molex®

PRODUCT SPECIFICATION

PRODUCT FAMILY SPECIFICATION FOR 0.50mm PITCH FLAT FLEX CABLE (FFC) (105°C, Sn PLATED)

Revision List

REVISION	MODIFICATION	DATE
A	First release	2010/09/27
B	Updated specification	2011/09/29
C	Modified specification (Sections 2.2, 2.3, 4.1, 6, 7)	2014/05/07
D	Margin updated from 0.50 + 0.15/-0.096mm to 0.50 +/- 0.12mm Span updated from 0.50 (N-1) +/- 0.10mm to 0.50 (N-1) +/- 0.07mm	2019/04/04
E	Format update	2022/08/18
F	Number of conductors updated	2022/12/08

1 SCOPE

This specification covers the 0.50mm center FFC (Flat Flexible Cable) jumper cable, 105°C using tin plated copper conductor.

2 PRODUCT DESCRIPTION

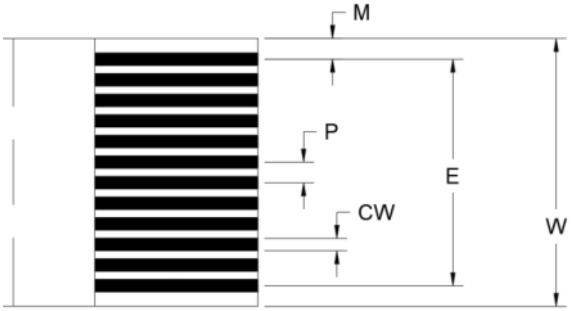
2.1 Product name and series number

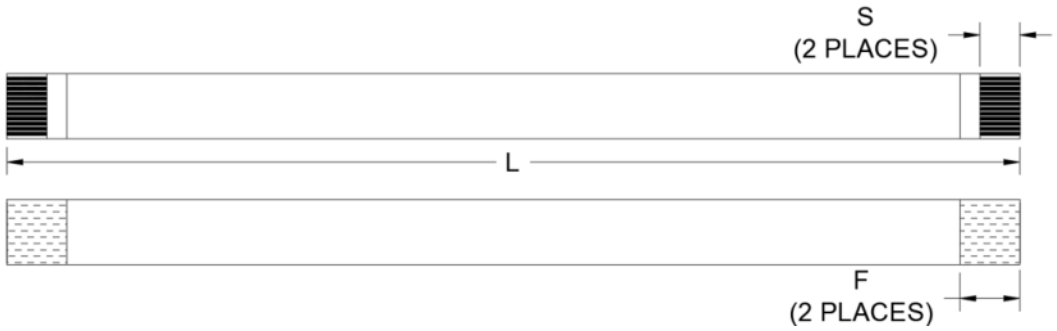
Product name: 0.50MM CENTER FFC JUMPER CABLE (105°C, Sn PLATED)
Product material no: 15266-XXXX

2.2 Dimensions, materials, and markings

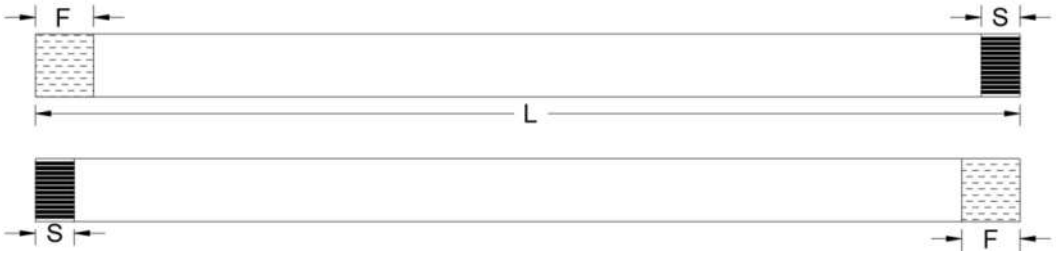
Product dimensions (in mm) according to SD-15266-001.

