



ESSENTRA
COMPONENTS

Product Guide

THE ULTIMATE GUIDE TO PCB HARDWARE

HELP FOR CHOOSING THE RIGHT PCB HARDWARE

Whether you're designing a data cabinet, home appliance, office equipment, cable junction box or almost anything that involves electrics, you'll need PCB hardware components to help you manage your project. We've put together this guide to help you understand the different components you can use for your printed circuit board design and, consequently, your application.

We strongly recommend that you try the printed circuit board hardware you need before you buy—request **free samples** so that you can ensure they're right for your application. You can also download **free CADs** to help with your design.

WHAT YOU NEED TO KNOW

Below are the different types of PCB hardware you might need to consider, along with some information on applications and materials.



HARDWARE AND APPLICATIONS

A table highlighting hardware usage by application

Page: 3



PCB FAN PARTS

Prevent PCBs from overheating

Page: 8



PCB SUPPORTS

Raise, support, and space your PCB above a surface

Page: 4



PCB LED HARDWARE

Manage your PCB LED lighting

Page: 10



PCB STANDOFFS AND SPACERS

Raise, support, and space your PCB above a surface

Page: 5



PCB GROMMETS

Fasten PCBs

Page: 11



CARD GUIDES, CARD EJECTORS AND PULLERS

Remove and replace PCBs ("card" refers to the board itself)

Page: 6



MATERIALS OVERVIEW

A glance at the strengths and, sometimes, weaknesses, of materials that make PCB hardware

Page: 12-13









PCB MOUNTING BLOCK

Mount PCBs to the chassis within equipment

Page: 7

HARDWARE BY APPLICATION

A good starting point is to see what solutions are commonly used for certain applications.

 Solutions	 Consumer Electronics & Office Machinery	 Consumer Appliances	 Data Cabinets	 Electrical Cabinets	 Automotive
PCB supports	✓	✓	✓	✓	✓
PCB standoffs and spacers	✓	✓	✓	✓	✓
Card guides, ejectors and pullers	✓		✓	✓	
PCB mounting block	✓	✓	✓	✓	✓
PCB fan accessories	✓	✓	✓	✓	✓
PCB LED hardware	✓	✓	✓	✓	✓
PCB grommets	✓		✓	✓	✓

PCB HARDWARE COMPONENTS

Before choosing your hardware, you might find it helpful to read [How to ensure a smooth PCB assembly](#). The information could help you decide which components you should use. Otherwise, here's a look now at the hardware you need.








PCB SUPPORTS

PCB supports, also known as PCB support pillars and PCB support posts, do what the name says: they support the mounting of a PCB. They do this by joining your PCB board to the required surface. They also add an element of insulation and protection from electrical transmission, while providing a more secure, stable hold. For materials, you can choose between plastics and metal. Plastics make your PCB lighter, and you might prefer the ease of installation that most of these supports offer.

Mounting options vary, and include **adhesive**, **edge locking**, **reverse locking**, **screw locking** and **snap lock**. Here's a look at the primary categories:

MOUNTING TYPES

<div style="text-align: center; margin-bottom: 10px;">  <p>1</p> </div> <p>THREADED 1. Standard: Held in position with the use of a nut to give a very secure fixing that can be released and re-tightened. 2. Undercut: Provides a more secure connection by being fixed into the thread. 3. Self-tapping: No closing washers or nuts necessary due to self-tapping thread.</p>	<div style="text-align: center; margin-bottom: 10px;">  <p>2</p> </div> <p>SNAP FIT Quickly pushes into a panel or chassis hole, giving a strong but efficient mounting that saves you time when undergoing installation. DIFFERENT TYPES AVAILABLE: Edge lock, bayonet and fir tree.</p>
<div style="text-align: center; margin-bottom: 10px;">  <p>3</p> </div> <p>SNAP LOCK Pushes into a panel or chassis hole, giving a secure but easily releasable fix.</p>	<div style="text-align: center; margin-bottom: 10px;">  <p>4</p> </div> <p>PRESS FIT/BLIND HOLE Fins hold securely to a range of binding holes with a painted style that drives easily into applications with space restrictions.</p>
<div style="text-align: center; margin-bottom: 10px;">  <p>5</p> </div> <p>ADHESIVE BASE Adhesive tape eliminates the need for a mounting hole, providing time and space efficiencies.</p>	

EXAMPLES OF PCB SUPPORTS INCLUDE:

Need: Fast and easy installation

Solution: **SELF-ADHESIVE PCB SUPPORT PILLARS - NON-LOCKING**

[View online](#)

Why?

