

CABLINE®-CA

High-data-rate transfer, mechanical lock with shielding and multi-point ground, 0.4 mm pitch, Horizontal mating type micro-coaxial connector

*For higher data rate up to 64 Gbps PAM4, please review [CABLINE-CAP harness solution](#) that mates to current CABLINE-CA receptacle(20525-050E-02).

Product Specifications:

Mating type	Horizontal
Board Pitch (mm)	0.4
Wiping Length (mm)	0.54
Mated size (mm)	Height 1.0 +/- 0.1
	Width Formula: $6.95 + (0.4 * ?p)$
	Depth 5.73
Pin Counts	Range Up to 60
	Available 10, 12, 20, 30, 40, 50, 60

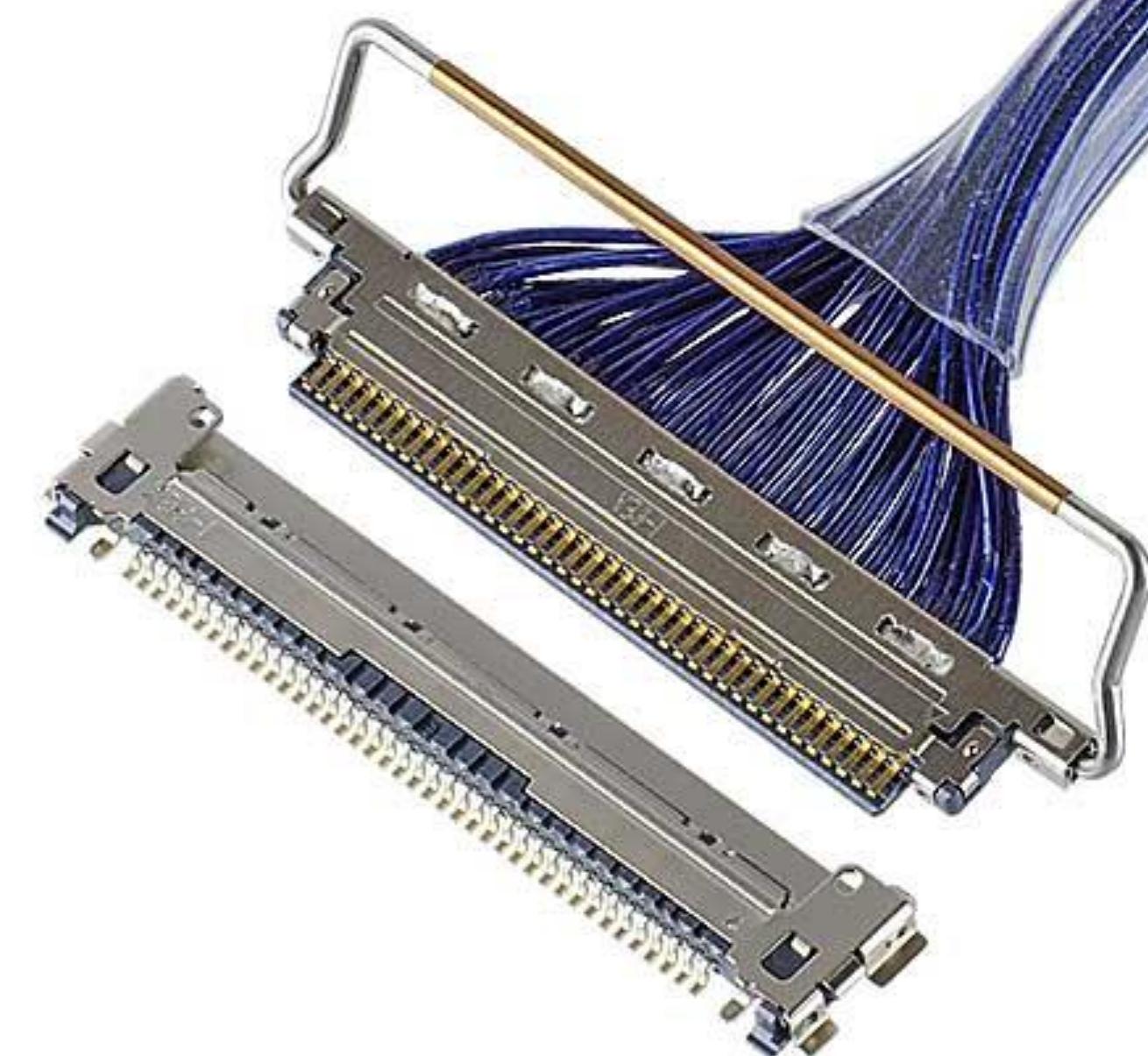
Applicable Cable Size:

Maximum O.D. (mm)	0.4
Micro-Coaxial for Signal (AWG)	45 ohm: #38 or smaller 50 ohm: #40 or smaller
Twinax (AWG)	#40
Discrete (AWG)	#34 or smaller

Applicable Standards (Reference Only):

USB4 Gen3/Thunderbolt 4 (20 Gbps/lane), PCIe Gen 4 (16 GT/s), USB 3.1 Gen 2 (10 Gbps), eDP HBR 3 (8.1 Gbps)

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



► High-Data-Rate Transfer, Ideal for USB4 Gen3/Thunderbolt 4 (20 Gbps/lane) Applications

USB4 Gen3/Thunderbolt 4 (20 Gbps/lane)

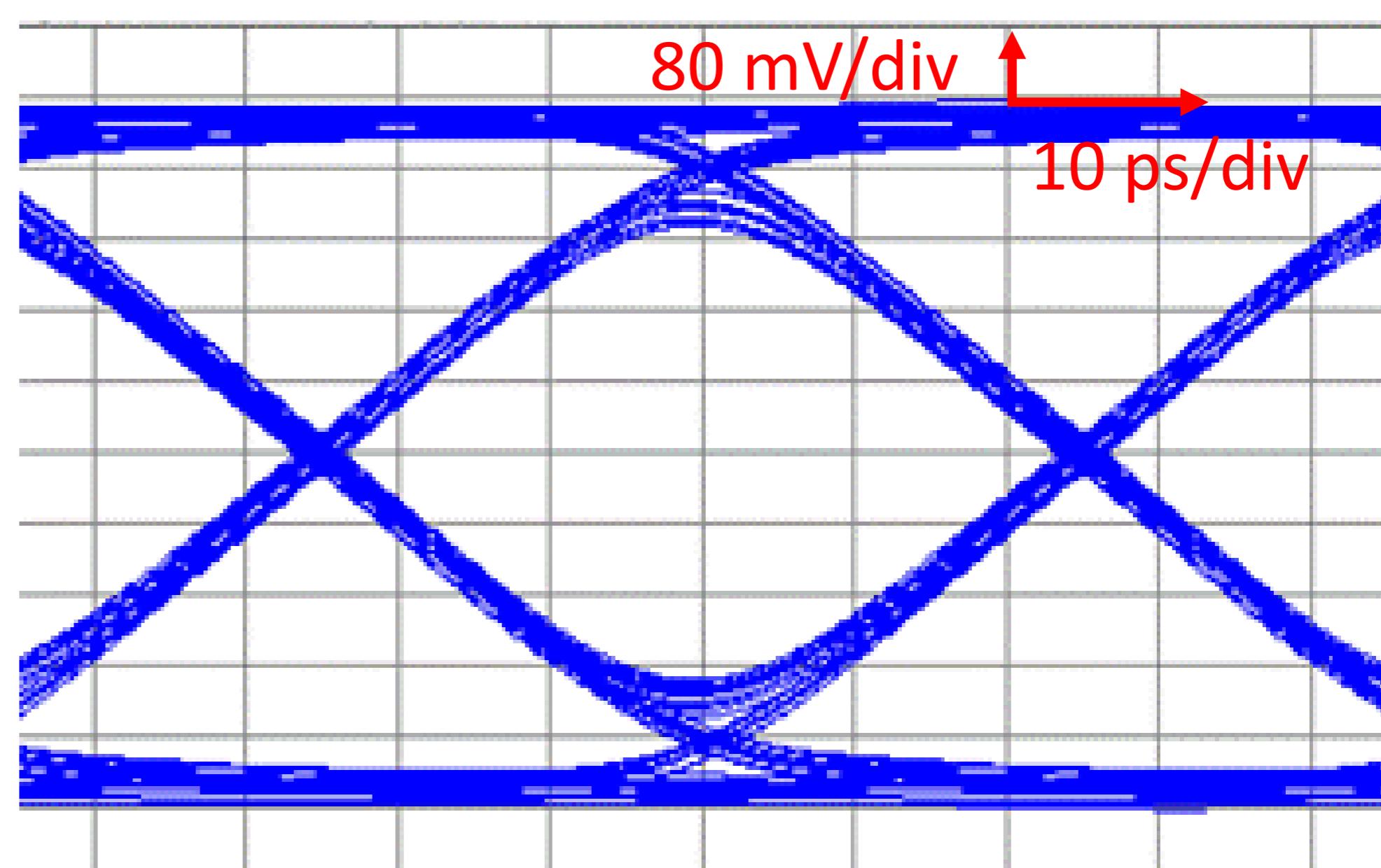
Eye pattern (Differential)

Bit rate : 20 Gbps

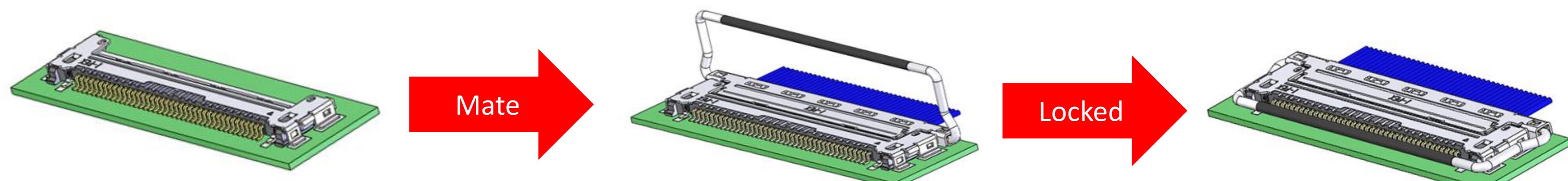
Rise time : 30 ps (10-90%)

Input voltage : 800 mVp-p

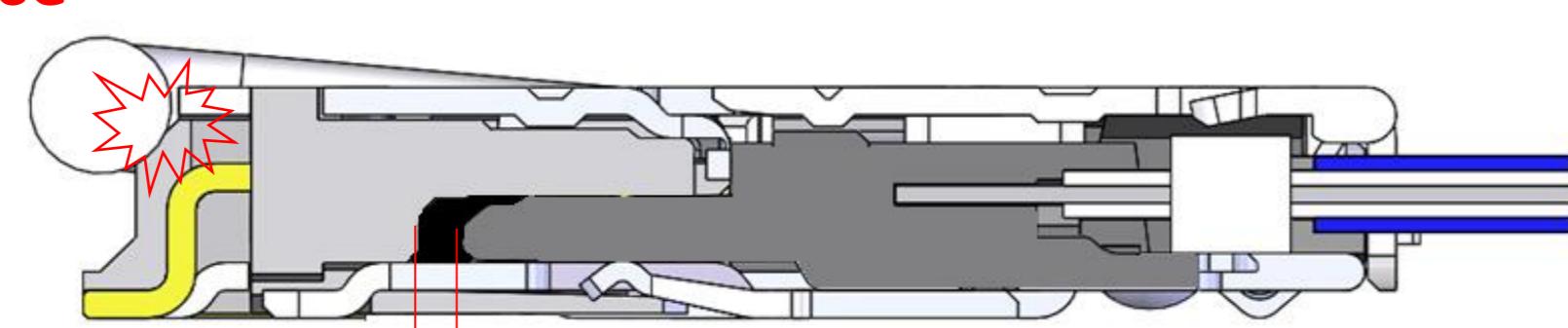
*Please contact I-PEX Connectors for more test details.



