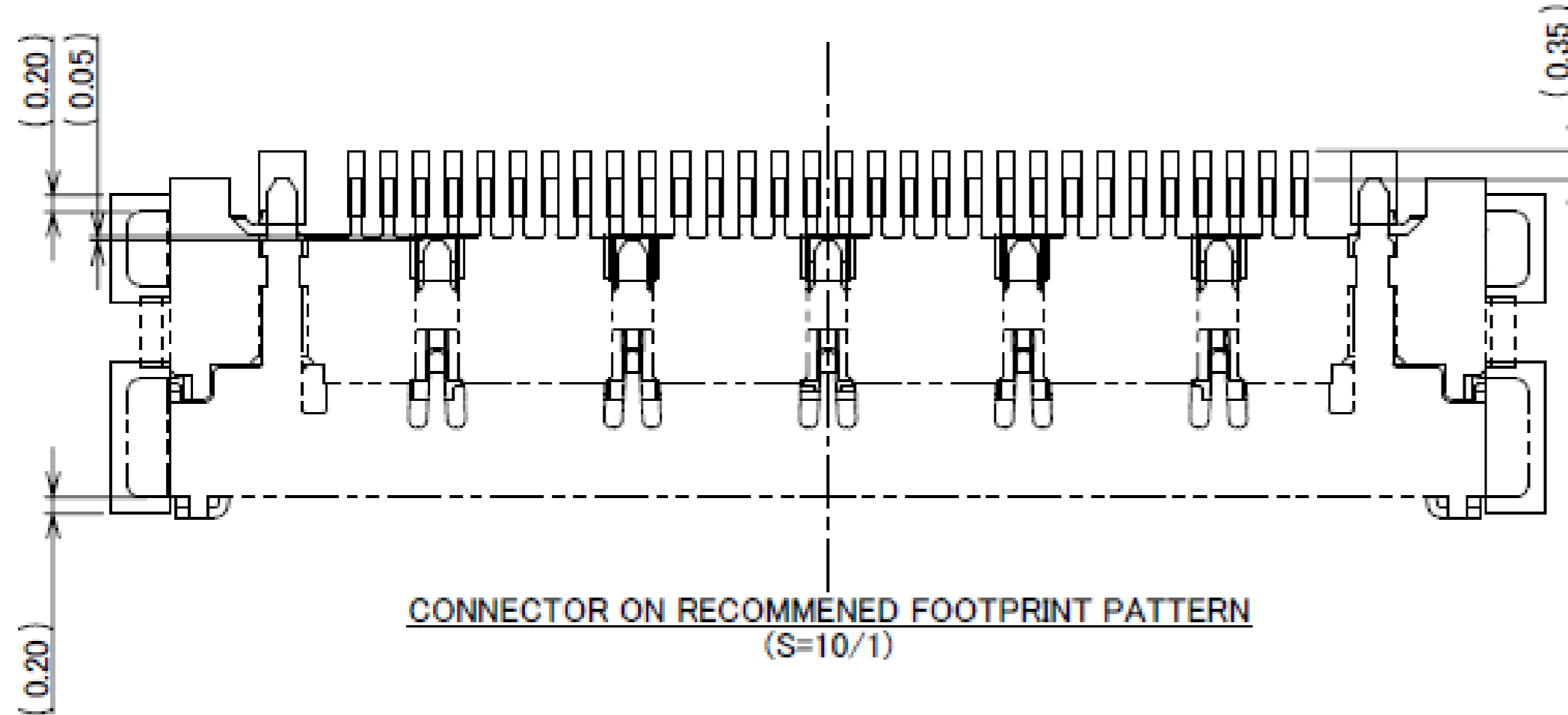
PART NO.	POS.	A	B	E	G	H	J	K
20525-#10E-02	10	5.40	3.60	-	8.18	9.60	11.60	-
20525-#12E-02	12	6.20	4.40	2.40	8.98	10.40	12.40	-
20525-#20E-02	20	9.40	7.60	4.80	12.18	13.60	15.60	2.40
20525-#30E-02	30	13.40	11.60	9.60	16.18	17.60	19.60	2.40
20525-#40E-02	40	17.40	15.60	12.00	20.18	21.60	23.60	2.40
20525-#50E-02	50	21.40	19.60	16.80	24.18	25.60	27.60	2.80
20525-#60E-02	60	25.40	23.60	19.20	28.18	29.60	31.60	3.20



- 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.

