

PCB & Layout

Prices see shop.griederbauteile.ch

TRANSPARENT GRID PAPER	Page 2
POLYESTER FOIL	Page 2
SELF-ADHESIVE TAPES	Page 2
PCB LAYOUT LAND	Page 3
LAYOUT DIL-SYMBOLS	Page 4
OTHER LAYOUT SYMBOLS	Page 5
TO SYMBOLS	Page 5
VG CONNECTOR-SYMBOLS	Page 6
PHOTO-POSITIVE COATED BOARDS	Page 7
COPPER CLAD BOARDS	Page 7
DEVELOPER + ETCHING SOLUTION	Page 8
PROTOTYPING BOARDS (SINGLE SIDED)	Page 9 - 10
PROTOTYPING BOARDS (DOUBLE SIDED)	Page 10 - 11
AEROSOL SPRAYS	Page 11
SOLDERLESS BREADBOARDS	Page 12
JUMP WIRES	Page 12

Some vintage components are only available while stock lasts.

Transparent Grid Paper

Transparent paper with blue grid for templates and drafts

Not true to scale

Both sides matt



Order no	Size	Grid Section	Grid
PBP.250.A3	A3	277 x 400mm	2.50mm/.098"
PBP.250.A4	A4	190 x 277mm	2.50mm/.098"
PBP.254.A3	A3	277 x 400mm	2.54mm/.100"
PBP.254.A4	A4	190 x 277mm	2.54mm/.100"



Transpagra Transparent Grid Foil

Transparent foil with blue grid

Both sides mat

True to scale



Order no	Size	Grid Section	Grid
PBR.250.A2	A2	400 x 574mm	2.50mm/.098"
PBR.250.A3	A3	277 x 400mm	
PBP.250.A4	A4	190 x 277mm	
PBR.254.A2	A2	400 x 574mm	2.54mm/.100"
PBR.254.A3	A3	277 x 400mm	
PBR.254.A4	A4	190 x 277mm	



Polyester Foil Clear without Grid

Polyester film clear especially suitable for multi layer applications.

Material: hostaphane BN180

Order no	Size	Dimensions
PBG.A2	A2	420 x 594mm
PBG.A3	A3	297 x 420mm
PBG.A4	A4	210 x 297mm



Acetate Foil Clear

For graphic arts, printing, overlays and many other applications.

One side matt

Order no	Size	Dimensions	Thickness
PBF	A4	210 x 297mm	0.1mm



Self-Adhesive Precision Tape

Tapes for PCB layout design. Traces between devices on a board are made with these self-adhesive tapes. Extra strong, precision tape.

Suitable for direct etching layout, non reflective matt surface.



Length of spool: 18.3m

Thickness of tape: 0.127mm/.005" (tolerance ±0.05mm)



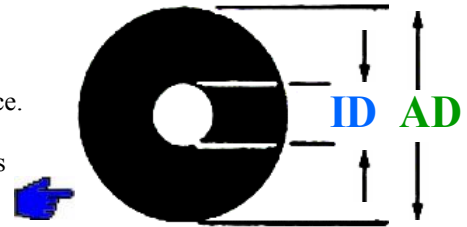
Order no	Tape width		Bishop no
	metric	inches	
PFB.05	0.51mm	.020"	201-020-11
PFB.10	1.02mm	.040"	201-040-11
PFB.16	1.57mm	.062"	201-062-11
PFB.20	2.03mm	.080"	201-080-11
PFB.25	2.54mm	.100"	201-100-11
PFB.32	3.18mm	.125"	201-125-11

Order no	Tape width		Bishop no
	metric	inches	
PFB.51	5.08mm	.200"	201-200-11
PFB.63	6.35mm	.250"	201-250-11
PFB.76	7.62mm	.300"	201-300-11
PFB.101	10.16mm	.400"	201-400-11
PFB.127	12.70mm	.500"	201-500-11
PFB.203	20.32mm	.800"	201-800-11

PCB Layout Land

When creating PCB layout artwork, these transfers are ideal to achieve a professional finish. The transfers are simply rubbed on to the target surface. They can be applied directly to copper clad board or onto transparent foil when a photo process is to be employed to produce PCBs. These transfers have a non reflective, matt surface.