► Mechanical Locking Bar Prevents Incomplete Mating and Back-out/Un-mating

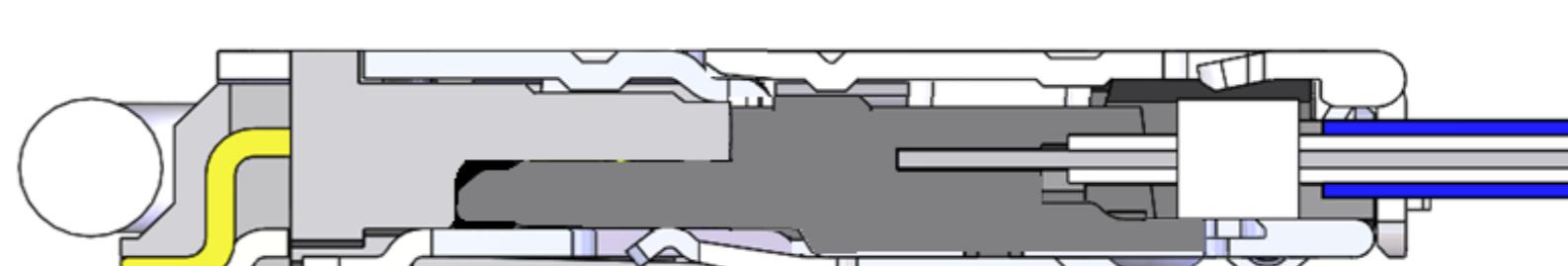


Interference



Incomplete mating

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

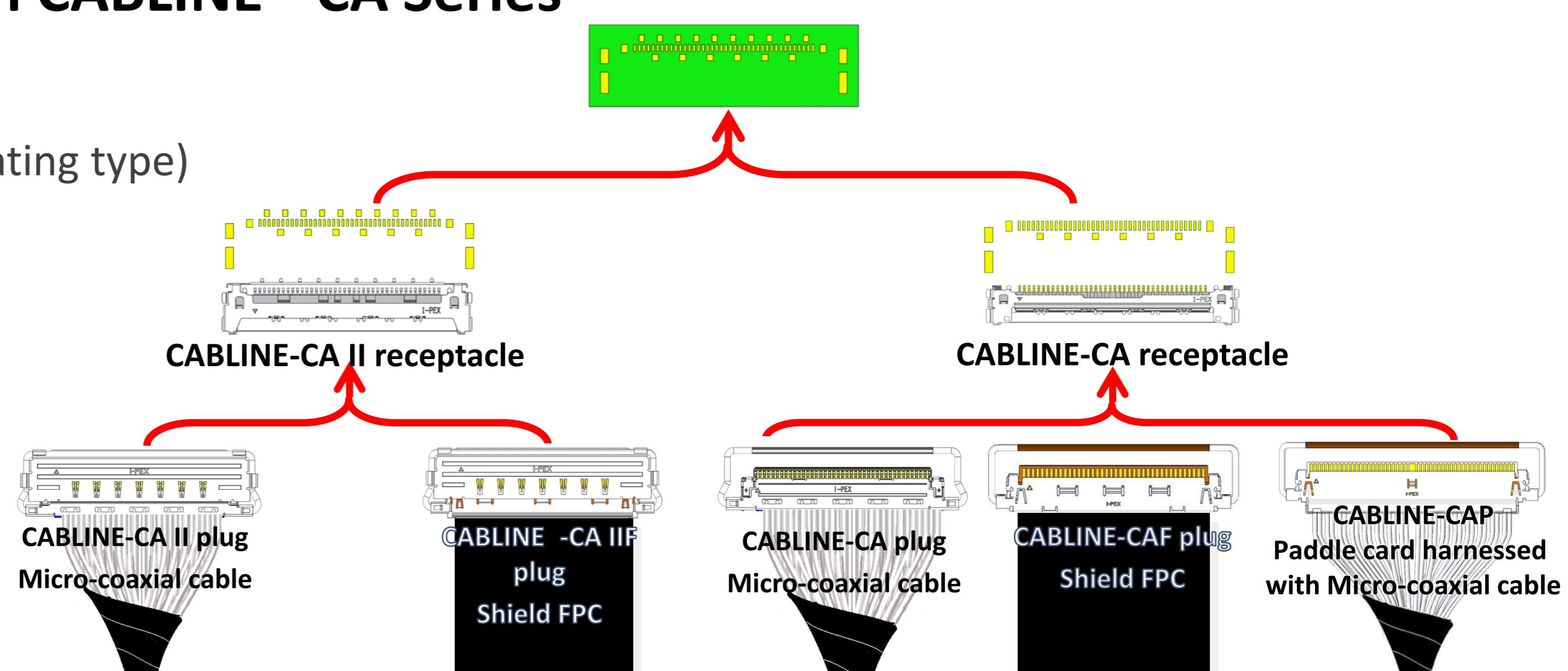


Complete mating

► Multiple Connector Options with CABLINE®-CA Series

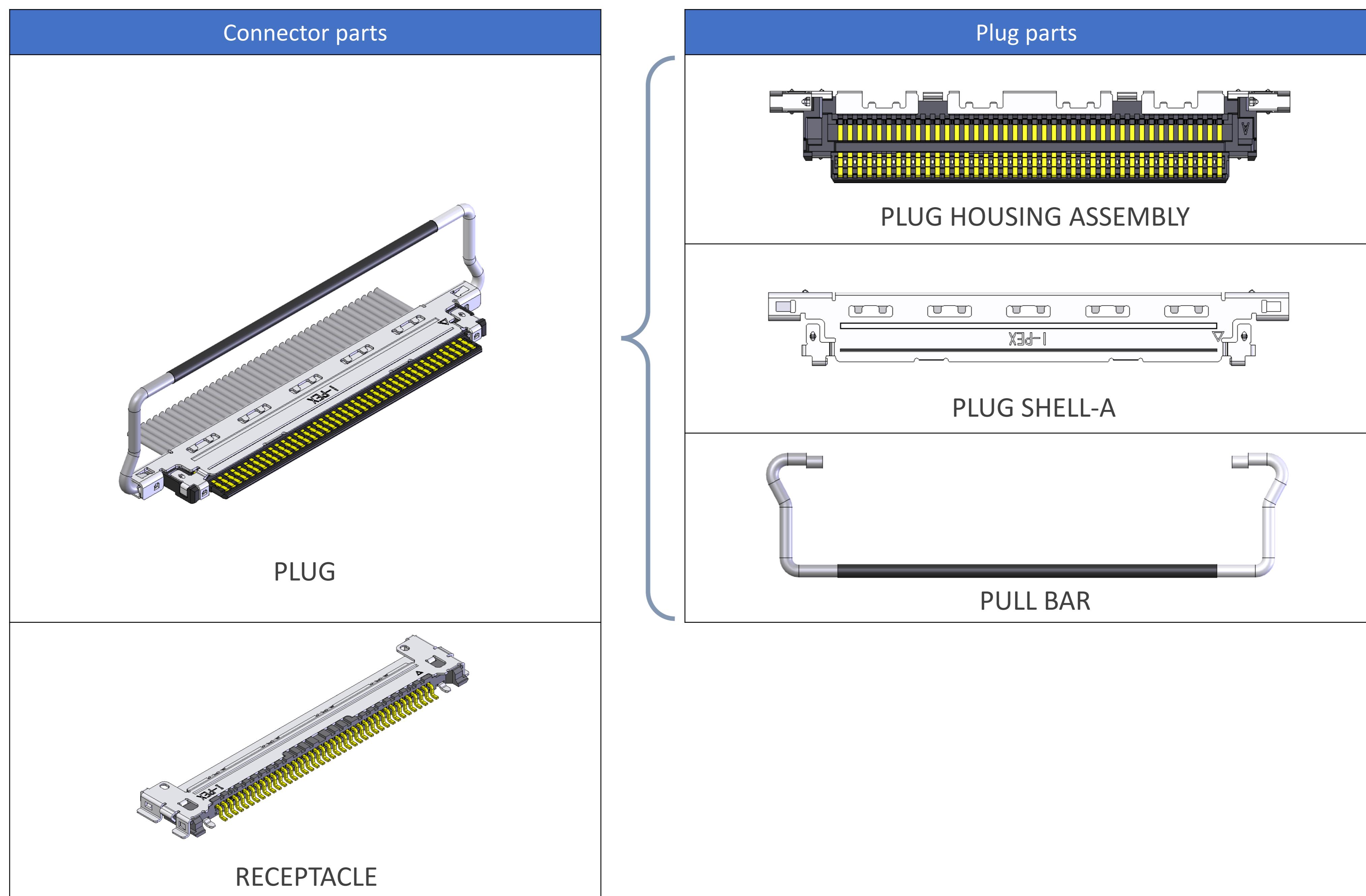
CABLINE-CA series (0.4 mm pitch, horizontal mating type)

CABLINE-CA and CA II receptacles
can be mounted to the same PCB layout.