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# Receptacle Assembly



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FOR CABLINE-CAF PLUG SHELL ASSEMBLY (DWG NO. 20858)

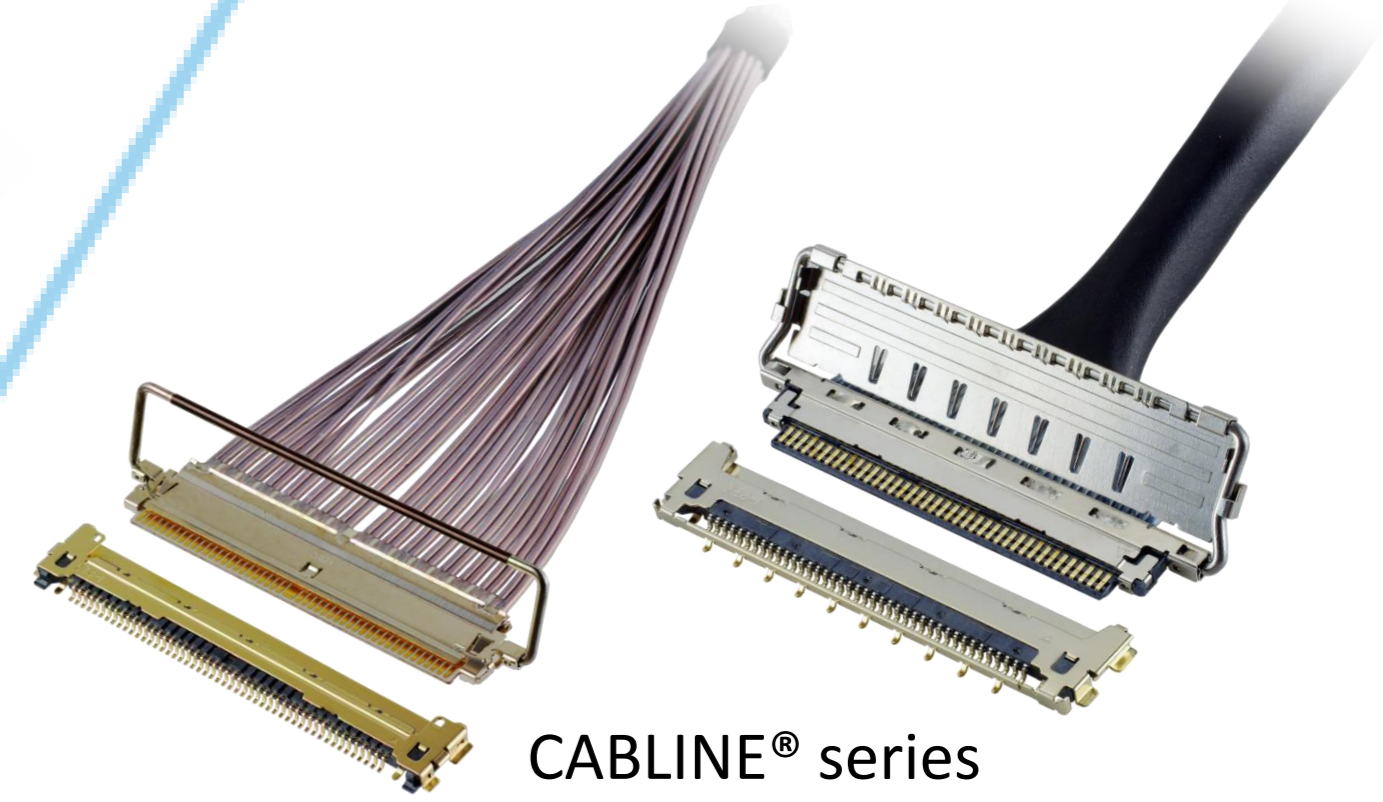
ITEMS	SPECIFICATION
RATING VOLTAGE	100V AC (PER CONTACT PIN)
RATING AMPERAGE (FOR CONTACT)	0.5A AC/DC (PER CONTACT PIN) ※AVAILABLE UP TO 14PIN 0.3A AC/DC (PER CONTACT PIN) ※AVAILABLE FOR ALL PIN ※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION.
OPERATING TEMPERATURE	233~358K(-40°C~+85°C)
OPERATING HUMIDITY	85% MAX.
CONTACT RESISTANCE (FOR SIGNAL CONTACT)	INITIAL : 60mohm MAX. / AFTER TEST : <math>\triangleleft</math>40mohm MAX.
GROUND SHELL RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : <math>\triangleleft</math>40mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER TEST)	40P : 11.07N MAX. 40P : 16.61N MAX.
UNMATING FORCE (INITIAL / AFTER TEST)	30P : 1.44N MIN. 40P : 2.16N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-2465
TEST REPORT	TR-18016
PACKING STANDARD	300-824
INSTRUCTION MANUAL	HIM-18016
APPEARANCE CRITERIA NO.	QLS-A***

