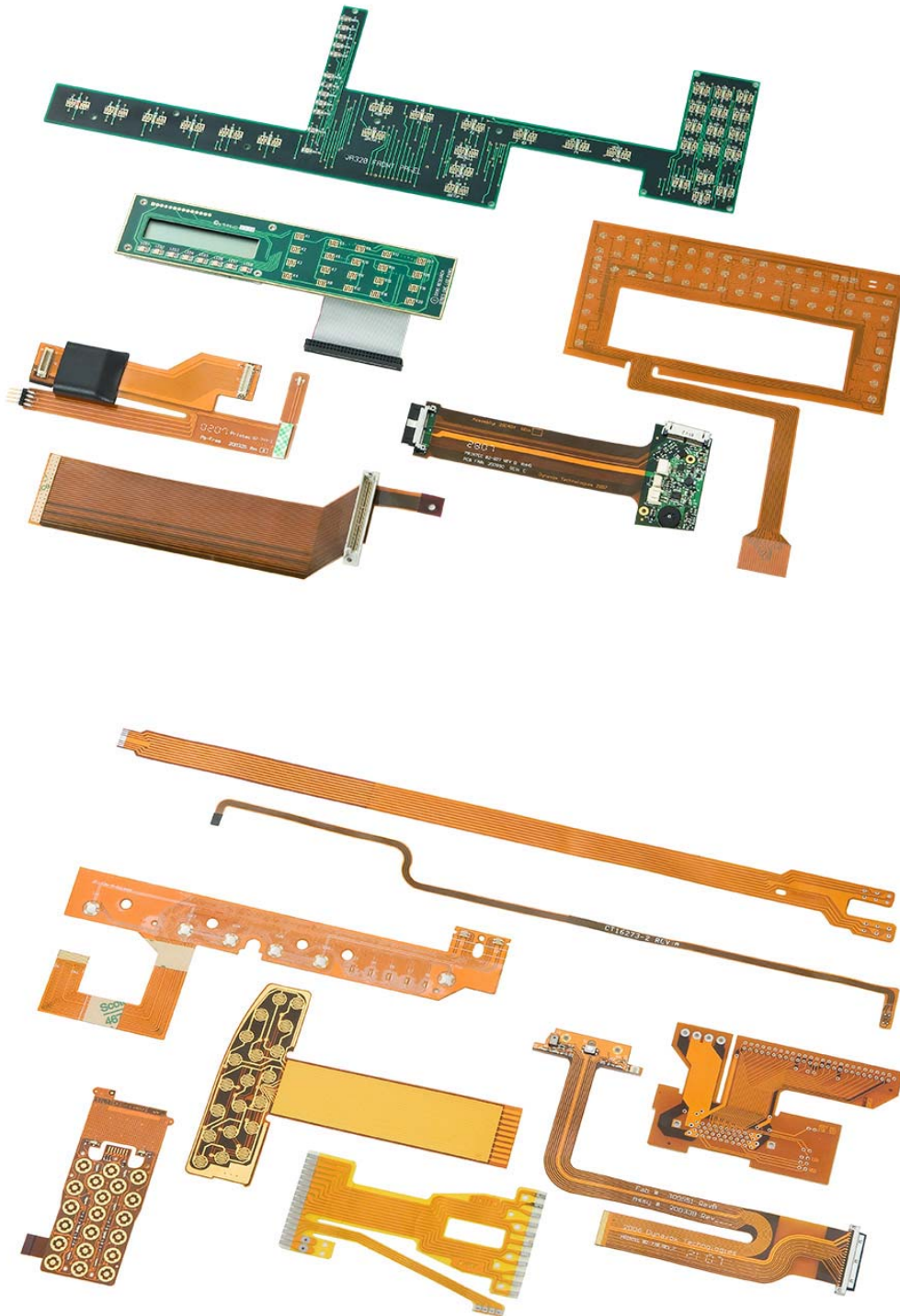
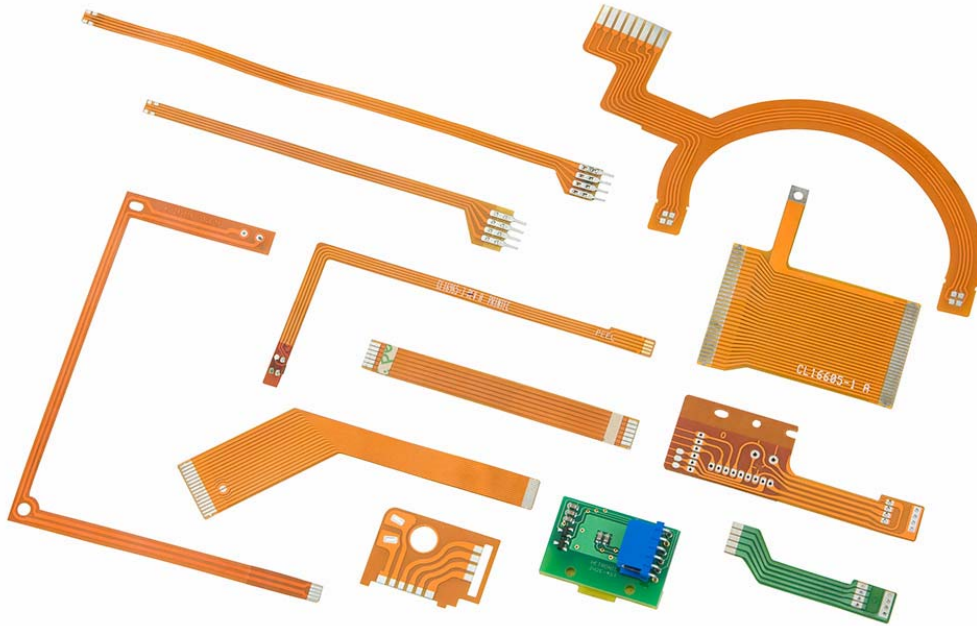