- Double-sided adhesive backed PCB support
- Release tab for quick installation
- Locks onto board, but is releasable with a pinch
- Nylon
- Rated UL94 V-2
- Operating temp range: -40°C to 85°C (-40°F to 185°F)



Need: Easy installation for more mechanical strength

Solution: **PCB SUPPORT PILLARS - LOCKING/TEARDROP/THREADED MALE**

[View online](#)

Why?

- Threaded male end mounts securely with a hex nut
- Top end has a small, low-profile, snap-lock teardrop nose that holds the PCB in place
- Nylon 6/6
- Rated UL94 V-2
- Operating temp range: -40°C to 85°C (-40°F to 185°F)



Need: Connect multiple boards or when back of the panel is not easily accessible

Solution: **PCB SUPPORT PILLARS - TWO-PRONG SNAP-LOCK/TWO-PRONG SNAP-FIT**

[View online](#)

Why?

- Mounted on both sides with a low profile two-prong fastener
- One side is locking and the other is a releasable snap-fit
- Available in a variety of styles
- Nylon 6/6
- Rated UL94 V-2; can also be produced as a custom part in UL94 V-0
- Operating temp range: -40°C to 85°C (-40°F to 185°F)



PCB STANDOFFS AND SPACERS

PCB standoffs and spacers help maintain space and positioning of components within your PCB. Both can have the same shapes. You can get a hexagonal standoff or a hexagonal spacer. You can also choose a round standoff and round spacers.

So what exactly is the difference? Spacers are unthreaded, with a through hole. Standoffs are threaded on both ends and come in both male and female designs. Sometimes you'll see the description "threaded round spacer". This is a standoff, because it's threaded. The bottom line is, they have the same purpose. The difference is in whether or not they're threaded.

MATERIALS: PLASTIC, METAL OR CERAMIC?

Materials vary. Use ceramic spacers for extremely high-temperature applications. PCB plastic spacers, such as a Nylon PCB standoff, offer good corrosion resistance and are cost-effective for mass production, while still having good mechanical properties. They're also the preferred choice over metal if you need a lightweight alternative.

EXAMPLES OF PCB STANDOFFS AND SPACERS INCLUDE:

Need: Sturdy, insulated spacing for high-power electronic applications

Solution: PCB STANDOFFS - ROUND/
METRIC THREADED/INSULATOR/
NYLON & BRASS

[View online](#)

Why?

- Female to female threaded round standoffs
- No assembly equipment required – apply by hand
- High mechanical strength
- Metric Nylon standoffs with brass inserts
- Nylon 6/6
- Rated UL94 V-2
- Operating temp range: -40°C to 85°C (-40°F to 185°F)



Need: Easy installation

Solution: PCB STANDOFFS - HEXAGONAL/
THREADED/SELF-TAPPING

[View online](#)

Why?

- Hexagonal female, with through hole
- Self-tapping standoff – screw threads the plastic for strong hold
- Nylon 6/6
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



Need: Good isolation for the fastening screw

Solution: PCB SPACER - NON-THREADED/
ROUND/THROUGH

[View online](#)

Why?

- Non threaded spacer
- Round spacers available in:
 - Nylon 6/6, operating temp range: -40°C to 85°C (-40°F to 185°F), UL94 V-2
 - Heat Stabilised Nylon, black, UL94 V-2, operating temp range: -40°C to 125°C (-40°F to 257°F)
 - Impact Modified Nylon, UL94 V-2, operating temperature range: -40°C to 65°C (-40°F to 149°F)
 - Acetal, UL94 HB, max operating temp: Up to 85°C (203°F)
 - PVC, UL94 V-0, operating temp range: 0°C to 50°C (32°F to 122°F)
 - Polystyrene, UL94 HB, max operating temp range: Up to 75°C (167°F)
 - Polyethylene, maximum operating temperature Up to 65°C (149°F)
 - Polyoxymethylene, maximum operating temperature Up to 85°C (185°F)



Need: Sturdy, insulated spacing for high-power electronic applications

Solution: PCB STANDOFFS - ROUND

[View online](#)

Why?