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# Custom Connectors Available

 RF Connectors

MHF® series



CABLINA® series



Micro-Coaxial/Twinax Connectors

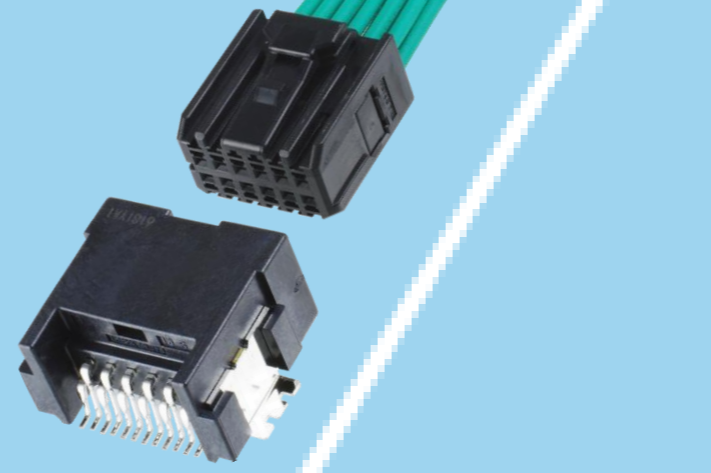


Wire-to-Board Connectors/Terminals

AP series



ISH® series