Size tolerance $\pm 0.002\text{mm}$



Order no	Number of Land per		AD		ID		Bishop no
	Package	Stripe (approx)	Metric	Inches	Metric	Inches	
PFE.16P	500		1.57mm	.062"	0.63mm	.025"	D136
PFE.16S		36					
PFE.51S	500	52	5.08mm	.200"	1.02mm	.040"	D204
PFE.63P	500		6.35mm	.250"	1.02mm	.040"	D108
PFE.63S		24					
PFE.76P	500		7.62mm	.300"	1.02mm	.040"	D293
PFE.76S		20					
PFE.101P	500		10.16mm	.400"	1.02mm	.040"	D189
PFE.101S		16					
PFE.127P	500		12.70mm	.500"	1.02mm	.040"	D192
PFE.127S		24					
PFE.152P	500		15.24mm	.600"	1.57mm	.062"	D149
PFE.152S		22					
PFE.203P	500		20.32mm	.800"	1.57mm	.062"	D235
PFE.203S		9					
PFE.254P	500		25.40mm	1.000"	1.57mm	.062"	D131
PFE.254S		7					

PCB Transfers with Centred Land

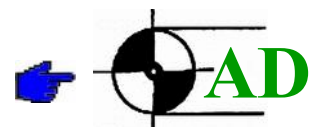
With point centred grid for easy design of rows of land (e.g. for axial connections).



Order no	Stripes per Package	Land per Stripe	AD		ID		Centred Distance (RM)	
			Metric	Inches	Metric	Inches	Metric	Inches
PFE.R250P	40		1.88mm	.074"	0.38mm	.015"	2.50mm	.098"
PFE.R250S		80						
PFE.R500P	50		3.76mm	.148"	0.76mm	.030"	5.00mm	.196"
PFE.R500S		40						
PFE.R508P	50		3.81mm	.150"	0.78mm	.031"	5.08mm	.200"
PFE.R508S		40						
PFE.R1000P	50		7.52mm	.296"	1.52mm	.060"	10mm	.392"
PFE.R1000S		20						
PFE.R1016P	50		7.64mm	.300"	1.52mm	.060"	10.16mm	.400"
PFE.R1016S		20						

Modified PCB Target Symbols

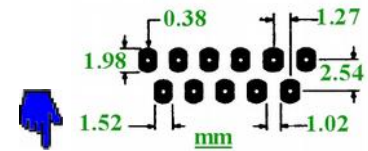
Used as point of reference for manual designed PCB layouts. These transfers are self-adhesive and have a non reflective, matt surface. They are not etch-proof.



Order no	Number of Target Symbols per		AD		Bishop no
	Packet	Stripe (approx)	Metric	Inches	
PFZ.8P	250		7.92mm	.312"	4029
PFZ.8S		20			
PFZ.16P	250		15.88mm	.625"	4020
PFZ.16S		6			
PFZ.25P	250		25.4mm	1.000"	4015
PFZ.25S		4			

Dual-In-Line Symbols

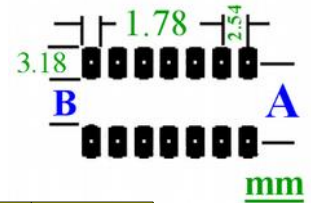
PCB symbol land (transfer symbol) for connectors for indirect mating
 opaque black, on self-adhesive foil, non etch-proof
 For scale 2:1 use the dimensions indicated and multiply them by 2.



Order no	Number of Contacts per		Scale	Description	Bishop no
	Packet	Stripe (approx)			
PFC.Z1P	7 Stripes with 328 Contacts		1:1	Quad-In-Line Connections	6736
PFC.Z1S		328 Contacts	1:1		6736
PFC.Z2P	14 Stripes with 164 Contacts		2:1		6740
PFC.Z2S		164 Contacts	2:1		6740

Dual-In-Line Symbols

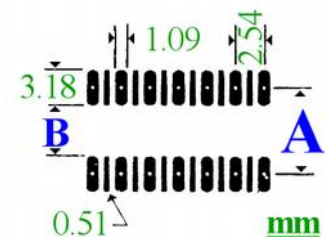
These DIL transfer symbols are used for manual PCB art design for integrated circuits.
 Opaque black, on self-adhesive foil
 Non etch-proof
 For scale 2:1 use the dimensions indicated and multiply them by 2.