- Male round standoff spacers
- Installed by hand; no assembly equipment required
- Ideal when high mechanical strength is needed
- Round Nylon standoffs with brass inserts
- Available as male/female hexagonal standoff insulator
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



YOU CAN LEARN MORE ON HOW TO CHOOSE YOUR PCB SPACER FROM OUR GUIDE, THREE TOP TIPS FOR SELECTING PCB SPACERS.

YOU CAN ALSO LEARN MORE FROM OUR VIDEO [HERE](#).

CARD GUIDES

PCB card guides are used to mount circuit boards in tight spaces. One example of this is a PCB rack. Use a PCB vertical card guide or a horizontal one depending on the mounting direction of PCBs in your application. Card guides are often used to save space and prevent boards from bending. They're easy to install and some come with adhesive backs while others give you a locking action. Both give your PCB more stability. In addition, some options help when your PCB needs protection against shock and vibration.

EXAMPLES INCLUDE:

Need: Stand up to shock and high vibration

Solution: PCB CARD GUIDES - HORIZONTAL/ SNAP-IN/DEEP CHANNEL

[View online](#)

Why?

- Horizontal card guides Nylon 6/6
- Allows for maximum PCB retention
- Accepts PCB thicknesses: 1/16", 3/32" and 1/8"
- Rated UL94 V-0
- Operating temperature range: -40°C to 65°C (-40°F to 149°F)



Need: Added stability

Solution: PCB CARD GUIDES - VERTICAL/SNAP-IN/LOCKING

[View online](#)

Why?

- Vertical mount PCB card guide
- Snap-in locking tabs hold board in place more securely
- Tension guides with double channel enable side-by-side mounting
- Nylon 6/6
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



Need: Added stability for parallel mounting

Solution: PCB CARD GUIDES - HORIZONTAL/ADHESIVE/ NO MOUNT/SLIDE IN/ONE SIDED

[View online](#)

Why?

- Plastic PCB card guides-nylon
- Innovative horizontal mounting method
- Firm retention for any board width
- Easy installation and removal for PCB placement
- Rated UL94 V-0
- Maximum operating temperature range: 65°C (149°F)



CARD EJECTORS AND PULLERS

A card ejector, also known as a puller, inserter and extractor, is fitted to relieve stress to the PCB and its circuitry by helping to remove the card from restricted spaces. It's mounted onto the board itself, providing a handle, so that a technician can pull out the board, avoiding the circuitry. In essence, a card ejector performs as a lever. It uses mechanical force against a guide rack or chassis.

A circuit card puller attaches to a PCB to help pull it out and push it back into position. These are used when you're facing difficult insertion and extraction problems, which means you're probably dealing with having to remove large PCBs and tight-gripping multi-pin edge connectors.

EXAMPLES OF CARD EJECTORS AND PULLERS INCLUDE:

Need: Ease of pulling out board and pushing back in

Solution: PCB CARD PULLERS

[View online](#)

Why?

- Attaches to circuit board
- Curved tab for fingertip grip
- Nylon 6/6
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



Need: Aid in removing PCB from restricted space

Solution: PCB CARD INSERTERS & EXTRACTORS

[View online](#)

Why?

- Mounted directly onto board
- Handle allows board removal without touching circuitry

Available in:

- Nylon 6/6, UL94 V-2, operating temperature range: -40°C to 90°C (-40°F to 194°F)
- Glass-Filled Nylon 6/6, UL94 V-0, operating temperature range: -30°C to 140°C (-22°F to 284°F)



Need: Easy card insertion and extraction

Solution: CIRCUIT BOARD EJECTOR

[View online](#)

Why?

- Optimum leverage to assist in extraction
- Includes roll pin for mounting
- Nylon 6/6
- Rated UL94 V-2
- Operating temperature range: -40°C to 90°C (-40°F to 194°F)



PCB MOUNTING BLOCK

If you're using solderless connectors, use a **PCB mounting blocks** to provide a secure connection. They're especially useful for mounting printed circuit boards and small panels at right angles within your application. PCB mounting blocks are popular in a variety of industries, including automotive, telecommunications and consumer electronics.