Number of conductors	N	6 to 50
Pitch	P	0.50 ± 0.05
Span	E	0.50 (N-I) ± 0.07
Total width	W	0.50 (N+I) ± 0.06
Margin width	M	0.50 ± 0.12
Conductor width	CW	0.30 ± 0.02
Strip length	S	4.00 ± 0.80
End thickness of the connection area	Tc	0.30 ± 0.05
Thickness of the insulated area	Ti	0.27 ± 0.05
Length	L	20 to 60 ± 2.00 61 to 100 ± 3.00 101 to 200 ± 4.00 201 to 3999 ± 5.00 4000 to 5999 ± 10.00 6000 to 9999 ± 15.00
Reinforcement length	F	8.00 ± 2.00
End squareness	s-s'	0.30 max.





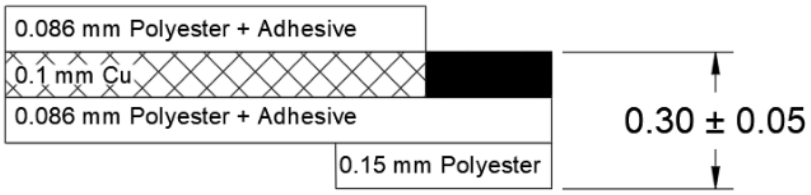
Type A (Contacts on the same side)



Type D (Contacts on the opposite side)

2.3 COMPOSITION

- Conductor: Material: Copper
  Thickness: 0.10mm nominal (Standard)
  Plating: 0.4 µm Tin min
- Insulation tape: Material: Polyester + Flame retardant adhesive
  Thickness: 0.086mm nominal
  Color: White
- Reinforcement tape: Material: Polyester + Adhesive
  Thickness: 0.15mm nominal



2.4 Current and applicable conductors

Conductor Width	Conductor Thickness	Cross section	Current
0.3 mm	0.1 mm	0.03mm²	0.55 A

3 ELECTRICAL AND PHYSICAL SPECIFICATION

3.1 Electrical requirements

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Conductor resistance**	ASTM B 193	730 ohms/km MAXIMUM
2	**Insulation resistance cond. to cond.**	200 V DC	10 MΩ.m MINIMUM
3	**Dielectric test**	200 V AC for 1 minute	No disruptive discharge
4	**Continuity test**	3.0 V DC at 0.1mA	passed
5	**Voltage rating**	UL20706	60 V AC MAXIMUM
6	**Current rating**	0.55 A (all conductors under load) at 23°C	Maximum 40°C heat rise
7	**Impedance cond/cond balanced method**	FFC at 1 MHz	130 Ω TYP
8	**Capacitance cond/cond balanced method**	FFC at 1 KHz	62 pF/m

3.2 Physical requirements

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
9	**Temperature rating**		-40°C to +105°C
10	**Heat resistance**	168 hours at 136°C	Insulation resistance Dielectric test
11	**Thermal shock**	30 minutes at –55°C 5 minutes at +25°C 30 minutes at +85°C 5 minutes at +25°C	Insulation resistance after 25 cycles
12	**Cold coiling**	96 hours at –40°C / The sample will be wound on a 3mm dia. Mandrel	Insulation resistance Dielectric test Visual inspection
13	**Wear by abrasion**	Test following EN3475-503 Weight: 500g Speed: 60 cycles/min Abrasion tool: 0.13mm dia.	10,000 cycles MINIMUM
14	**Folding**	The specimen shall be folded manually at 180°	Continuity after 20 times
15	**Flex Lifecycles**	Speed: 100 cycles/min R: 10 mm Temp: 23°C 	100,000 cycles MIN
16	**Moisture resistance**	96 hours at 60°C, 95% RH	Insulation resistance Dielectric test
17	**Flame resistance**	UL 758 VW-1	Passed

18	**Solderability**	Immersion of the area which is intended for soldering into a tin bath at 250 ± 10°C for 30 seconds	No delamination Solder reflow below 1 mm

4 UL APPROVAL

Materials used and construction of cable are UL compliant under UL style 20706
Temperature rating: 105°C
Voltage rating: 60 V AC

5 ROHS COMPLIANCE

This Flat Flexible Cable product family is compliant to RoHS Directive (EU) 2015/863.