Order no	Symbols per Packet	Single Symbols	Centre-to-Centre A		Distance B	Number of Poles	Scale
			Metric	Inches			
PFD.1631N1P	250		7.62mm	.300"	4.45mm	16	1 : 1
PFD.1631N1E		1					
PFD.163N2P	250		15.24mm	.600"	8.90mm	16	2 : 1
PFD.163N2E		1					
PFD.203N1P	250		7.62mm	.300"	4.45mm	20	1 : 1
PFD.203N1E		1					
PFD.203N2P	250		15.24mm	.600"	8.90mm	20	2 : 1
PFD.203N2E		1					
PFD.224N1P	100		10.16mm	.400"	6.99mm	22	1 : 1
PFD.224N1E		1					
PFD.224N2P	100		20.32mm	.800"	13.98mm	22	2 : 1
PFD.224N2E		1					
PFD.246N1P	100		15.24mm	.600"	12.06mm	24	1 : 1
PFD.246N1E		1					
PFD.246N2P	100		30.48mm	1.200"	24.12mm	24	2 : 1
PFD.246N2E		1					
PFD.406N1P	100		15.24mm	.600"	12.06mm	40	1 : 1
PFD.406N1E		1					
PFD.406N2P	100		30.48mm	1.200"	24.12mm	40	2 : 1
PFD.406N2E		1					

Truncated DIL Transfer Symbols

Same as above

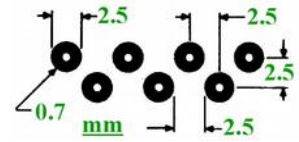


Order no	Symbols per Packet	Single Symbol	Centre-to-Centre A		Distance B	Number of Poles	Scale
			Metric	Inches			
PFD.163Z1P	250		7.62mm	.300"	4.45mm	16	1 : 1
PFD.163Z1E		1					
PFD.163Z2P	250		15.24mm	.600"	8.90mm	16	2 : 1
PFD.163Z2E		1					
PFD.246Z1P	100		15.24mm	.600"	12.06mm	24	1 : 1
PFD.246Z1E		1					
PFD.246Z2P	100		30.48mm	1.200"	24.12mm	24	2 : 1
PFD.246Z2E		1					
PFD.406Z1P	100		15.24mm	.600"	12.06mm	40	1 : 1
PFD.406Z1E		1					
PFD.406Z2P	100		30.48mm	1.200"	24.12mm	40	2 : 1
PFD.406Z2E		1					

Symbols for VG-Connectors

DIN 41617 is a DIN standard for electrical connectors (VG 95323 connectors) for indirect mating. These PCB symbol land were used for manual PCB art design for these connectors.

Opaque black, on self-adhesive foil
Non etch-proof



For scale 2:1 use the dimensions indicated and multiply them by 2.

Symbols for DIN 41617 Standard Connectors

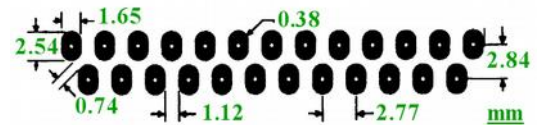
2.5mm half-dual spacing (.098")

Order no	Number of Contacts per		Scale	Bishop no
	Packet	Stripe		
PFC.1P	11 Stripes @ 180 Contacts		1 : 1	6790
PFC.1S		180 Contacts		
PFC.2P	22 Stripes @ 90 Contacts		2 : 1	6791
PFC.2S		90 Contacts		



Symbols for D-Sub Connectors

2.77mm half-dual spacing (.109")



For scale 2:1 use the dimensions indicated and multiply them by 2.

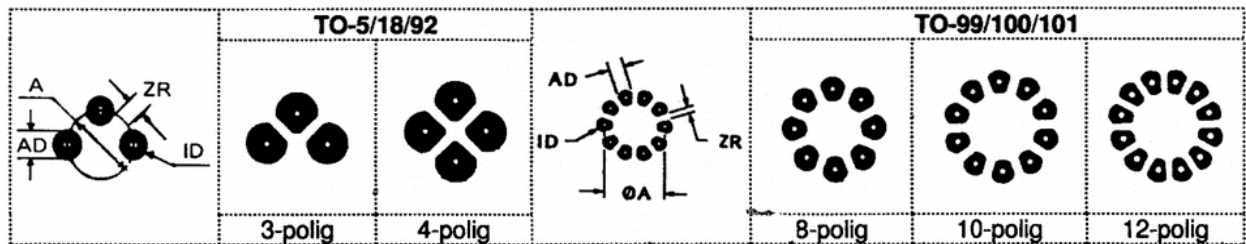
Order no	Number of Contact per		Scale	Bishop no
	Packet	Stripe		
PFC.D1P	7 Stripes @ 328 Contacts		1 : 1	6838
PFC.D1S		328 Contacts		
PFC.D2P	14 Stripes @ 164 Contacts		2 : 1	6839
PFC.D2S		164 Contacts		



TO Symbols

PCB transfer symbols for different TO-housing. The transfers are opaque black, on self-adhesive foil. Non etch-proof.