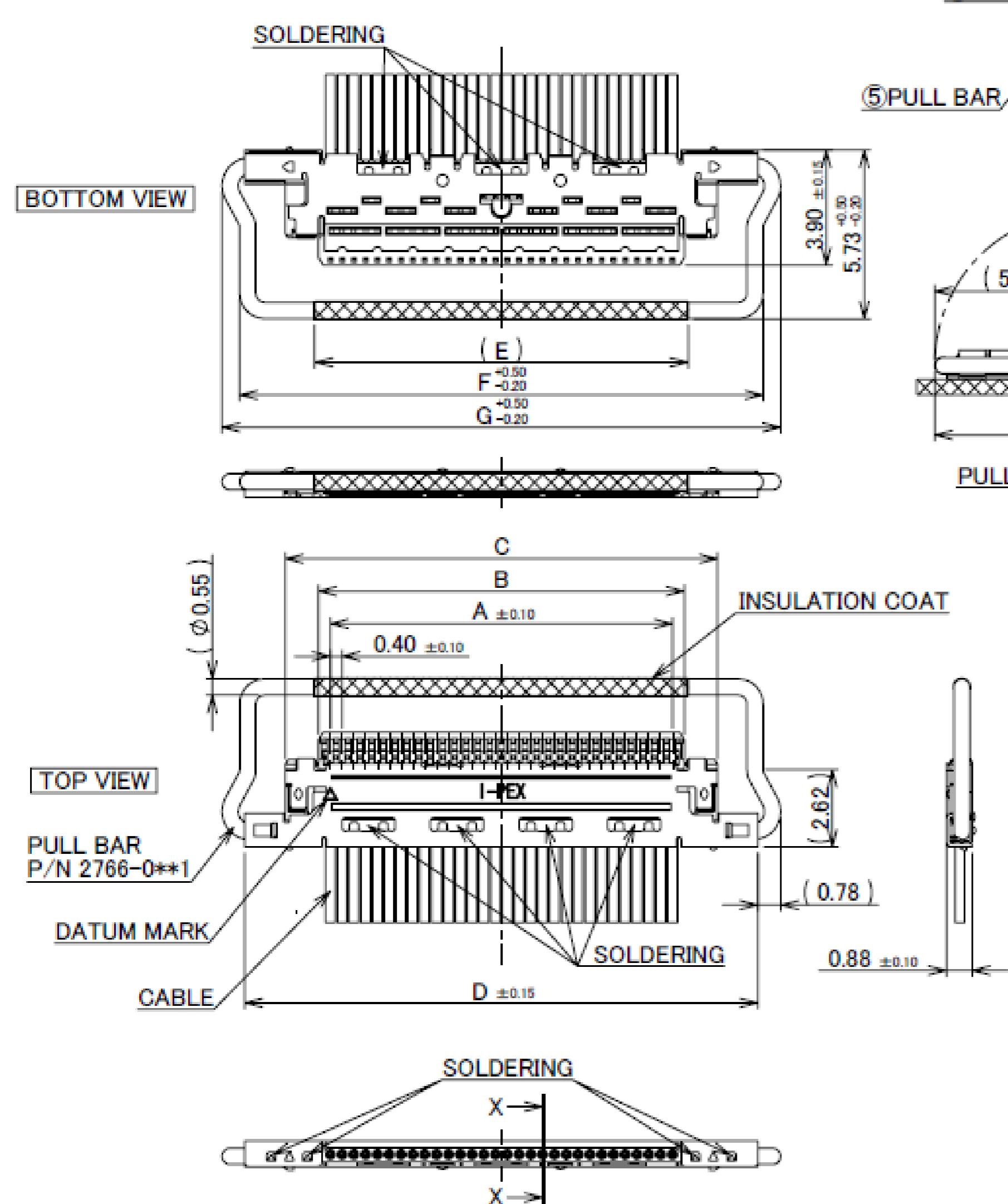
Component Parts Details

Component Parts



Plug for Cable Assembly

Recommended P/N		20633-2**T-01S(12~60P)		20633-310T-01S(10P)	
PART NO.	POS.	A	B	C	D
20633-#10T-01S	10	3.60	4.40	6.66	9.40
20633-#12T-01S	12	4.40	5.20	7.46	10.20
20633-#20T-01S	20	7.60	8.40	10.66	13.40
20633-#30T-01S	30	11.60	12.40	14.66	17.40
20633-#40T-01S	40	15.60	16.40	18.66	21.40
20633-#50T-01S	50	19.60	20.40	22.66	25.40
20633-#60T-01S	60	23.60	24.40	26.66	29.40
		24.65	24.65	29.75	30.95



P/N : 20633- # ** T-0 # S

1 : WITH PULL BAR
2 : WITHOUT PULL BAR
Pos.
SEE TABLE.1

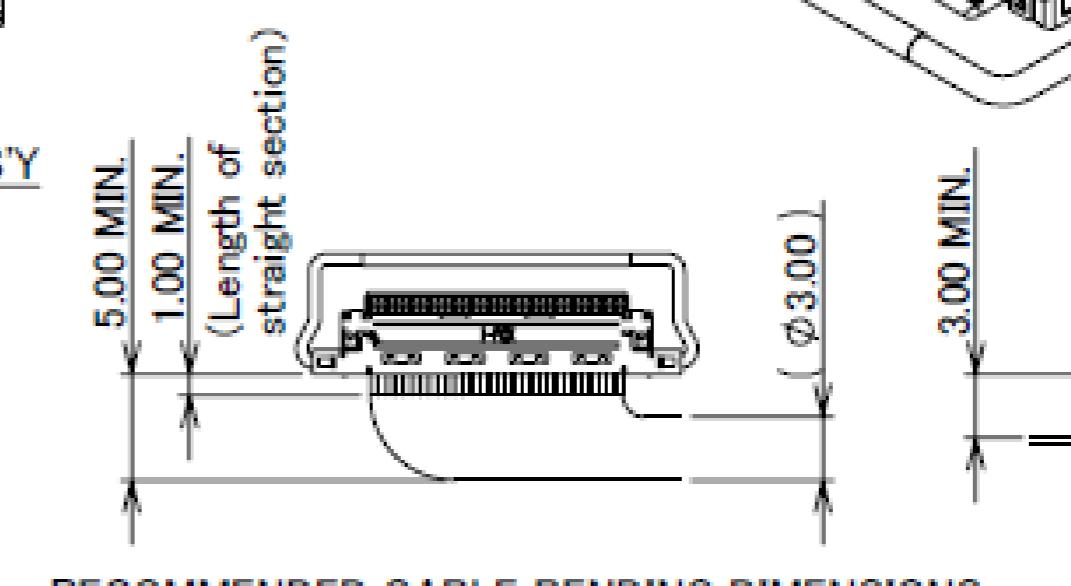
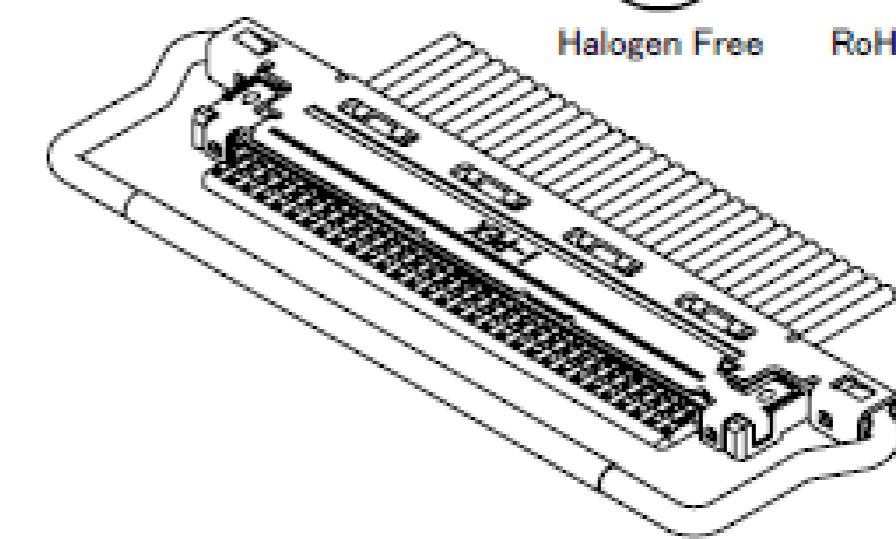
WITH PULL BAR

HF

Halogen Free

RoHS

RoHS Compliant



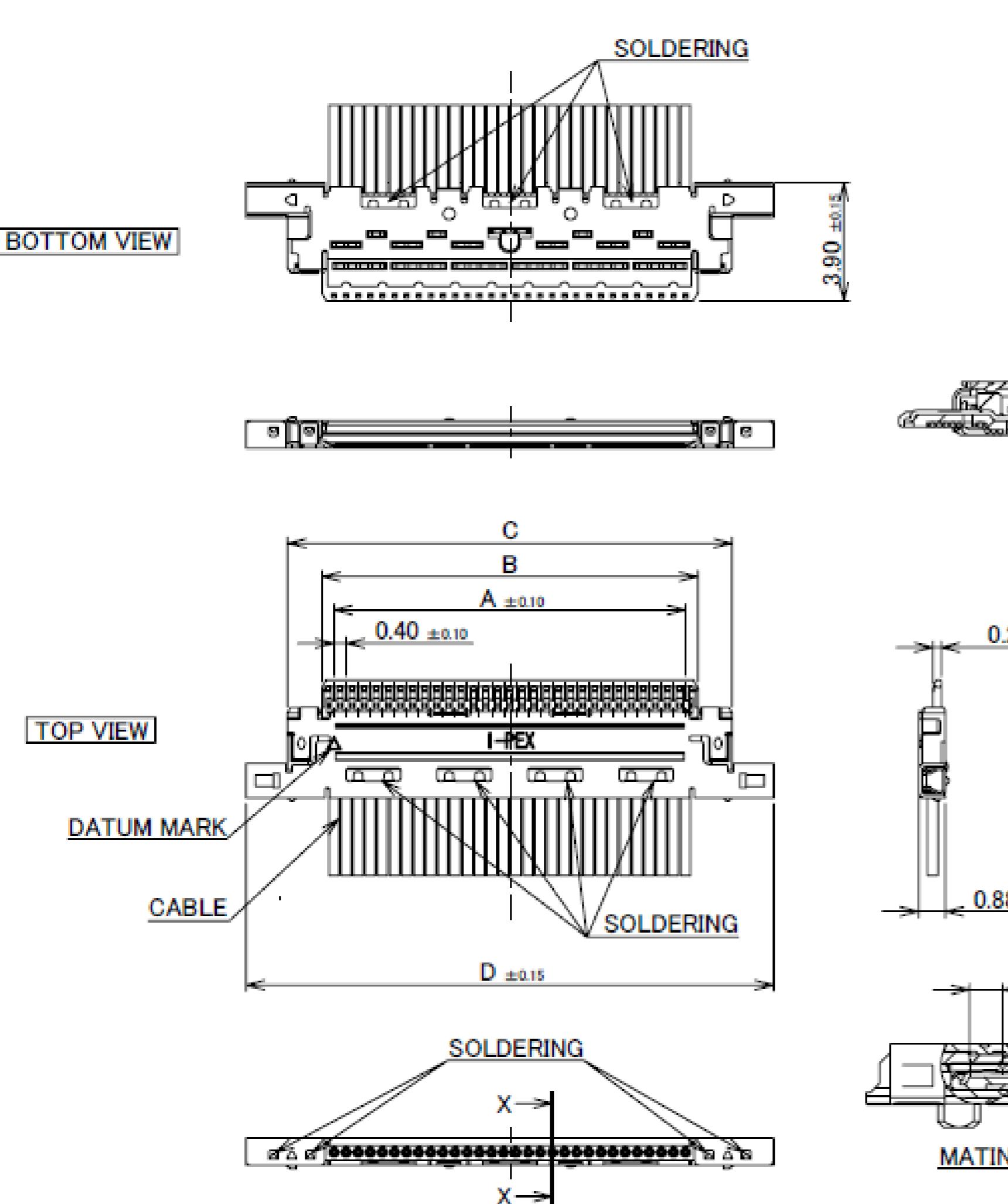
PART NO.	CABLE ASS'Y PART NO.	HOUSING ASS'Y PART NO.	SHELL A PART NO.	PULL BAR PART NO.
20633-2**T-01S	20634-1**T-02	2764-0**1-002		
20633-3**T-01S	20634-2**T-02	2764-0**1-003		2766-0**1

PART NO.	CONTACT FINISH	SHELL A FINISH	SHELL B FINISH
20633-2**T-0#S	CONTACT AREA Au 0.1 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA Au 0.05 μ m MIN. OVER Ni 1.00 μ m MIN.	TOP SIDE Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN. BOTTOM SIDE Au 0.03 μ m MIN. (THERE IS THE POSSIBILITY THAT Au ATTACHES RANDOMLY) Au 1.00 μ m MIN. (THERE IS THE POSSIBILITY THAT Au ATTACHES RANDOMLY)	TOP SIDE Ni 1.00 μ m MIN. (THERE IS THE POSSIBILITY THAT Au ATTACHES RANDOMLY) Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.
20633-3**T-0#S	CONTACT AREA Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.	PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN.	PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN.

NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS
5	PULL BAR	SUS	
4	SHELL B	PHOSPHOR BRONZE	SEE ABOVE TABLE.1
3	SHELL A	PHOSPHOR BRONZE	SEE ABOVE TABLE.1
2	CONTACT	PHOSPHOR BRONZE	SEE ABOVE TABLE.1
1	HOUSING	LCP	UL94V-0, BLACK

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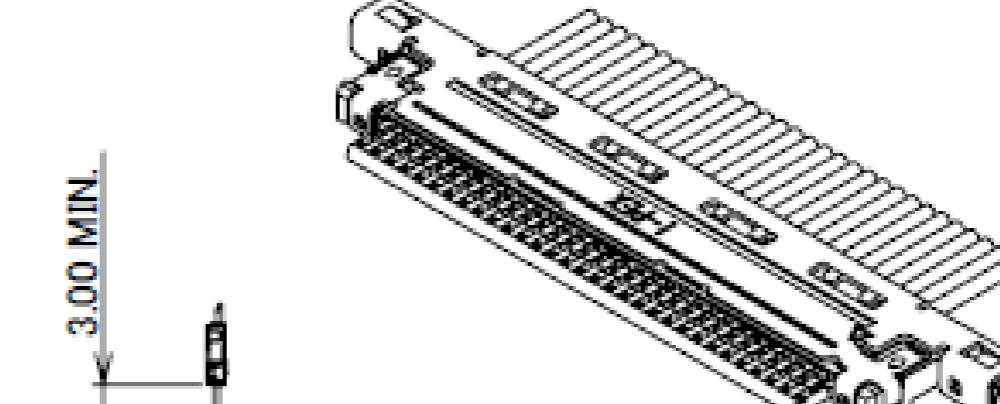
Recommended P/N		20633-2**T-01S(12~60P)	20633-310T-01S(10P)		
PART NO.	POS.	A	B	C	D
20633-#10T-02S	10	3.60	4.40	6.66	9.40
20633-#12T-02S	12	4.40	5.20	7.46	10.20
20633-#20T-02S	20	7.60	8.40	10.66	13.40
20633-#30T-02S	30	11.60	12.40	14.66	17.40
20633-#40T-02S	40	15.60	16.40	18.66	21.40
20633-#50T-02S	50	19.60	20.40	22.66	25.40
20633-#60T-02S	60	23.60	24.40	26.66	29.40



P/N : 20633- # ** T-0 # S

1 : WITH PULL BAR
2 : WITHOUT PULL BAR
Pos.
SEE TABLE.1 (SHEET1/5)

WITHOUT PULL BAR

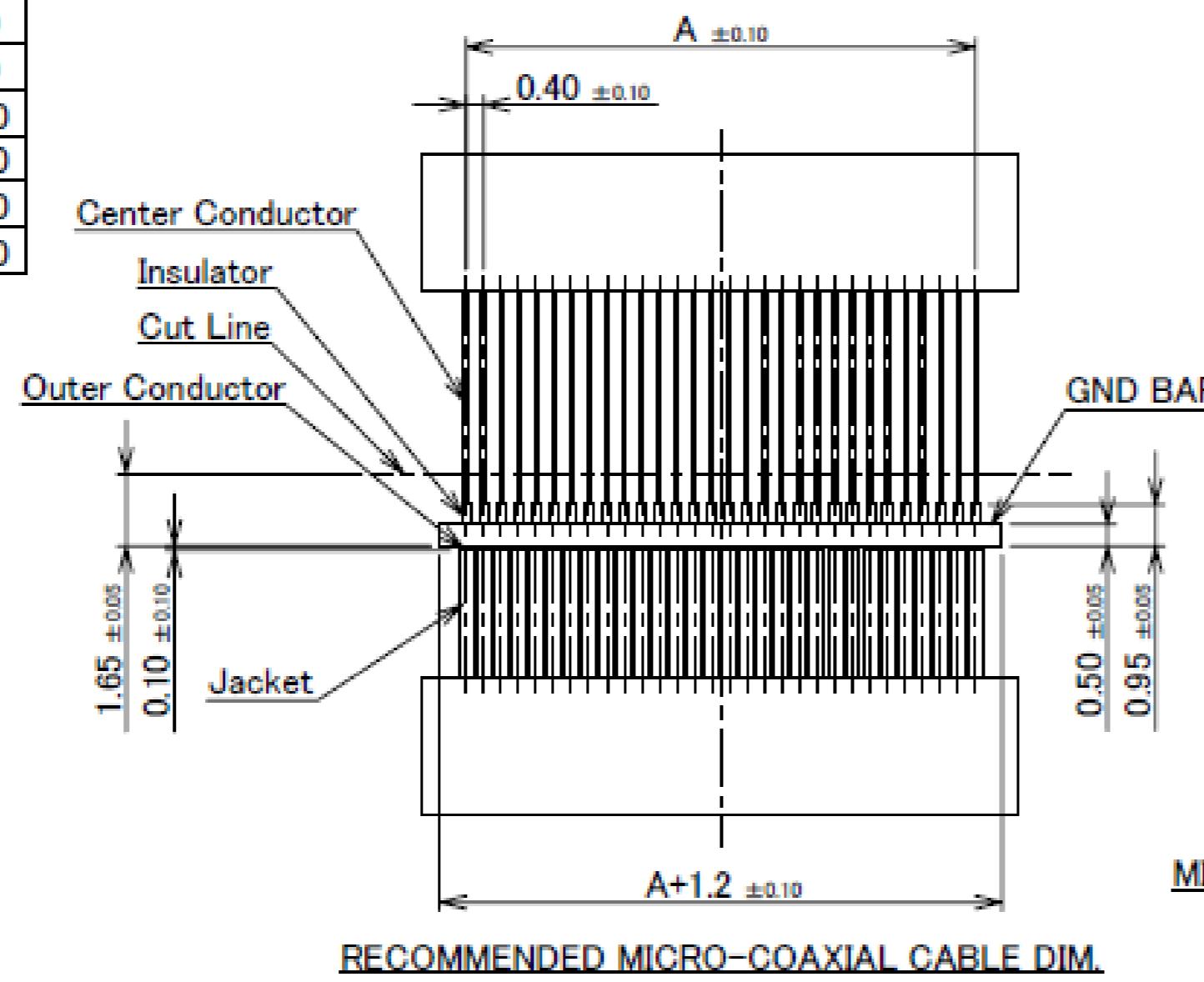


PART NO.	CABLE ASS'Y PART NO.	HOUSING ASS'Y PART NO.	SHELL-A PART NO.	PULL BAR PART NO.
20633-2**T-02S	20634-1**T-02	2764-0**1-002		
20633-3**T-02S	20634-2**T-02	2764-0**1-003		-

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Plug for Cable Assembly

PART NO.	POS.	A
20633-#10T-0#S	10	3.60
20633-#12T-0#S	12	4.40
20633-#20T-0#S	20	7.60
20633-#30T-0#S	30	11.60
20633-#40T-0#S	40	15.60
20633-#50T-0#S	50	19.60
20633-#60T-0#S	60	23.60



CHARACTERISTIC IMPEDANCE MATCHING MICRO-COAXIAL CABLE

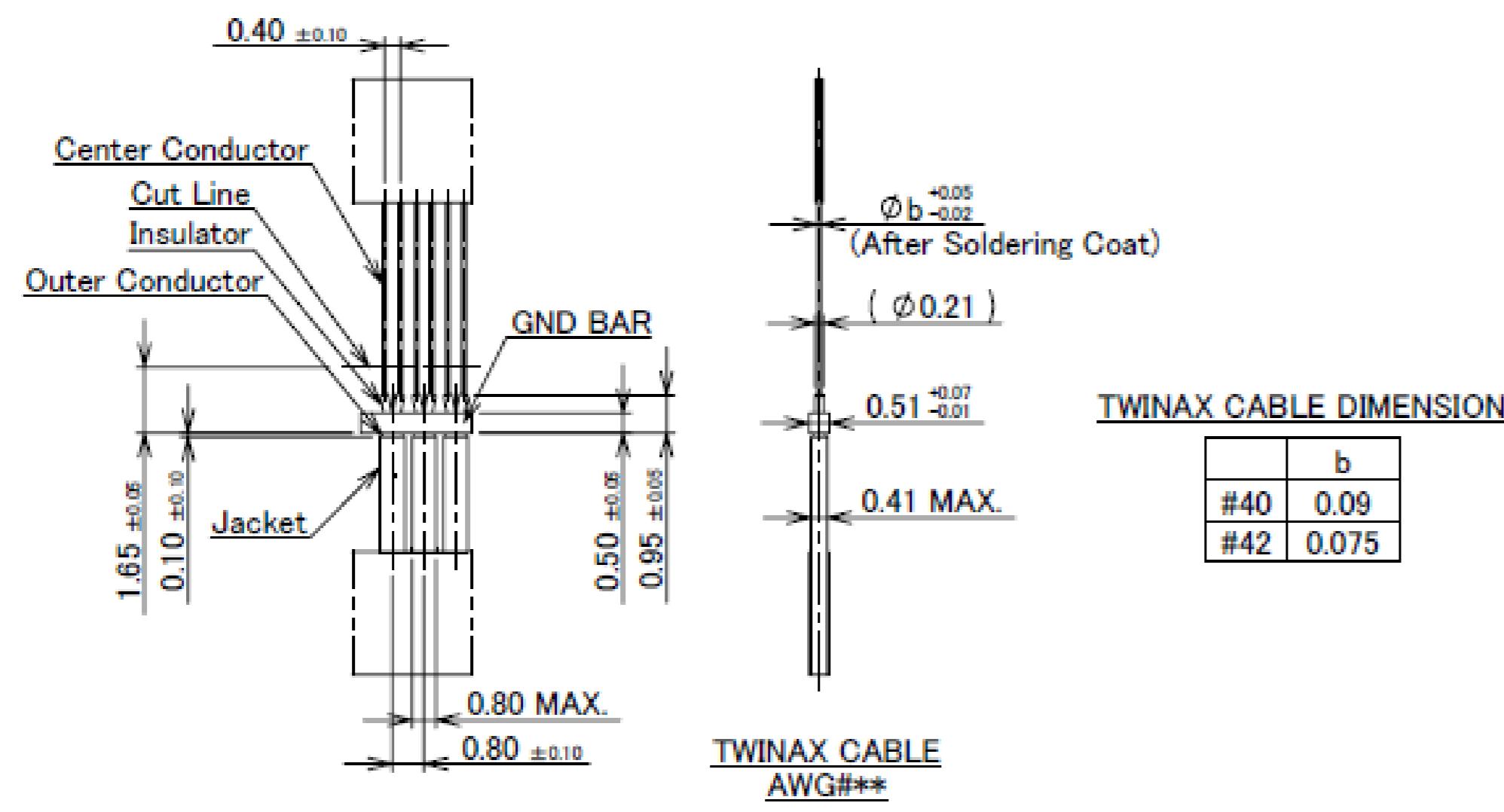
	a
#38	0.12
#40	0.09
#42	0.075
#44	0.063