EXAMPLE OF A PCB MOUNTING BLOCK INCLUDES:

Need: Electrical connection between chassis and board

Solution: **PCB MOUNTING BLOCK**

[View online](#)

Why?

- Nylon PCB mount screw terminal block connector
- Mounts into a diameter #4 or M3 Self-Tapping Screw hole on chassis or other PC board
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



DOWNLOAD FREE CADS AND TRY BEFORE YOU BUY

Free CADs are available for most solutions, which you can download for free. You can also request free samples to ensure the solutions you've chosen are exactly what you need.

Request your **free samples** or download **free CADs** now.



FUSE COVERS

A fuse cover encases electrical fuses, providing insulation and protection from A fuse cover encases electrical fuses, providing insulation and protection from contamination and liquids.

EXAMPLES OF FUSE COVERS INCLUDE:

Need: Snug fit for fuse clips and blocks mounted to PCB printed circuit board

Solution: **FUSE COVERS - QUICK FIT, FLEXIBLE, TRANSPARENT**

[View online](#)

Why?

- Can be used with screws, pin plugs and receptacles
- Flexible PVC
- Rated UL94 V-0
- Maximum operating temperature: 105°C (221°F)



Need: Hold and cover fuse

Solution: **FUSE COVERS - HOLDER & COVER**

[View online](#)

Why?

- Can be used with screws, pin plugs and receptacles
- Window in holder enables visual inspection
- Glass-Filled Nylon 6/6
- Rated UL94 V-0
- Operating temperature range: -40°C to 130°C (-40°F to 266°F)



Need: Protect fuse when maintenance is performed on surrounding components

Solution: **FUSE COVERS - RIGID, SOLID**

[View online](#)

Why?

- Snaps into fuse and fuse holder
- Window in holder enables visual inspection
- Nylon 6/6
- Rated UL94 V-0
- Operating temperature range: -40°C to 110°C (-40°F to 230°F)



PCB FAN ACCESSORIES

Fans are your best option for your PCB’s heat management. To enhance your fan’s safety and efficiency, you’ll need the right parts.

FAN GASKETS

One of those parts is a fan gasket, which can provide the noise and vibration insulation you need while preventing air leaks. By sealing the small gap between the fan and the housing, efficiency is improved, feedback airflow is minimised, and with it, losses in air pressure.



FAN GUARDS

A fan guard protects your PCB by preventing dust and water ingress. Materials vary when it comes to fan parts, and that goes for fan guards. For instance, you can get a metal fan guard or plastic. Your choice will probably depend on the look and strength you’re after, and which option fits your budget. A **metal fan guard** is installed with a screw-mount application. Plastic is a bit more versatile. For example, you can get a **plastic fan guard with a screw-mount application** or one that snaps in.



MOUNTS

Mounts help position and secure your fan. You can even get anti-vibration rubber fan mounts to reduce noise generated by the fan. These type of **fan mounts** are usually made out of an elastomer, such as silicone rubber or Acrylonitrile-Butadiene-Styrene (ABS).



FAN RIVETS

When mounting your fan, you can simplify the process and save time and money by eliminating the need for screws and nuts with **fan rivets**. **Fan snap rivets** have prongs that expand to hold securely as the pin is driven in.

Another option: **push fan rivets**, which are also easy to install and expand when pushed in for a tight fit. To remove, simply pull the head.



PCB FAN ACCESSORIES

FILTERS

Filters are another example. Fan filters remove any dust or small particles from the fan’s airflow to prevent any internal damage. You can get a metal fan filter – **stainless steel and aluminium** is one example – or a **felt fan filter**. Aluminium and stainless-steel filters allow more free air flow, with more dust as well. They’re easier to clean than felt, and have a sleeker design. Felt is harder to clean, but keeps the dust out. Also, the felt fan’s design takes up more space.

For your convenience, you can also get **fan filter sets**, which provide you with a finger guard, filter cover, mesh filter and felt filter.

EXAMPLES INCLUDE:

Need: Prevent obstruction and debris from falling into fan blades

Solution: **FAN GUARDS, PLASTIC AND SNAP-IN**

[View online](#)

Why?