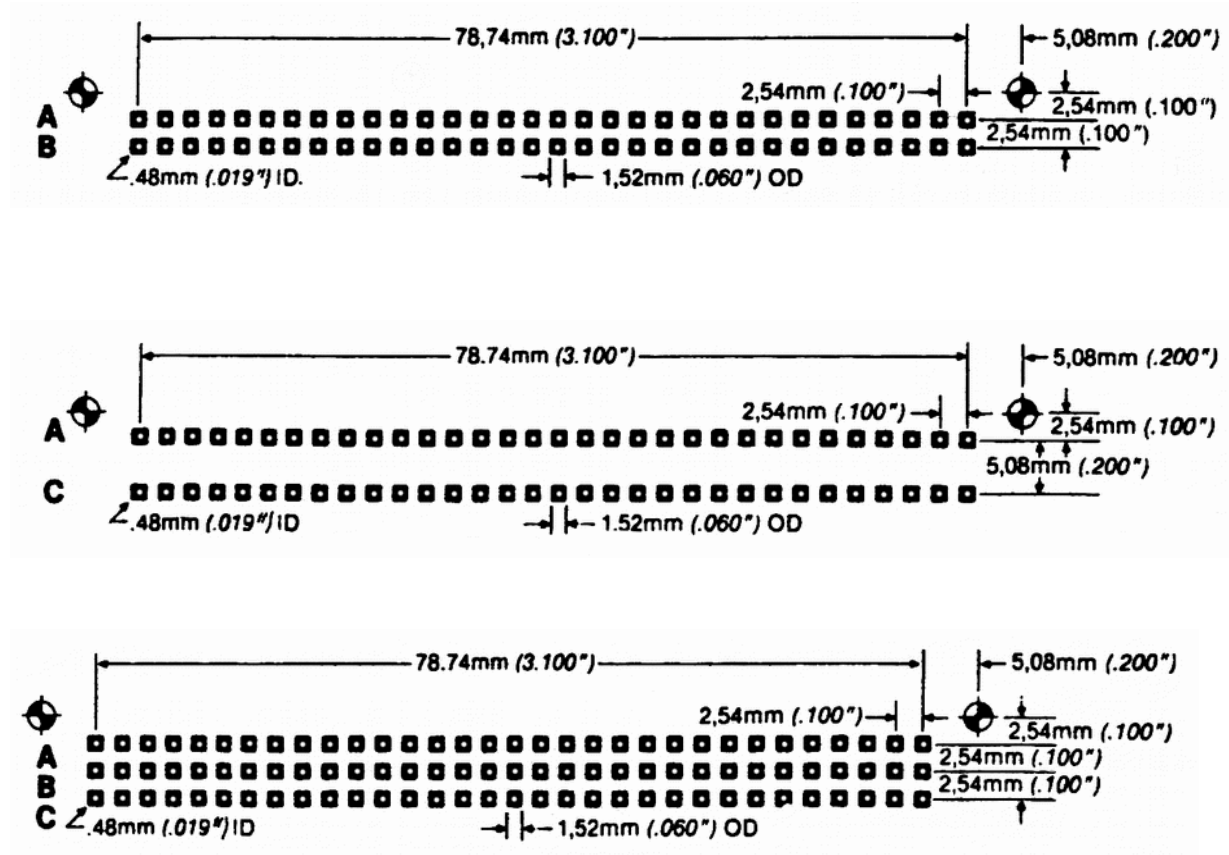
Metric tolerance ±0.002mm



Order no	Number of Symbols per		A	AD	ID	ZR	Suitable	Scale	Number of Poles
	Packet	approx Stripe							
PFT.13P	250		2.54mm	1.57mm	0.38mm	0.63mm	TO-18 + TO-92	1 : 1	3
PFT.13S		18							
PFT.14P	250		2.54mm	1.57mm	0.38mm	0.63mm		1 : 1	4
PFT.14S		18							
PFT.23P	250		5.08mm	3.14mm	0.76mm	1.26mm		2 : 1	3
PFT.23S		24							
PFT.24P	250		5.08mm	3.14mm	0.76mm	1.26mm	2 : 1	4	
PFT.24S		24							
PFT.43P	250		10.16mm	6.34mm	0.76mm	1.58mm	2 : 1	3	
PFT.43S		16							
PFT.44P	250		10.16mm	6.34mm	0.76mm	1.58mm	2 : 1	4	
PFT.44S		16							
PFT.28P	250		5.08mm	1.57mm	0.38mm	0.63mm	TO-99, TO-100 TO-101	1 : 1	8
PFT.28S		18							

VG Connector Symbols

DIN 41612 is a DIN standard for electrical connectors that are widely used in rack based electrical systems. PCB symbol land for connectors for indirect mating
 Opaque black, on self-adhesive foil
 Non etch-proof
 Metric tolerance $\pm 0.05\text{mm}$



For scale 2:1 use the dimensions indicated and multiply them by 2.