MICRO-COAXIAL CABLE
AWG##

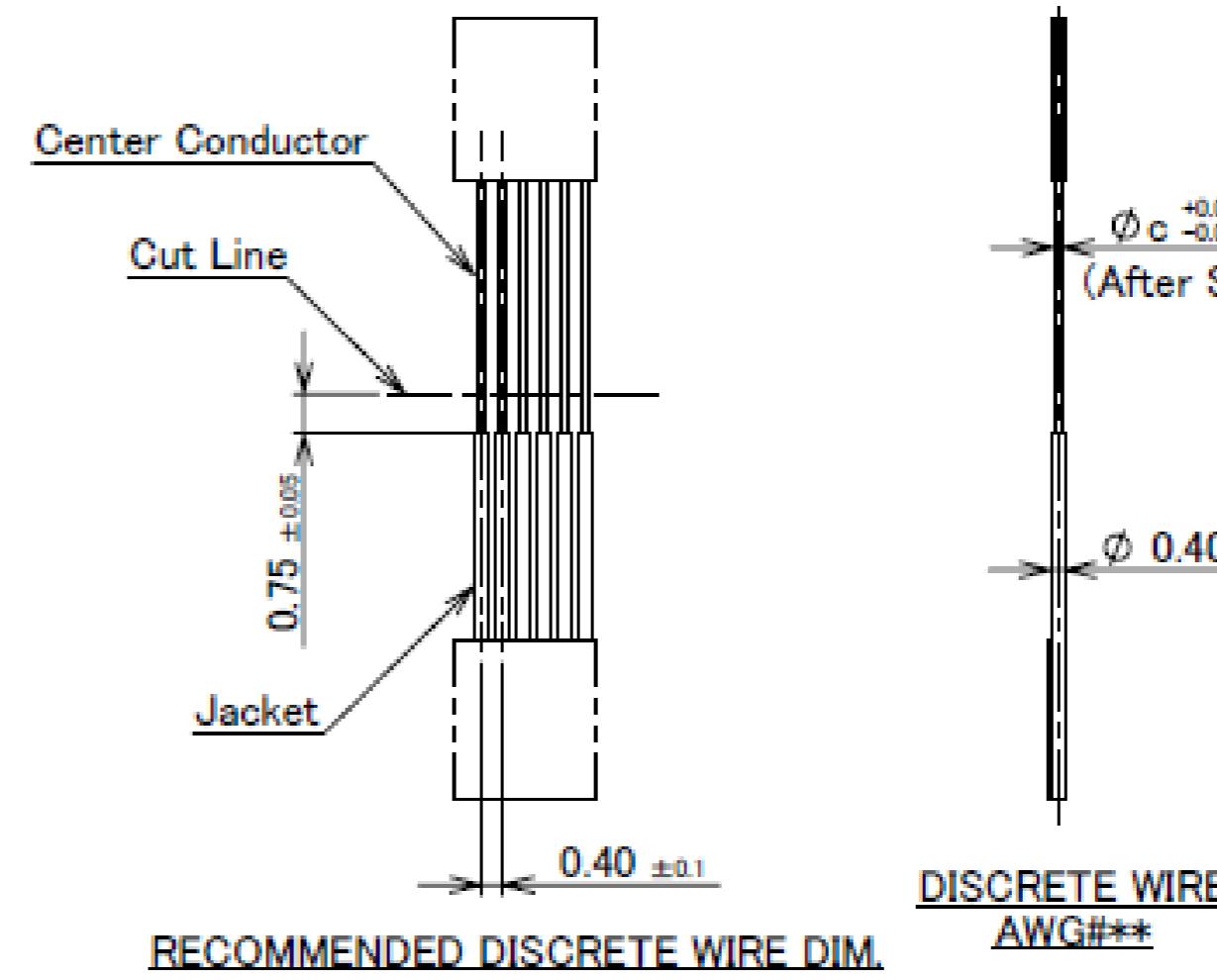
CHARACTERISTIC IMPEDANCE UN-MATCHING MICRO-COAXIAL CABLE

	a
#36	0.15

MICRO-COAXIAL CABLE #36 : NOT RECOMMENDED FOR
HIGH SPEED SIGNAL TRANSFER



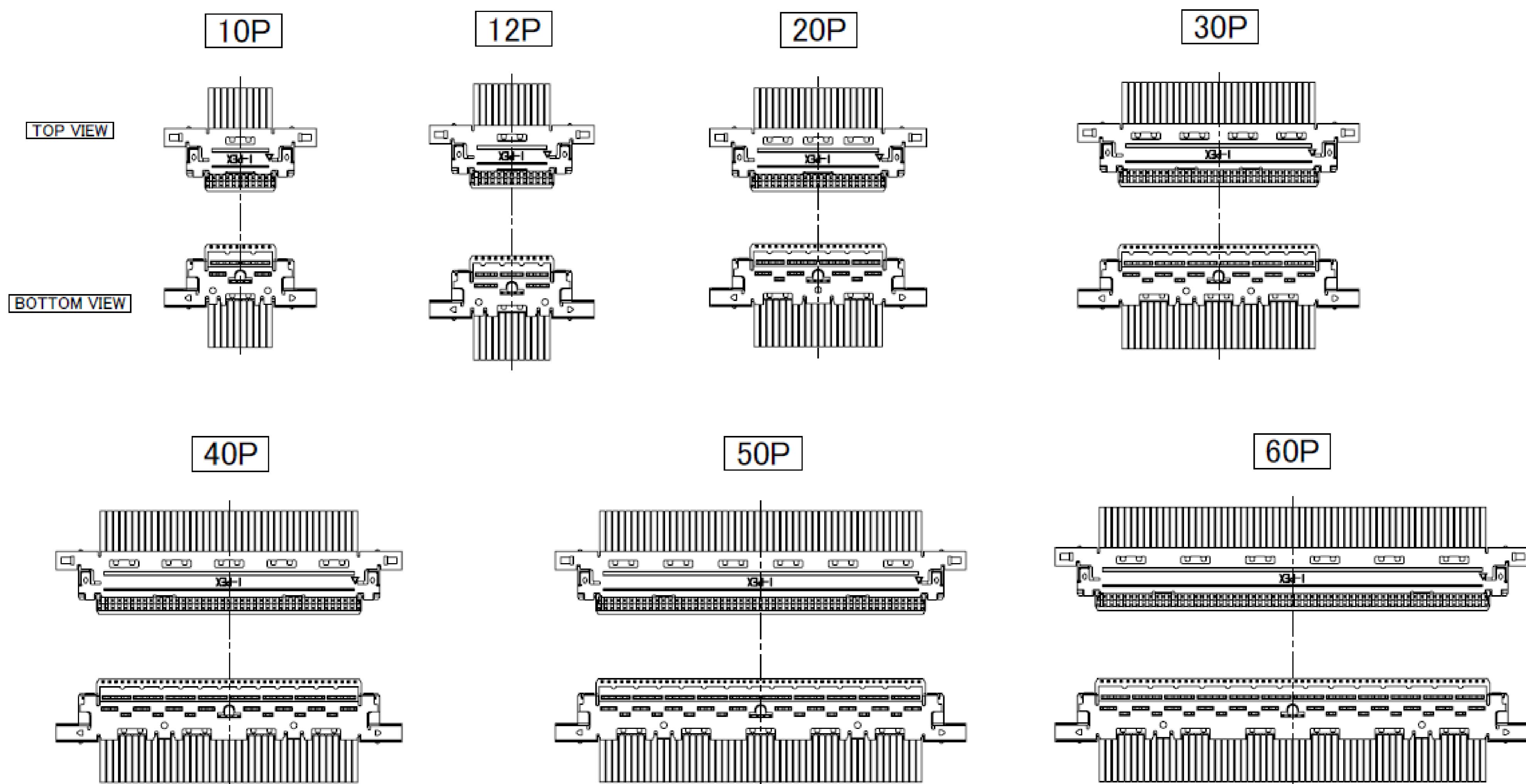
TWINAX CABLE DIMENSION



	c
#34	0.192
#36	0.15

PART NO.
20633-#**T-0#S

THE EXTERNAL APPEARANCE



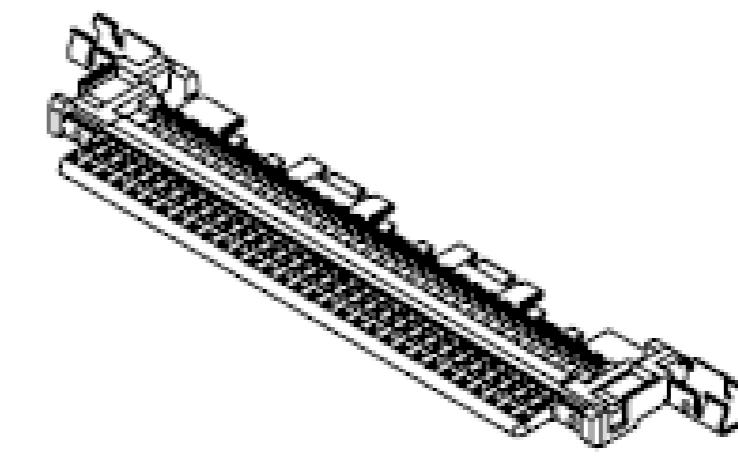
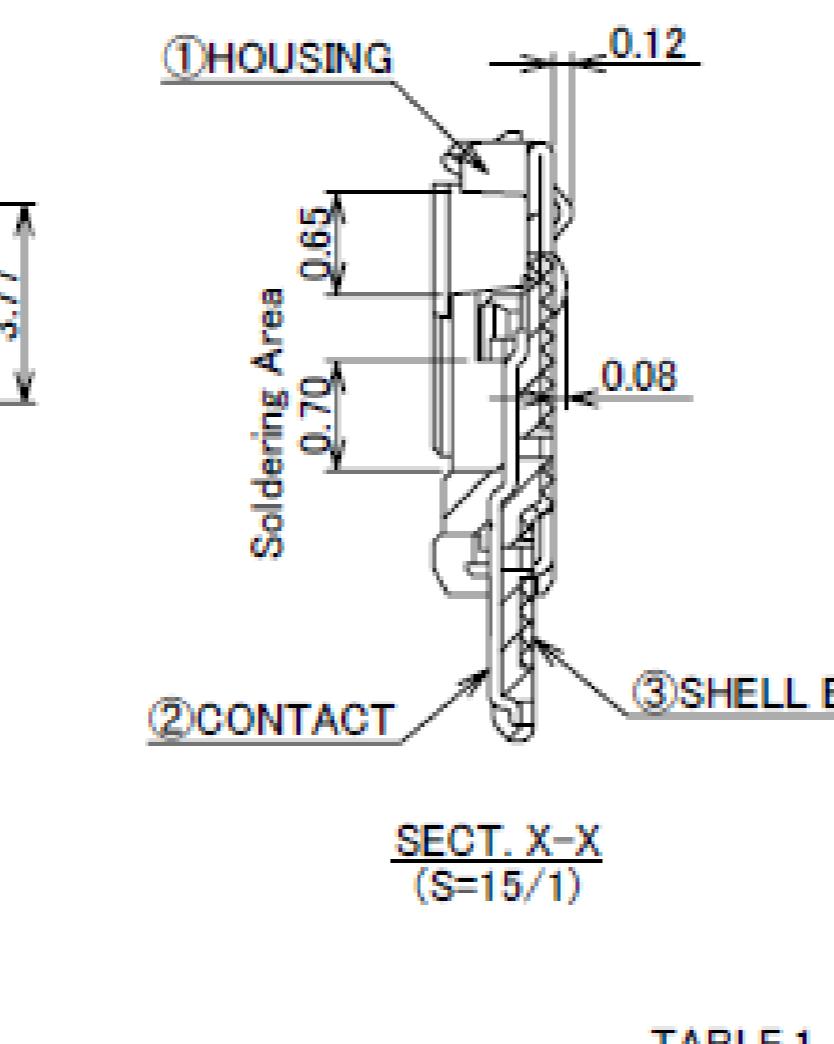
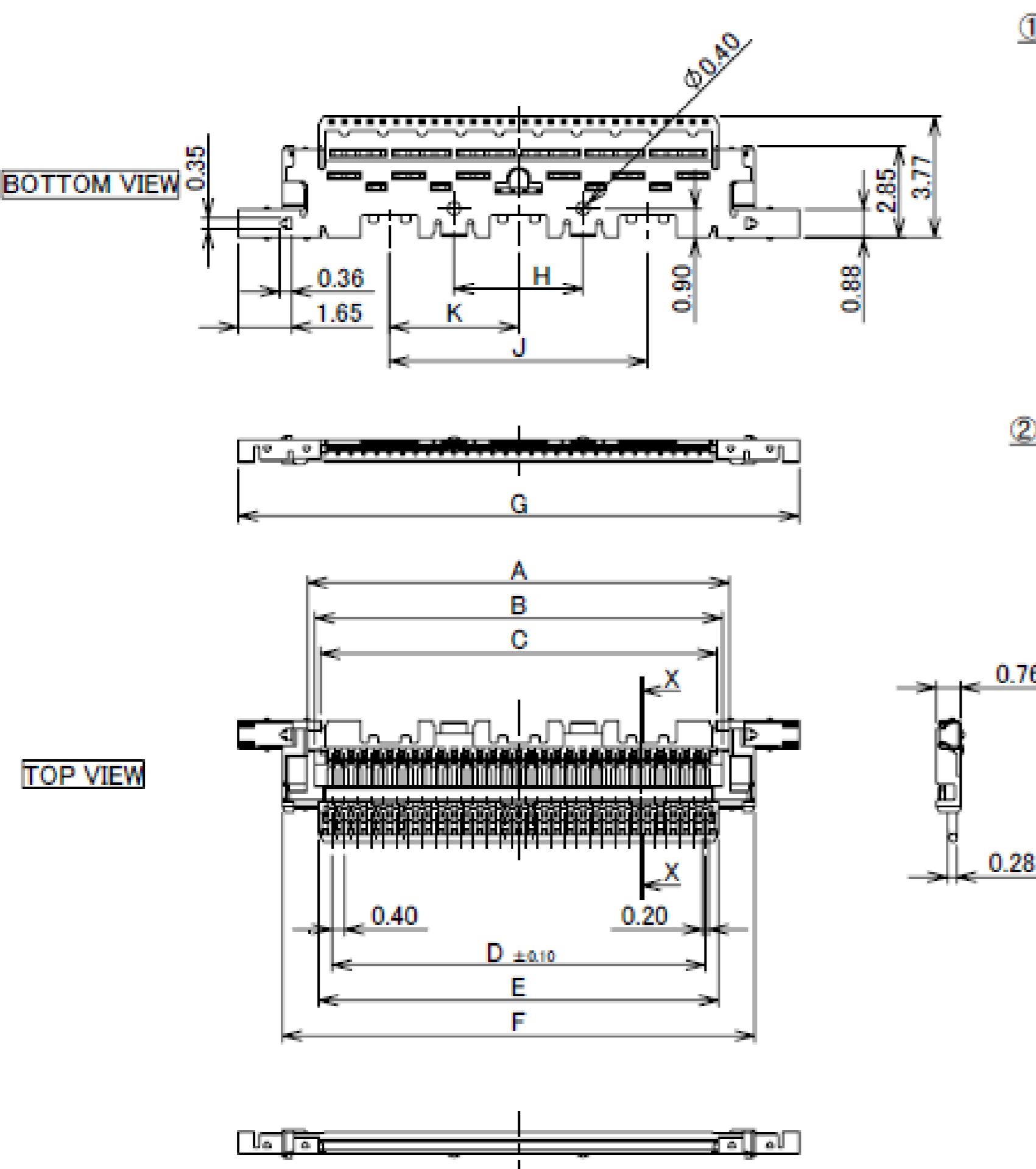
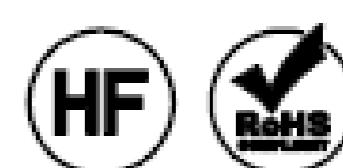
Rev.12

