

Ordering PCBs and Parts Online

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Purpose

This E-Workshop supplemental document is a guide on ordering PCBs from manufacturers such as PCBWay, as well as ordering parts from distributors like DigiKey and Mouser.

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CSV	Comma Separated Value
PCB	Printed Circuit Board
HASL	Hot Air Solder Leveling
ENIG	Electroless Nickel Immersion Gold

1. Parts Sourcing

When designing a circuit, you may have an idea in mind on which components you will be using, but making sure to find those components are available is a necessary step in your design process. To find parts, it is common to use catalogs from well known manufacturers or to use distributors like DigiKey and Mouser.

The main electronics parts distributors in North America are Digikey, Mouser, and Arrow.

1.1 DigiKey

DigiKeys Canadian website is located at <https://www.digikey.ca/>. When you visit DigiKey, you can browse through their products, or search for one if you know what you are looking for.

As an example, we need a resistor: This resistor needs to be in an 0805 SMD package, have a resistance of 68k Ohms, and have a tolerance of 1%.

Step 1: Search for component on DigiKey.ca

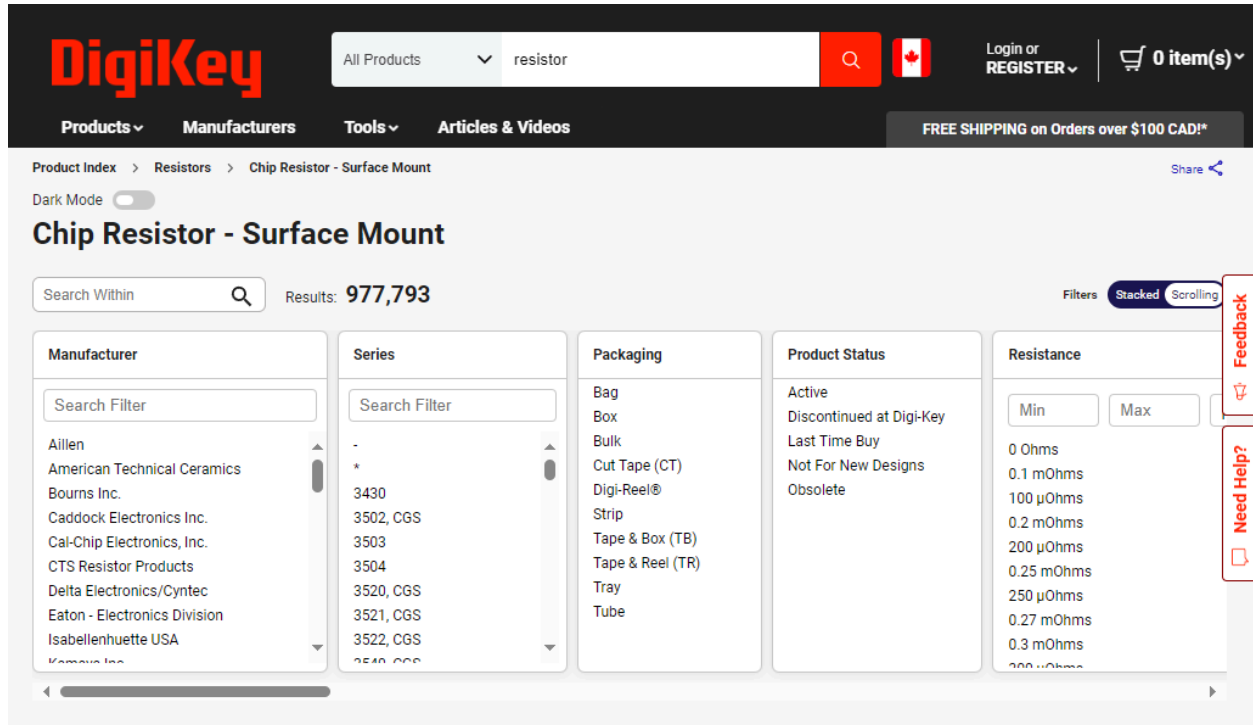
Search for resistors with the term “Resistor” in the search bar at the top of the website home page. The results are shown below.