- Plastic fan guard –ABS
- Easy to install with snap-in application
- Fan guard also protects user from bodily harm
- Rated UL94 HB
- Operating temperature range: 0°C to 60°C (32°F to 140°F)



Need: Protective seal while isolating noise and vibration

Solution: **FAN GASKETS**

[View online](#)

Why?

- Silicone rubber material provides tight seal while reducing transmission of noise and vibration
- Prevents air leaks
- Operating temperature range: -70°C to 150°C (-94°F to 302°F)



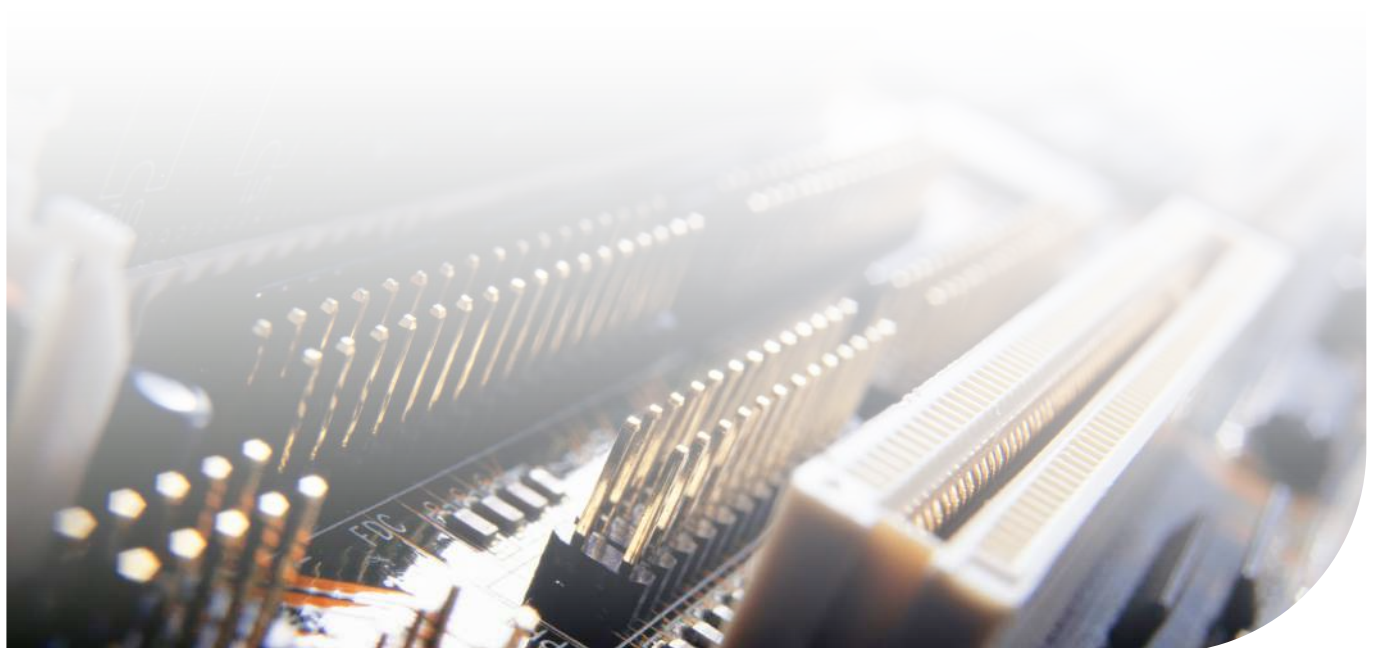
Need: Remove particles suspended in air

Solution: **FAN FILTERS, MESH**

[View online](#)

Why?

- Stainless steel fan filter mesh
- Operating temperature range: -200°C to 870°C (-328°F to 1598°F)



LED MOUNTING HARDWARE

LED components, such as LED spacer mounts, position and restrict movement of your LED lights. LED spacers raise the LED from the board surface and provide more stability, rigidity and height conformity. This rigidity and stability make the manufacturing process easier. It's also vital when the board is serviced, or when the PCB or other parts need repairs.

Other critical components include LED mounts and holders. Your LED light mount will have holes to pass the leads through before soldering the LED to the PCB. While through hole LED sizes vary, your LED spacer must have the right number of holes in order to take the leads attached.

For applications where the LED is not mounted directly on the PCB, you'll need an LED lens holder.