Rev.12

Plug Housing Assembly

Recommended P/N		20634-1**T-02(12~60P)						20634-210T-02(10P)			
PART NO.	Pos.	A	B	C	D	E	F	G	H	J	K
20634-#10T-02	10	5.10	4.65	4.30	3.60	4.40	6.66	9.40	3.40	-	-
20634-#12T-02	12	5.90	5.45	5.10	4.40	5.20	7.46	10.20	4.10	-	-
20634-#20T-02	20	9.10	8.65	8.30	7.60	8.40	10.66	13.40	-	5.00	-
20634-#30T-02	30	13.10	12.65	12.30	11.60	12.40	14.66	17.40	4.00	8.00	4.00
20634-#40T-02	40	17.10	16.65	16.30	15.60	16.40	18.66	21.40	8.00	12.00	4.00
20634-#50T-02	50	21.10	20.65	20.30	19.60	20.40	22.66	25.40	12.00	16.00	4.00
20634-#60T-02	60	25.10	24.65	24.30	23.60	24.40	26.66	29.40	16.00	20.00	4.00

P/N: 20634-#**T-02
POS.
SEE TABLE.1



NOTES
1. THIS PART IS ASSEMBLED WITH SHELL A(P/N 2764-0**1-00#) AND PULL BAR(P/N 2766-0**1) AFTER SOLDERED THE CABLE, AND IT BECOMES P/N 20633-#**T-0#S

TABLE.1

PART NO.	CONTACT FINISH	SHELL B FINISH
20634-1**T-02	CONTACT AREA Au 0.1 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA Au 0.05 μ m MIN. OVER Ni 1.00 μ m MIN.	TOP SIDE Ni 1.00 μ m MIN.(THERE IS THE POSSIBILITY THAT Au ATTACHES RANDOMLY) BOTTOM SIDE Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.
20634-2**T-02	CONTACT AREA Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.	PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN. Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.

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

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Plug Shell-A

Recommended P/N		2764-0**1-002(12~60P)				2764-0101-003(10P)	
PART NO.	A	B	C	D	E		
2764-0101-00#	9.40	3.88	6.66	-	-		
2764-0121-00#	10.20	4.68	7.46	-	-		
2764-0201-00#	13.40	7.88	10.66	2.50	5.00 [= 2.50 x (3 - 1)]		
2764-0301-00#	17.40	11.88	14.66	3.00	9.00 [= 3.00 x (4 - 1)]		
2764-0401-00#	21.40	15.88	18.66	3.25	13.00 [= 3.25 x (5 - 1)]		
2764-0501-00#	25.40	19.88	22.66	3.40	17.00 [= 3.40 x (6 - 1)]		
2764-0601-00#	29.40	23.88	26.66	4.00	20.00 [= 4.00 x (6 - 1)]		

P/N: 2764-0**1-00#
SEE TABLE.1
Pos.

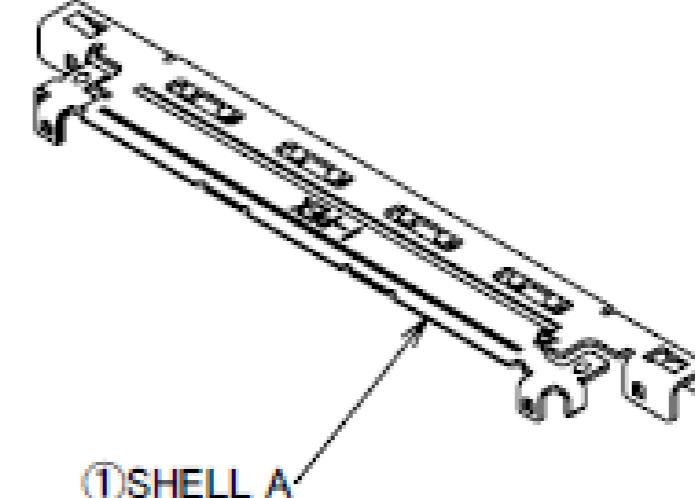
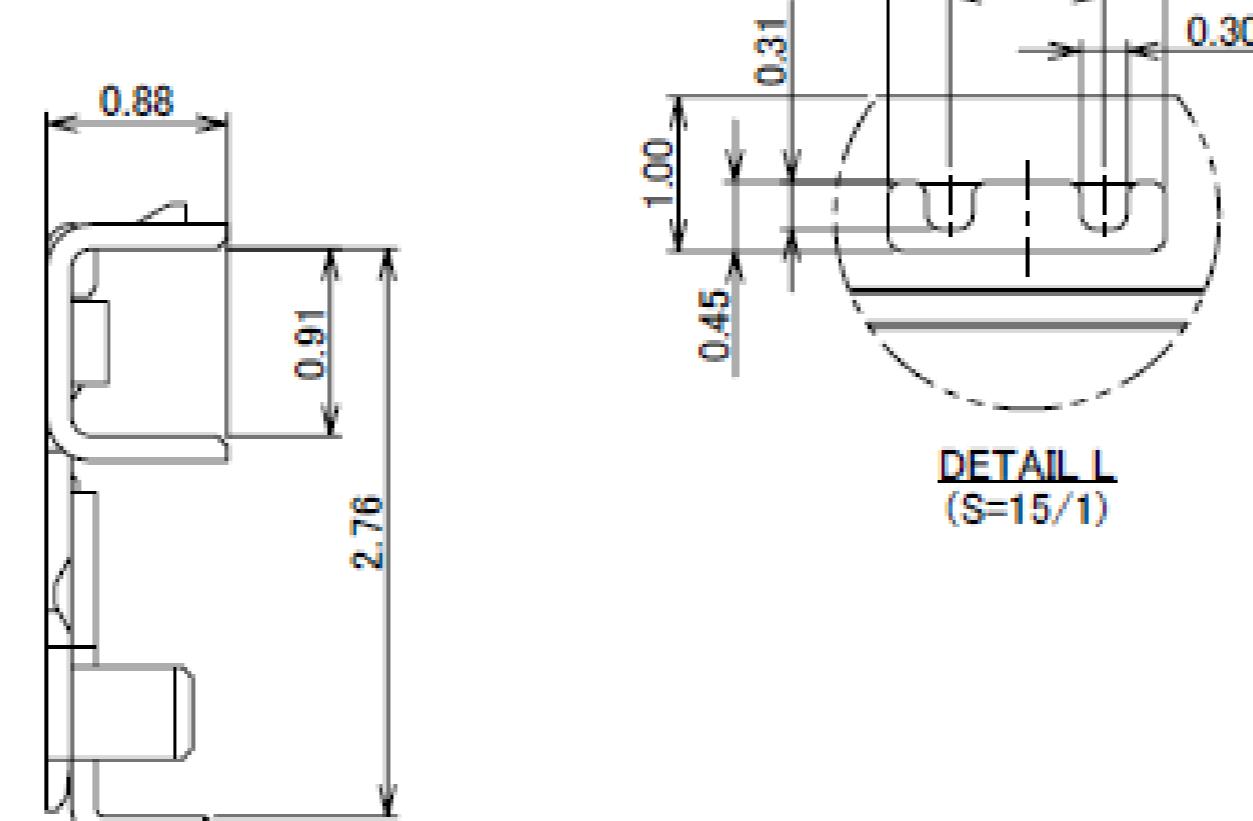
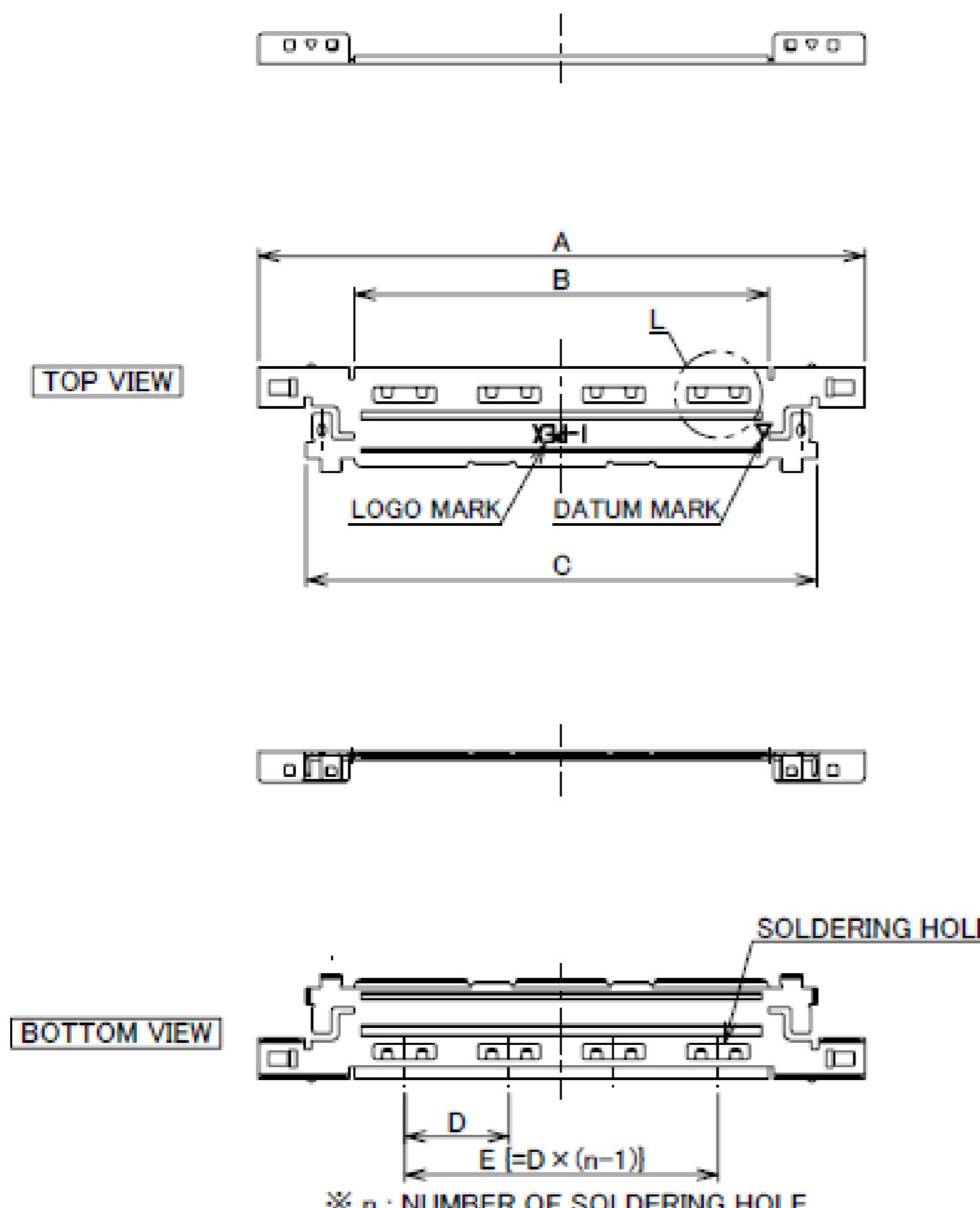
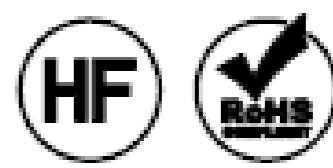