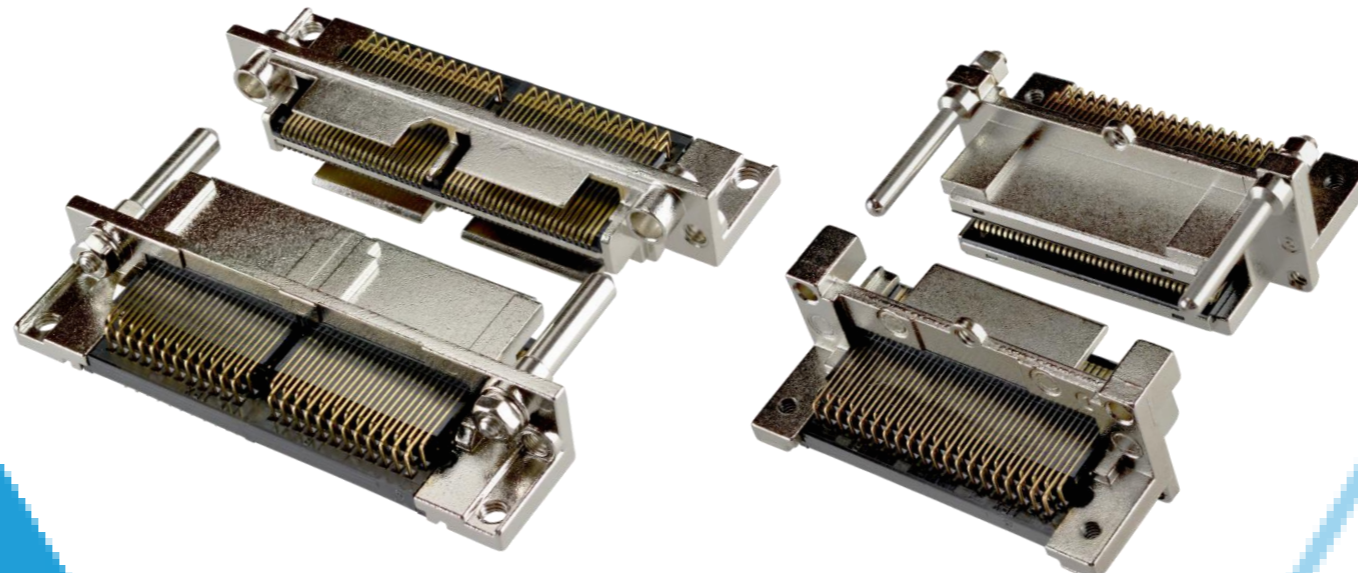
NOVASTACK® series



Board-to-Board Connectors



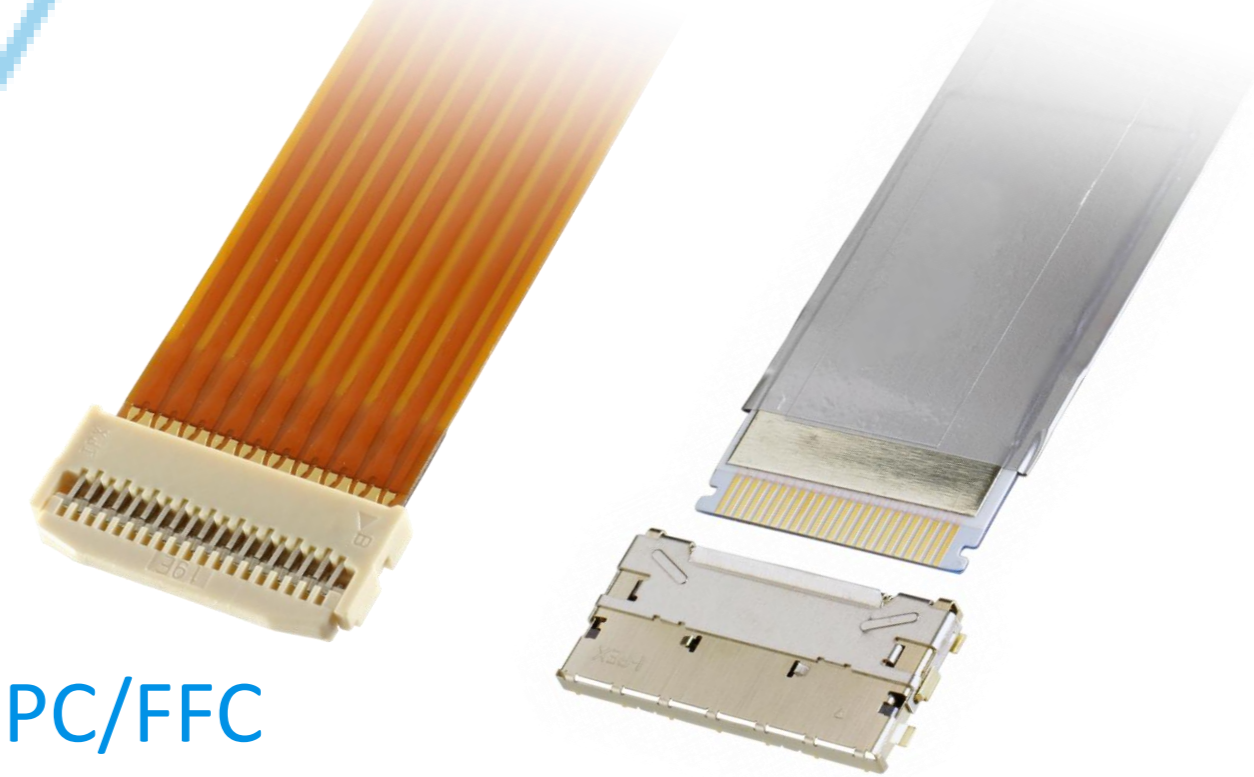
I/O Connectors



MINIDOCK™ series

MINIFLEX® series

EVAFLEX® series



FPC/FFC Connectors



Inquiry



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