DIN 41612			2.54mm Centre-to-Centre (0.100")		
Order no	Number of Symbols per		Connector Type	Scale	Bishop no
	Packet	Single Symbols			
PFC.AB1P	40		64-pol (AB)	1 : 1	6869
PFC.AB1E		1			
PFC.AB2P	40		64-pol (AB)	2 : 1	6870
PFC.AB2E		1			
PFC.AC1P	40		64-pol (AC)	1 : 1	6875
PFC.AC1E		1			
PFC.AC2P	40		64-pol (AC)	2 : 1	6882
PFC.AC2E		1			
PFC.ABC1P	40		64-pol (A B C)	1 : 1	6871
PFC.ABC1E		1			
PFC.ABC2P	40		64-pol (A B C)	2 : 1	6872
PFC.ABC2E		1			

Photo-Positive Coated Boards

Photo-positive coated boards which the portion of the photoresist that is exposed to light becomes soluble to the photoresist developer. The portion of the photoresist that is unexposed remains insoluble to the photoresist developer.



Material	
PH	phenolic resin hard paper FR2-1650
EP	epoxy-glass laminate FR-4

Order no	Material	Lamination (35µm Cu)	Dimensions
PHP.100x160	1.5mm PH	Single-sided	100 x 160 x 1.5mm
PEG.D100x160	0.5mm EP	Single-sided	100 x 160 x 0.5mm
PEG.100x160	1.5mm EP	Single-sided	100 x 160 x 1.5mm
PEG.160x233	1.5mm EP	Single-sided	160 x 233 x 1.5mm
PEG.300x400	1.5mm EP	Single-sided	300 x 400 x 1.5mm
PEG.500x500	1.5mm EP	Single-sided	500 x 500 x 1.5mm
PDG.D500x500	0.5mm EP	Double-sided	500 x 500 x 0.5mm
PDG.100x160	1.5mm EP	Double-sided	100 x 160 x 1.5mm
PDG.375x500	1.5mm EP	Double-sided	375 x 500 x 1.5mm

Copper Clad Boards

Order no	Material	Lamination (35µm Cu)	Dimensions
PFX.150	0.8mm epoxy-glass FR4	single sided	100 x 160 x 0.8mm
PFX.375	0.8mm epoxy-glass FR4	single sided	150 x 250 x 0.8mm
PFV.150	1.5mm epoxy-glass FR4	single sided	100 x 160 x 1.5mm
PFV.375	1.5mm epoxy-glass FR4	single sided	150 x 250 x 1.5mm
PFW.150	1.6mm epoxy-glass FR4	double sided	100 x 160 x 1.6mm



Hartened Paper Board without Lamination

Order no	Material	Dimensions
PET.150	hartened paper	100 x 150 x 4mm



Etch-Resistant Pen edding 2000

Black, waterproof, etch resist, for PCB making

Method: Drawing of layout directly onto the clean copper clad board, drying time min 20 minutes. After the drying time the board can be etched and then rinsed with water. The PCB is ready. Because this type of making a PCB is non-reproducible this method is only recommended for single PCBs like prototypes.



Best.Nr.
PFF

Exposure Lamp Photocrescenta E27 75W 230V PF603

Photocrescenta lamps have an internal white coating, which emits diffused, very uniform light at high luminous output. These lamps can be used for exposue of photo positive coated boards.

Wattage: 75W
Voltage: 230V
Base thread: E27



Best.Nr.
PBL



Developer

This solution is used as developer for photo-positive coated boards and boards covered with POSITIV 20 spray.

The solution can be used till depletion.

Poisonous category 3, please pay attention to warning

Application: 1 part developer to 3 parts of water

Order no	Content
PBE	500ml in plastic bottle



Natriumpersulfat 200g

Ätzmittel zur Herstellung
von Leiterplatten
ergibt 1 Liter gebrauchsfertige Lösung

Gefahrenhinweise (R-Sätze):
 R 8 Feuergefahr bei Berührung mit brennbaren Stoffen.
 R 22 Gesundheitsschädlich beim Verschlucken.
 R 36/37/38 Reizt die Augen, Atmungsorgane und die Haut.
 R 42/43 Sensibilisierung durch Einatmen und Hautkontakt möglich.