TABLE.1

PART NO.	SHELL A FINISH
2764-0**1-002	TOP SIDE Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN. BOTTOM SIDE Ni 1.00 μ m MIN.(THERE IS THE POSSIBILITY THAT Au ATTACHES RANDOMLY)
2764-0**1-003	PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN.

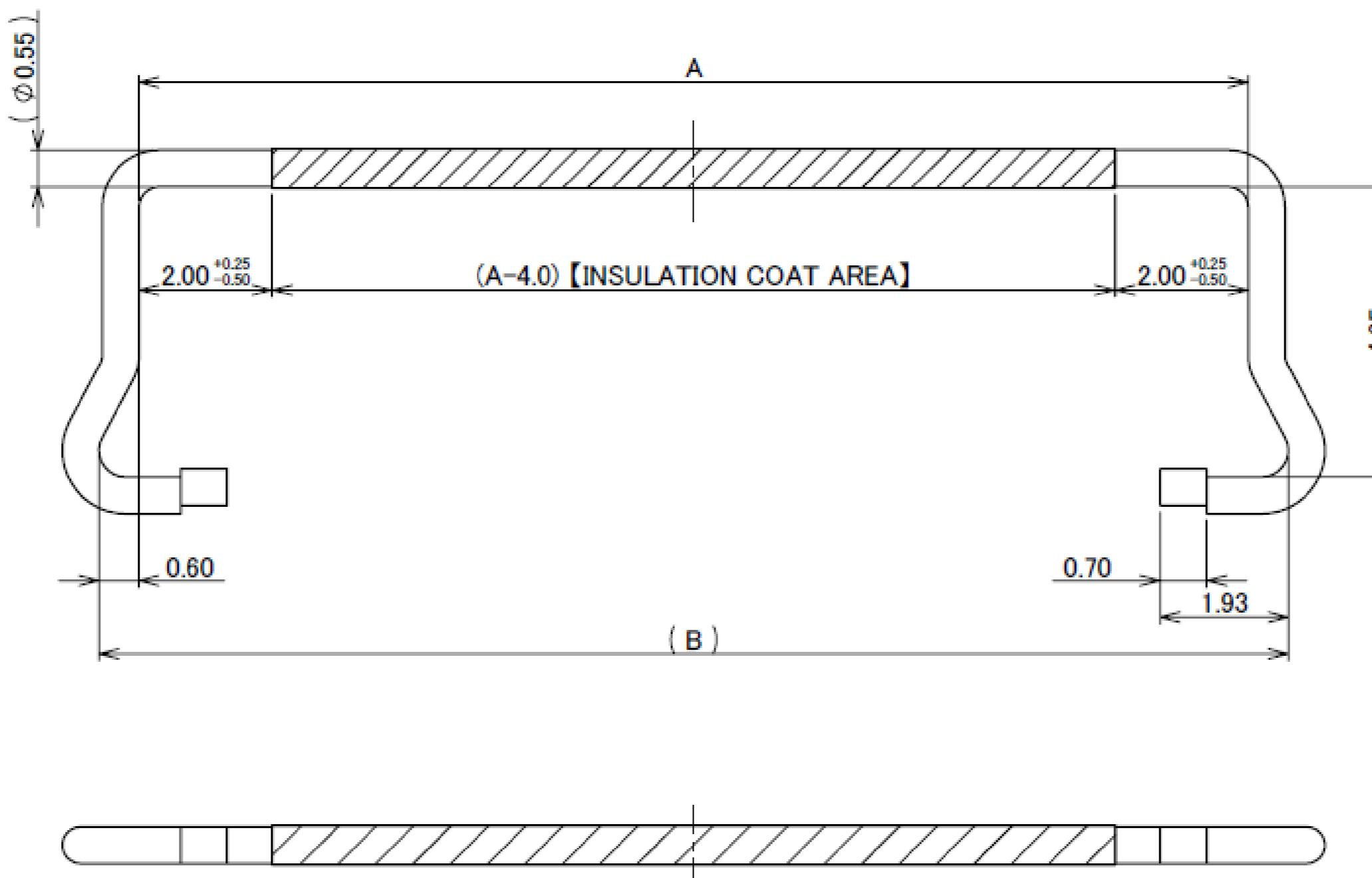
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	SHELL A	PHOSPHOR BRONZE	SEE ABOVE TABLE.1

Rev.11

Plug Pull Bar

Recommended P/N	2766-0**1	
PART NO.	A	B
2766-0101	8.65	9.85
2766-0121	9.45	10.65
2766-0201	12.65	13.85
2766-0301	16.65	17.85
2766-0401	20.65	21.85
2766-0501	24.65	25.85
2766-0601	28.65	29.85

P/N: 2766-0 ** 1
POS.



1	PULL BAR	SUS	-
NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS

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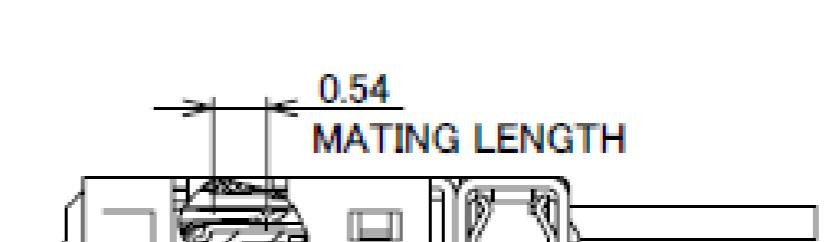
Receptacle Assembly