**Flex Circuit**  
Printec H.T. Electronics' Total Solution Approach







<b>Wiring parts</b>	Cable
	Characteristic impedance matching cable
	Interconnection circuit
<b>Flexible wiring parts</b>	Printer head circuit
	Hinge
	Flying head
	Date/servo cable
	Floppy disc cable
<b>For installation of parts</b>	Part installation
	Hybrid structure with the cable
<b>Special FPC</b>	Surface heater (resistance)
	Printer head (inductance)
	Speaker cone (inductance)
	Ground plate
	Switch
	Fuse
	Keyboard (Memo-type calculator)
	Tablet
<b>IC chip carrier</b>	Direct connection between chip to circuit
	Medium of chip to near-by circuit
	Medium of chip to Dip lead frame

**For consumer purposes**

Camera/watch/calculator/sewing machine/audio equipment  
(car radio, car stereo, tape recorder, stereo, VTR, etc.) / household equipment.

**For cars**

Dashboard/tail lamp

### For industrial purposes

Communication office machines (Facsimile, transceiver, thermal printer, printer etc.) Calculation office machines (Date / servo cable, floppy disc cable, ground plate card reader, etc.)

### General

(Fish detector, traffic control equipment, pole-mounting transformer, etc.)  
Aeronautical and space equipment  
Electronic microscope equipment  
Medical equipment

### Technical Specifications of Printec's FPC

Materials	Polyimide (Kapton)	Polyester (PET)	Remark & Test Method
Number of Layer	1-6(Rigid-Flex & Multilayers FPC)	1-2	
Min.Track Width / Spacing	Single Sided	0.100mm(4 mils)	
	Double Sided	0.125mm(5 mils)	
Min.Hole Diameter	Drilling(P.T.H.)	Φ0.30mm	
	Punching	Φ0.50mm	

Materials	Polyimide (Kapton)	Polyester (PET)	Remark & Test Method
Dimension Tolerances	Conductor Width (W)	±0.03mm	W 0.5mm
	Hole Diameter(H)	±0.05mm (With P.T.H. ±0.10mm)	H 1.5mm
	Accumulated Pitch(P)	±0.05mm(Between Conductors) ±0.10mm(Between Holes)	P 25mm
	Outline Dimension(L)	±0.10mm	L 0mm
	Conductors And Outline(C)	±0.15mm μ	C 5.0mm
Surface Treatment On Terminals And Land Areas	Soft or Hard Ni/Au(Au:0.10-1.25μm) Sn/Pb(2-20μm)Primary Flux Carbon Printed(4-10μm/Less Than 5Ω ) H.A.L. (For Polyimide Only)		
Insulation Resistance	1000MΩ		IPC-TM-650 2,6,3,2 at Ambient
Dielectric Strength	5KV		IPC-TM-650 2,5,6,1

Surface Resistance( $\Omega$ )	520×10 <sup>12</sup>	2×10 <sup>15</sup>	IPC-TM-650 2,5,17
Volume Resistance( $\Omega$ -cm)	1×10 <sup>15</sup>	1×10 <sup>15</sup>	IPC-TM-650 2,5,17
Dielectric Constant(1 MHz)	4.0	3.0	MIL-P55617
Dissipation Factor(1 MHz)	0.04	0.03	MIL-P55617
Peeling Strength (180° Direction)	1.0 kgf/cm	1.2 kgf/cm	IPC-TM-650 2,4,9
Solder Heat Resistance	300 /10secs	210 /10secs	
Flammability	94 V-0	94 VTM-0	UL94

Insulating film	Polyimide (Kapton)	Polyester (Mylar)
Base film thickness(m)	12.5 25 50 75 125	25 50 75 100 125
Coverlay film thickness(m)	25 50 75 125	25 50 75 100 125
Conductor material	electrolytically deposited copper(ED) rolled annealed copper(RA)	
conductor thickness(m)	18 35 70	