You might also need an LED light pipe, which transmits light from the LED mounted on a PCB. LED light pipe technology translates to excellent visual performance, providing uniform lighting. It also significantly reduces shadows and glare. Another big advantage: they're easy to install.

EXAMPLES OF PCB LED HARDWARE INCLUDE:

Need: Ease in guiding the lead wires and preventing leads from shorting

Solution: LED SPACERS - ROUND, IMPERIAL SPACERS, MOULDED, T-1 3/4

[View online](#)

Why?

- Internal tapered dividers guide lead wires, preventing shorting
- Fits a standard 5mm LED
- Minimises shifting and height variation
- Nylon
- Rated UL94 V-2
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



Need: Auto insertion and pre-assembly

Solution: LED SPACERS - ROUND, METRIC SPACERS

[View online](#)

Why?

- Self-retaining feature for auto insertion and pre-assembly
- Available in three different styles to accommodate both 3mm and 5mm LEDs
- Provides height control and lead wire retention and stability
- PVC
- Rated UL94 V-0
- Operating temperature range: 0°C to 50°C (32°F to 122°F)



Need: Transmits light at a 10° angle

Solution: LED LENS HOLDER

[View online](#)

Why?

- Holds a standard 5mm LED
- Available with or without a sealing O-ring
- Polycarbonate
- Rated UL94 V-0
- Operating temperature range: -40°C to 130°C (-40°F to 266°F)



Need: Mount LEDs at a 90° angle

Solution: LED MOUNT - 90° ANGLE

[View online](#)

Why?

- Panel mount LED applied easily by hand
- Available in two styles that accommodate both 3mm and 5mm LEDs
- Nylon 6/6
- Rated UL94 V-0
- Operating temperature range: -40°C to 120°C (-40°F to 248°F)



Need: Make illumination crystal clear in desired location

Solution: LED LIGHT PIPE

[View online](#)

Why?

- Available with either a flat or domed front shape
- Provides LED ESD protection (electrostatic discharge)
- Polycarbonate
- Rated UL94 V-0
- Operating temperature range: -40°C to 130°C (-40°F to 266°F)



SCREW GROMMETS

While these can be used to secure panels, plastic screw grommets can also be used to securely fasten PCBs.

EXAMPLES OF SCREW GROMMETS INCLUDE:

Need: Secure PCB through round hole

Solution: **SCREW GROMMETS - NATURAL, FOLDING LEGS**

[View online](#)

Why?

- Nylon screw grommet
- Tightened screw provides a secure lock (self-tapping screw needed)
- Legs expand to secure heavy PCB components
- Rated UL94 V-0
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



Need: Secure PCB through square hole

Solution: **SCREW GROMMETS - NATURAL, SQUARE HOLE**

[View online](#)

Why?

- As self-tapping screw is engaged, the bottom legs are forced outward, eliminating need for a nut
- Square hole prevents rotation
- Rated UL94 V-0
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)



TRANSISTOR INSULATOR

You'll also need transistor insulators. These transfer heat efficiently between your transistors and heatsinks. Another option is thermal grease, but this is laborious and extremely messy. Instead, place your **transistor insulators** between your transistors and heatsinks. Not only will the transistor be electrically insulated, but thermally conductive as well. Call it transistor heat sink insulation if you want. The result is, your heatsink heats up and dissipates the heat.

To eliminate the chance of a short circuit or electric shock to your **transistor insulator**, use **transistor covers** to mount and protect transistors.

EXAMPLE OF TRANSISTOR INSULATOR SOLUTIONS INCLUDES:

Need: Transfer heat efficiently between heatsinks and transistors

Solution: **TRANSISTOR INSULATORS - PAD**

[View online](#)

Why?

- Silicone Rubber and Fibreglass specially formulated to act as thermally conductive insulator
- Non-toxic transistor insulator pads
- Rated UL94 V-0
- Operating temperature range: -60°C to 150°C (-76°F to 302°F)



DOWNLOAD FREE CADS AND TRY BEFORE YOU BUY

Free CADs are available for most solutions, which you can download for free. You can also request free samples to ensure the solutions you've chosen are exactly what you need.

Request your **free samples** or download **free CADs** now.



MATERIALS OVERVIEW

Materials play an important role in PCBs and their components. Before designing your board, we recommend that you check out [Your PCB substrate: a guide to materials](#).