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

P/N : 20525- # ** E- 0 2

HF Halogen Free
RoHS Compliant

POS. SEE TABLE 1



MATING CONDITION

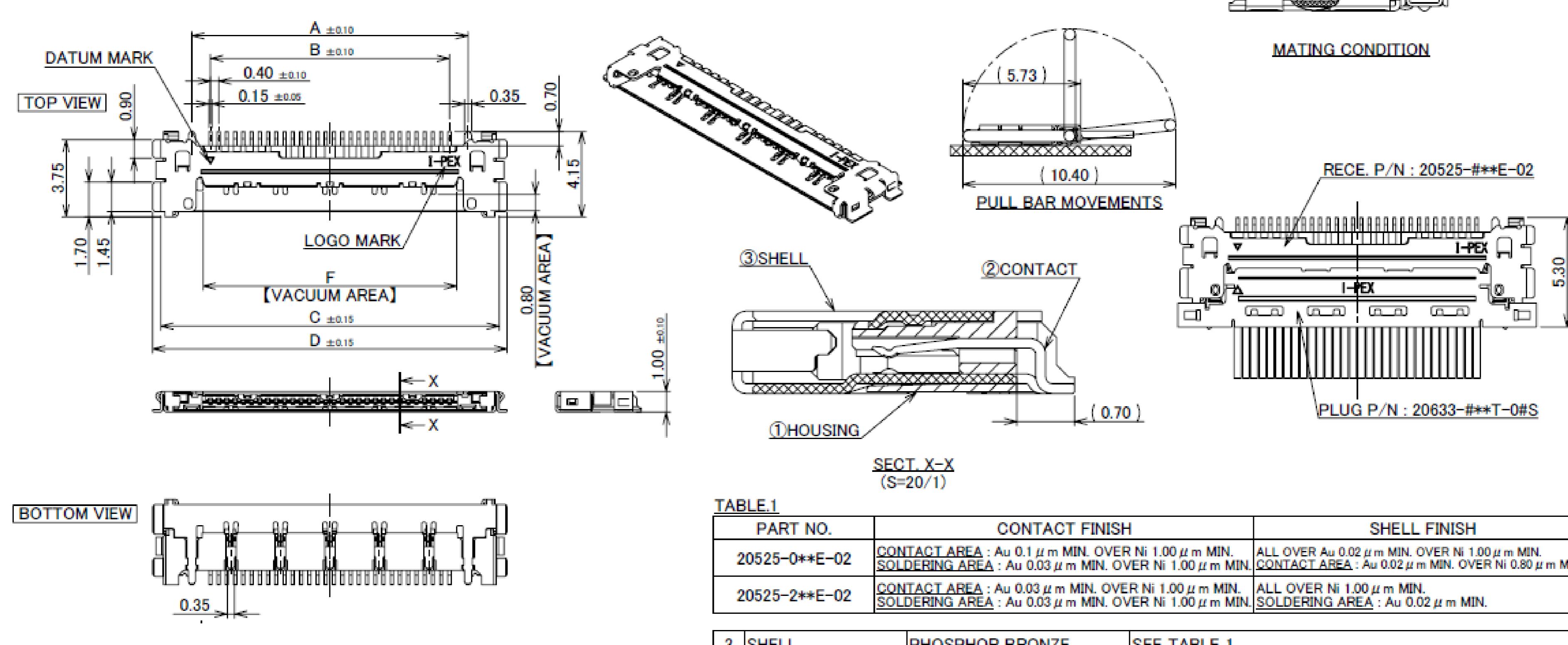


TABLE.1

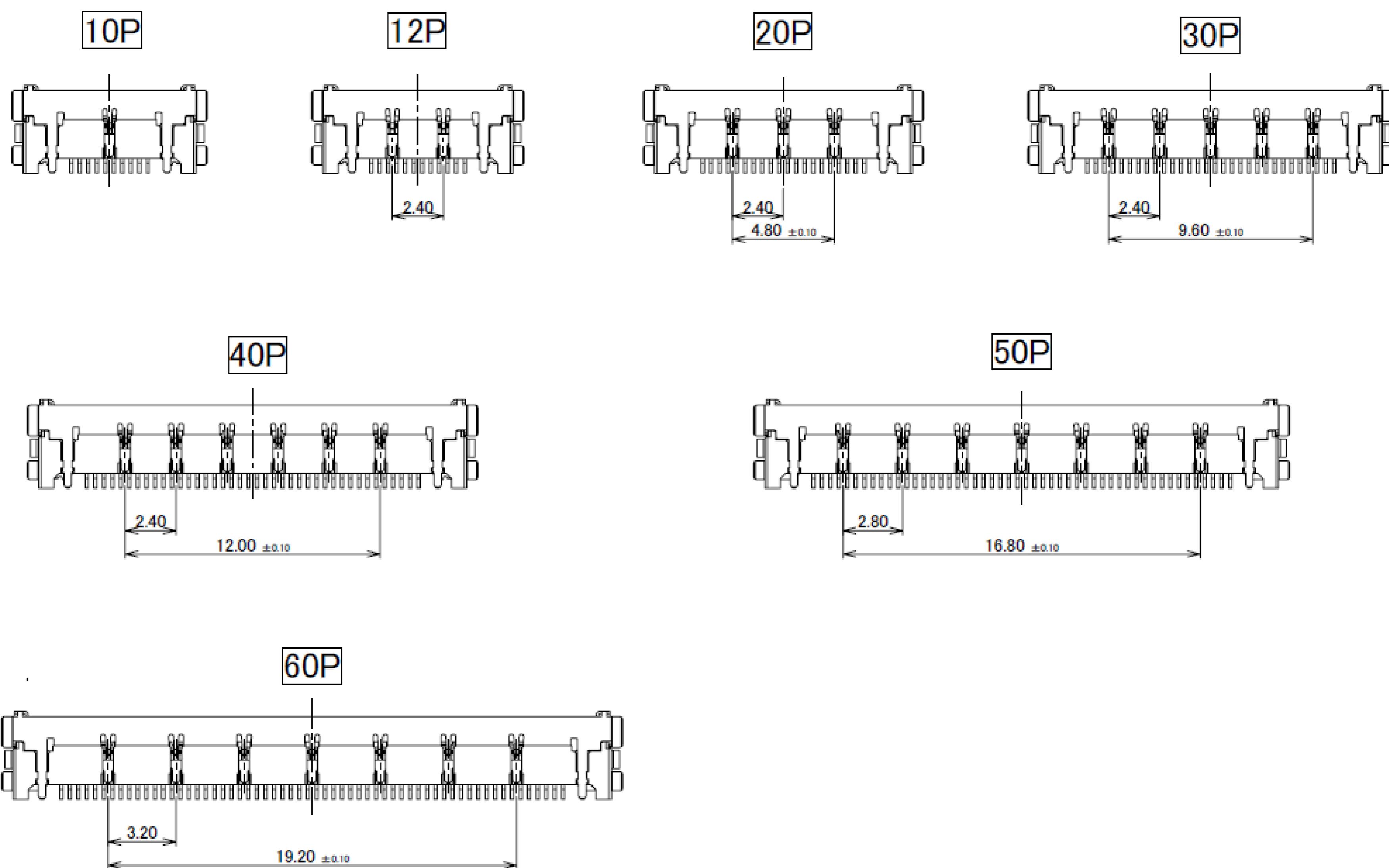
PART NO.	CONTACT FINISH	SHELL FINISH	
NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
20525-0**E-02	CONTACT AREA : Au 0.1 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA : Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.	ALL OVER Au 0.02 μ m MIN. OVER Ni 1.00 μ m MIN. CONTACT AREA : Au 0.02 μ m MIN. OVER Ni 0.80 μ m MIN.	
20525-2**E-02	CONTACT AREA : Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN. SOLDERING AREA : Au 0.03 μ m MIN. OVER Ni 1.00 μ m MIN.	ALL OVER Ni 1.00 μ m MIN. SOLDERING AREA : Au 0.02 μ m MIN.	
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

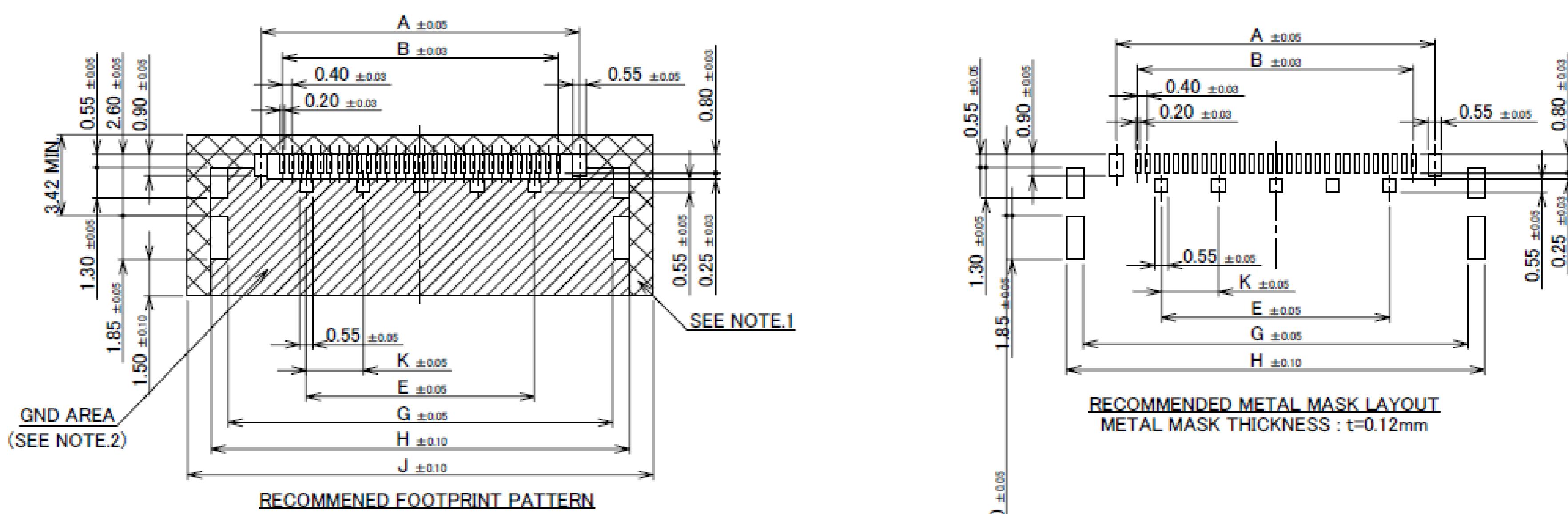
PART NO.
20525-#**E-02

BOTTOM VIEW



Rev.28

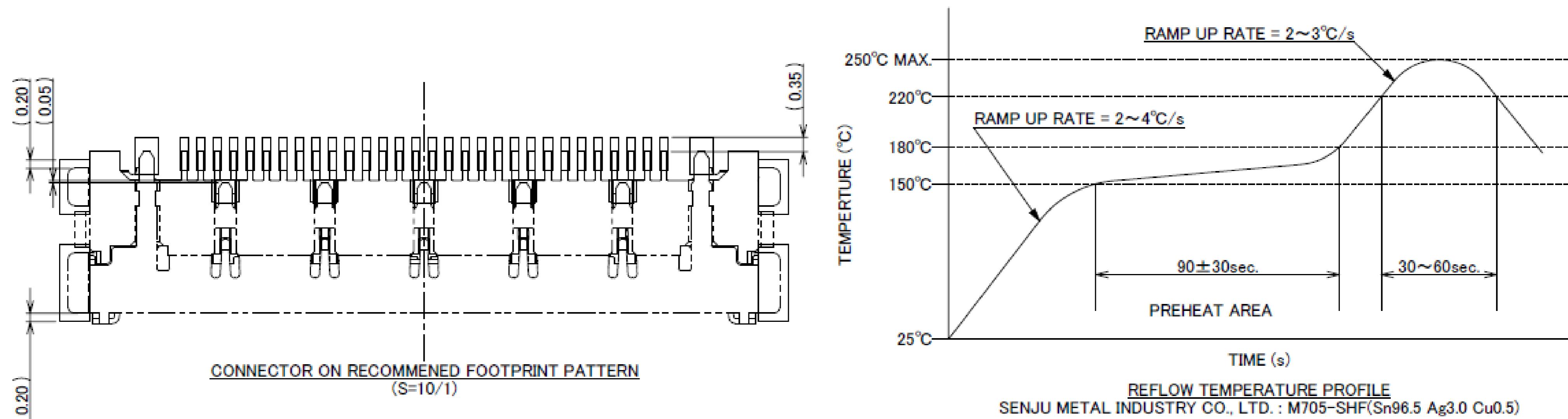
PART NO.	POS.	A	B	E	G	H	J	K
20525-#10E-02	10	5.40	3.60	—	8.18	9.60	11.60	—
20525-#12E-02	12	6.20	4.40	2.40	8.98	10.40	12.40	—
20525-#20E-02	20	9.40	7.60	4.80	12.18	13.60	15.60	2.40
20525-#30E-02	30	13.40	11.60	9.60	16.18	17.60	19.60	2.40
20525-#40E-02	40	17.40	15.60	12.00	20.18	21.60	23.60	2.40
20525-#50E-02	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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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)
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°C~85°C)
OPERATING HUMIDITY	85% MAX. (NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 180mohm MAX. (AWG#34) / AFTER TEST : 40mohm 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 : 40mohm 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.
PRODUCT SPECIFICATION	PRS-1968
TEST REPORT	TR-14122 (20525-0**E-0##) / TR-16023 (20525-2**E-0##)
INSTRUCTION MANUAL	HIM-09008
ASSEMBLY MANUAL	ASM-09005
APPEARANCE CRITERIA No.	QLS-A***

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