Sicherheitsratschläge (S-Sätze):
 S 22 Staub nicht einatmen.
 S 24 Berührung mit der Haut vermeiden.
 S 26 Bei Berührung mit den Augen sofort mit Wasser abspülen und Arzt konsultieren.
 S 36/37/39 Bei der Arbeit geeignete Schutzkleidung, Schutzhandschuhe und Schutzbrille/Gesichtsschutz tragen.
 S 45 Bei Unfall oder Unwohlsein sofort Arzt zuziehen (wenn möglich, dieses Etikett vorzeigen).

Grieder Elektronik Bauteile AG
 Reuslistrasse 62
 4450 Sissach Tel. 061 976 95 95

Sodium Persulfate Etching Powder

The powder (sodium persulfate) is dissolved in hot water. For best result aim the temperature of the solution at 45 to 50 degree Celsius.

Material: sodium persulfate (Na₂S₂O₈)

Weight: 200g

RoHS compliant: yes

Order no	Weight
PFA.NPS	200g
PFA.NPS2K	2kg



Xi Reizend/irritant

Natriumhydroxid 1.6% Soude caustique 1.6% 500ml

Zum Entwickeln von fotobeschichteten Printplatten:
Gebrauchsfertige Lösung.

Pour révéler des plaques photosensibles:
Usage non dilué.

Gefahrenhinweise (R-Sätze):
 R 36/38 Reizt die Augen und die Haut.

Sicherheitsratschläge (S-Sätze):
 S 2 Darf nicht in die Hände von Kindern gelangen.
 S 46 Bei Verschlucken sofort ärztlichen Rat einholen und Verpackung oder Etikett vorzeigen.
 S 60 Dieser Stoff und sein Behälter sind als gefährlicher Abfall zu entsorgen.

Risques particuliers (phrases R):
 R 36/38 Irritant pour les yeux et la peau.

Conseils de prudence (phrases S):
 S 2 Conserver hors de portée des enfants.
 S 46 En cas d'ingestion, consulter immédiatement un médecin et lui montrer l'emballage ou l'étiquette.
 S 60 Eliminer le produit et son récipient comme un déchet dangereux.

Grieder Elektronik Bauteile AG
 Reuslistrasse 62, 4450 Sissach Tel. +41 61 976 95 95



Environment Protection
 Please dispose as hazardous waste.

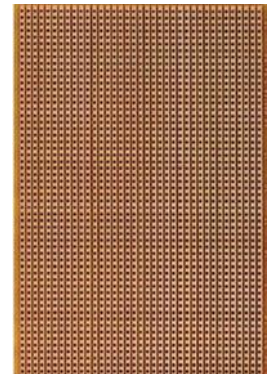
Wikipedia: **FR-2** is an abbreviation for Flame Resistant 2. It is a NEMA designation for SRBP (synthetic resin bonded paper), a composite material made of paper impregnated with a plasticized phenol formaldehyde resin, used in the manufacture of printed circuit boards.

FR-4 is a material composed of woven fiberglass cloth with an epoxy resin binder that is flame resistant (self-extinguishing).

Prototyping Board RE520 (single sided)

Single-sided 35 µm Cu
 Hot air leveling (HAL-leadfree)
 Hole spacing 2.54 x 2.54 mm
 38 continuous strips with 61 holes
 Hole diameter 1.00 mm
 Connector 32/64/96-channel DIN 41612 grid 2.54 mm type C
 RoHS compliant

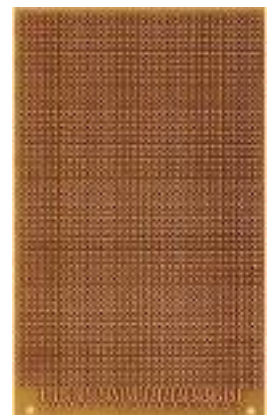
Order no	Thickness	Material	Size
PUV.100x160HP	1.5mm	SRBP FR2	100 x 160mm
PUV.100x160GE	1.5mm	Epoxyd fibre glass FR4	100 x 160mm



Prototyping Board RE 220 (single sided)

Single-sided 35 µm Cu
 Hot air leveling (HAL-leadfree)
 Hole spacing 2.54 x 2.54mm
 37 x 58 soldering pads 2.00 mm Ø
 Hole diameter 1.11mm
 Connector 31-channel DIN 41617
 RoHS compliant

Order no	Thickness	Material	Size
PUV.220HP	1.5mm	SRBP FR2	100 x 160mm
PUV.220GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm



Prototyping Board RE 320 (single sided)

Single-sided 35 µm Cu
 Hot air leveling (HAL-leadfree)
 Hole spacing 2.54 x 2.54mm
 37 x 53 soldering pads 2.00 mm Ø
 Hole diameter 1.11mm
 Connector 32/64/96-channel DIN 41612 type C
 RoHS compliant

Order no	Thickness	Material	Size
PUV.320HP	1.5mm	SRBP FR2	100 x 160mm
PUV.320GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm



Prototyping Board with 3 Strip Grid

Single-sided 35 µm Cu
 Material: FR2 (pentinax)
 Hole distance: 2.54mm
 Diameter of holes: approx 1mm
 Thickness of board: approx 1.5mm
 Dimensions of board: 100x 160mm
 Make: Kemo
 EAN 4024028070254

Order no	Thickness	Material
BKM.E013	1.5mm	SRBP FR2



Prototyping Board RE 330 (single sided)

Single-sided 35 µm Cu
 Hot air leveling (HAL-leadfree)
 Component print
 Hole spacing 2.54 x 2.54mm
 3-hole- and 4-hole-soldering-pads
 Hole diameter 1.00mm
 2 x connector 32/64/96-channel DIN 41612 type C
 RoHS compliant



Order no	Thickness	Material	Size
PUV.330GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm

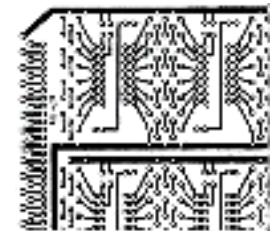


Prototyping Board RE 420 (single sided)

Single-sided 35 µm Cu
 Hole spacing 2.54mm
 Hole diameter 1.00mm
 Connector 31-channel DIN 41617, 8 x 16-pin IC print
 Size: 100mm x 160mm x 1.5mm



Order no	Thickness	Material	Size
PUV.420HP	1.5mm	SRBP FR2	100 x 160mm
PUV.420GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm



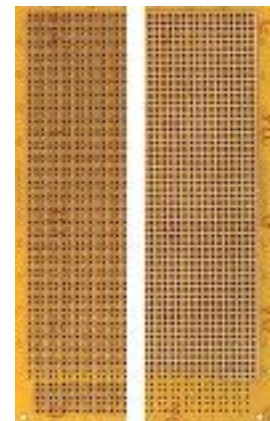
Prototyping Boards (double sided)

Prototyping Board RE 201 (double sided)

Double-sided 35 µm Cu
 Not plated through holes (NPTH)
 Hot air leveling (HAL-leadfree)
 Hole spacing 2.54 x 2.54mm
 34 x 54 soldering pads 2 x 2mm
 Hole diameter 1mm
 Connector 32/64/96-channel DIN 41612 type C
 The component side is totally laminated by copper
 No conducting connection to the component side by etched free holes
 If the copper coating is grounded, the electrical components are optimally shielded against the solder side
 By this HF, digital and analog circuits can be built up with high reliability



Order no	Thickness	Material	Size
PUV.201GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm

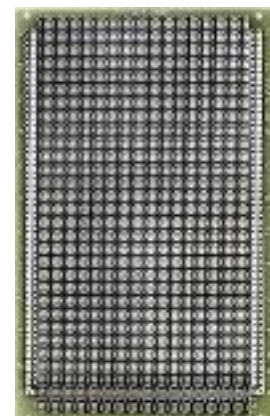


Prototyping Board RE 321 (double sided)

Double-sided 35 µm Cu
 Plated through holes (PTH)
 Hot air leveling (HAL-leadfree)
 Hole spacing 2.54 x 2.54 mm
 36 x 55 soldering pads 2.00 x 2.20mm
 Hole diameter 1.00 mm
 Connector 32/64/96-channel DIN 41612 grid 2.54 mm type C



Order no	Thickness	Material	Size
PUV.321GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm



SMD-Bread Board RE 436 (double sided)

Double-sided 35 µm Cu
Plated through holes (PTH)
Surface chem. Sn
SMD hole spacing 1.27 x 1.27 mm
39 x 59 soldering pads 1.00 x 1.00 mm
Hole diameter 0.30mm

Order no	Thickness	Material	Size
PUV.436GE	1.5mm	Epoxy fibre glass FR4	100 x 160mm



SMD-Prototyping Board RE 435

Double-sided 35 µm Cu
Plated through holes (PTH)
Surface chem. Sn
SMD hole spacing 1.27 x 1.27 mm
39 x 59 soldering pads 1.00 x 1.00 mm
Hole diameter 0.30mm