Because PCB solutions come in a choice of materials, it's important for you to know each of those materials' properties. This knowledge will give you an idea of the performance you can expect from the solution. With that in mind, here's an overview of common materials for PCB hardware:



NYLON

- Resists heat, corrosion and abrasions.
- Stands up to most chemicals well, though dilute acids pose a threat.
- Heat-Stabilised Nylon: shares the same mechanical properties as Nylon 6/6, but also has the advantage of heat stabilization. Stand up to 125°C (257°F) temperatures.
- Impact-Modified Nylon: extremely high-impact strength at low temperatures and resistance to heat distortion, compared to Nylon 6/6.
- Glass-Filled Nylon: gives materials tensile strengths of up to 32,000 psi, which is around 200% higher than the base resin. Also, heat deflection temperatures increase from 75°C to 130°C (185°F to 266°F).

POLYVINYL CHLORIDE (PVC)

- Dense and resists impact deformation.
- Very good tensile strength.
- Resists chemicals and alkalis.
- Poor heat stability, which is why additives are put in during manufacturing. This helps stabilise the material at higher temperatures.
- Melt temperature of 100°C - 260°C (212°F to 500°F), heat deflection temperature of 92°C (198°F) and tensile strength of 1,000 to 3,625 psi (Flexible PVC) / 4,930 to 9,000 psi (Rigid PVC).

ACETAL

- Strong and rigid.
- Low coefficient of friction against metals and other plastics – good choice when your priority is dimensional stability.
- Low water absorption and good electrical properties.
- Resistance to fatigue and organic solvents.
- Outstanding wear characteristics.
- Insulator with a maximum service temperature of 76.9°C to 96.9°C (170°F to 206°F).
- Melting temperature of 160°C to 184°C (320°F to 363°F).

POLYSTYRENE (PS)

- Very good electrical insulator.
- Good chemical resistance to diluted acids and bases.
- Poor oxygen and UV resistance.
- Brittle and has poor impact strength due to the stiffness of the polymer backbone.
- Low crystallinity results in low, upper temperature limit for continual use.
- Some of its weaknesses can be offset by copolymerization with other monomers. For example, it can be copolymerized with ABS, giving it high stress and impact resistance and higher tensile strength.

POLYCARBONATE

- Strong, stiff and tough.
- Can maintain rigidity up to 140°C (284°F) and toughness down to -20°C (-4°F).
- Amorphous – excellent mechanical properties and high dimensional stability.
- Thermally resistant up to 135°C (275°F) and rated as slow burning.
- Limited chemical and scratch resistance.
- Tendency to yellow with long-term exposure to UV light.

ACRYLONITRILE-BUTADIENE-STYRENE (ABS)

- Excellent impact, chemical and abrasion resistance.
- Excellent stiffness and strength.
- Easily machined and thermoformed.
- Good dimensional stability.
- Excellent electrical properties.
- Max service temperature 61.9°C to 76.9°C (143°F to 170°F).

STAINLESS STEEL

- Corrosion resistant to salt spray and most oxidizing acids.
- High ductility.
- Excellent drawing, forming and spinning properties.

BRASS

- Generic term for a range of copper-zinc alloys with various properties, which include strength, machinability, wear-resistance, ductility, hardness, electrical and thermal conductivity, and corrosion resistance.
- Adding zinc to copper improves strength and other properties.
- Does not become brittle at low temperatures.
- Excellent thermal conductivity.
- Durable with aesthetic appeal.

DOWNLOAD FREE CADS AND TRY BEFORE YOU BUY

Free CADs are available for most solutions, which you can download for free. You can also request free samples to ensure the solutions you've chosen are exactly what you need. If you're not quite sure which product will work best for your application, our experts are always happy to advise you.

You'll like our flexibility too, if it's just a small order you need, no problem. Whatever your requirements, you can depend on fast despatch.

Request your **free samples** or download **free CADs** now.



MORE CHOICE
45,000
PRODUCTS AVAILABLE



FREE SAMPLES
TRY BEFORE
YOU BUY



FAST DELIVERY
RELIABLE
DELIVERY

Email us at sales@essentracomponents.co.uk or speak to one of our experts for further information on the ideal solution for your application **0845 758 5070**