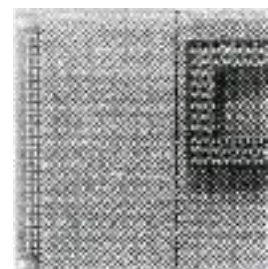
Order no	Thickness	Material	Size
PUV.435GE	0.8mm	Epoxy fibre glass FR4	53 x 95mm



PGA-Prototyping Board RE 440 (double sided)

Double-sided 35 µm Cu
Plated through holes (PTH)
Hot air leveling (HAL-leadfree)
Surface with soldering stop mask
Staggered hole grid 2.54 x 2.54mm, thus duplication of the borings (interstitial)
Soldering pads 1.4mm Ø
4304 holes 0.8mm Ø
Particularly appropriate for PGA sockets in staggered grid 2.54 x 2.54mm
Connector 32/64/96-channel DIN 41612 type C
Working temperature max. 150°C
Solder bath proof: 260°C > 50 Sec.

Order no	Thickness	Material	Size
PUV.440PGA	1.5mm	Epoxy fibre glass FR4	100 x 160mm

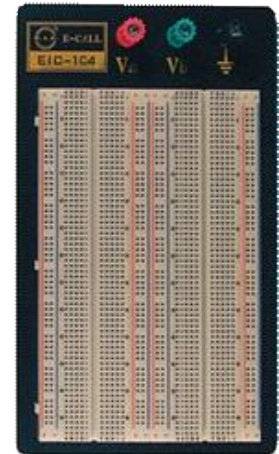


Sprays

Sprays for PCB making

Solderless Breadboard (1660 Tie-point) EIC-104

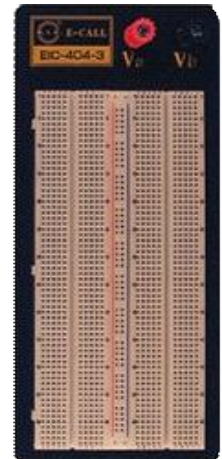
Material: ABS plastic colour printed, alu plate
 2 Terminal strips, 1260 tie-point
 4 Distribution strips, 100 tie-point
 3 Binding posts
 Dimensions: board 165 x 110 x 8.5mm
 Dimensions: metal plate 215 x 130 x 1.2mm



Order no
PGL.104

Solderless Breadboard (1380 Tie-point) EIC-404-3

Solderless Breadboard (1380 Tie-point) EIC-404-3
 Material: ABS plastic colour printed, alu plate
 2 Terminal strips, 1280 tie-point
 1 Distribution strip, 100 tie-point
 2 Binding posts
 Dimensions: board 165 x 80.8 x 8.5mm
 Dimensions: metal plate 215 x 100 x 0.8mm



Order no
PGL.404

Jump Wire for Solderless Breadboards

Pre-cut jump wires are a great convenience for using with a solderless breadboard. They are pre-cut, pre-stripped and pre-formed. The wire ends are stripped 1/4 inch and bent 90°. The coloured insulation indicates the length of the wire.

Order no	Content per Packet	Length of Wire	Colour
PGL.KS02	200	5.08mm	red
PGL.KS03	200	7.62mm	orange
PGL.KS04	200	10.16mm	yellow
PGL.KS05	200	12.70mm	green
PGL.KS06	150	15.24mm	blue
PGL.KS07	150	17.78mm	purple
PGL.KS08	150	20.32mm	grey
PGL.KS09	150	22.86mm	white
PGL.KS10	100	25.40mm	brown
PGL.KS20	100	50.80mm	red
PGL.KS30	75	76.20mm	orange
PGL.KS40	75	101.60mm	yellow
PGL.KS50	75	127.00mm	green



Jump Wire Kit 25 Pieces each of 14 Different Length

Jump Wire Kit 25 Pcs Each of 14 Different Length

Pre-cut jump wires are a great convenience for using with a solderless breadboard. They are pre-cut, pre-stripped and pre-formed. The wire ends are stripped 1/4 inch and bent 90°. The coloured insulation indicates the length of the wire.

Wire diameter: AWG #22 solid wire (0.6mm)
 0.1"(no insulation) 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 2, 3, 4 and 5 inches
 in various colours
 Stripped end 1/4 inch & bent 90°
 14 kinds of length / each 25 pcs
 Box size: L=270 W=124 H=30mm
 RoHS-konform



Order no
PGL.KS350



Subject to alterations and errors.
 Pictures are a guide only.