The screenshot shows the DigiKey.ca website interface. At the top, the DigiKey logo is on the left, and a search bar contains the word "Resistor". To the right of the search bar are icons for a Canadian flag, a login/register button, and a shopping cart icon showing "0 item(s)". Below the search bar is a navigation menu with "Products", "Manufacturers", "Tools", and "Articles & Videos". A banner for "FREE SHIPPING on Orders over \$100 CAD!*" is visible. The main content area shows "Showing 2,203,065 Results for 'resistor'" and a "Dark Mode" toggle. On the left, there are "Filters" and "Categories" sections. The "Filters" section includes a "Search Within" box and checkboxes for "In Stock" and "RoHS Compliant". The "Categories" section lists various product types. The "Top Results" section displays a grid of product categories with their respective item counts:

Product Category	Item Count
Chip Resistor - Surface Mount	977,793 Items
Through Hole Resistors	495,357 Items
Chassis Mount Resistors	22,608 Items
Resistor Networks, Arrays	36,690 Items
Resistor Kits	408 Items
Trimmer Potentiometers	18,744 Items
Specialized Resistors	797 Items
Adjustable Power Resistor	1,132 Items
Rotary Potentiometers, Rheostats	
Ceramic Capacitors	

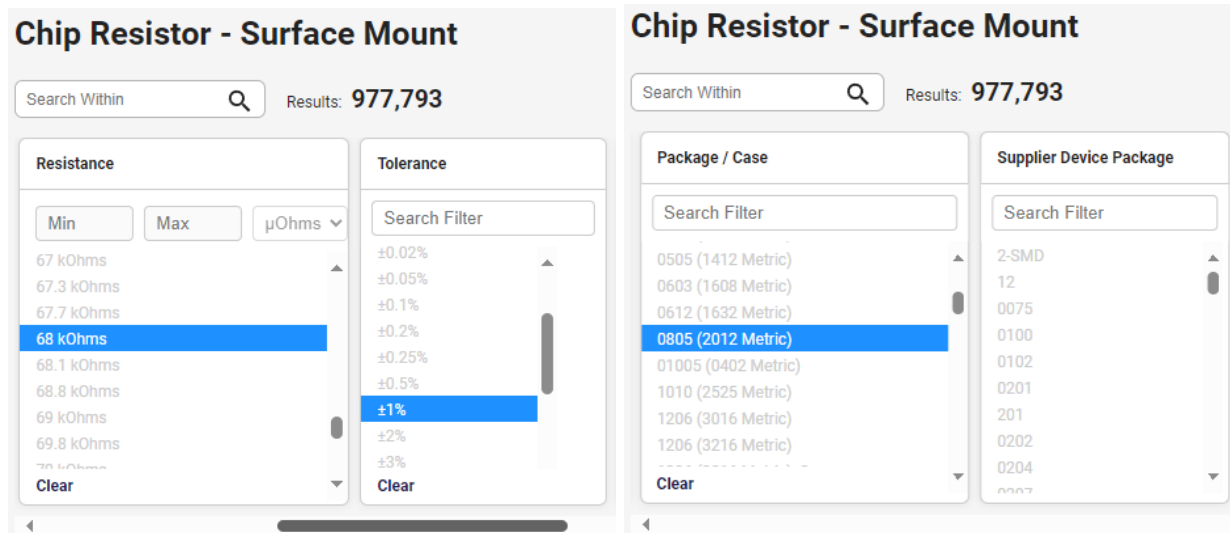
Step 2: Select the style of component you want

For the given requirements, a surface mount resistor is needed, so we select the *Chip Resistor - Surface Mount* page. The resulting page is shown below.

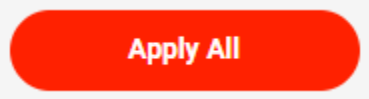


Step 3: Filter the results and narrow down your search

For the given requirements, a surface mount resistor is needed. Select your requirements to filter out parts that don't match. We can scroll through the different filter options with the horizontal scroll bar.



Make sure to hit Apply All after selecting what you want.







Step 4: Find appropriate component in the results

Scroll down to see the filtered results. In our case, we have 86 results. The arrows at the header of the table allows you to sort by lowest/highest price, quantity, value, etc. You can also download the results as a CSV file.

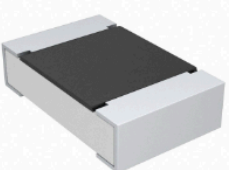
When choosing a component make sure to order from a reputable manufacturer, and always check the datasheet for differences to your requirements. Once you find the component you want, check the pricing and stock to fit the quantity you need.

Showing 1 - 25 of 86 Download Table

Compare	Mfr Part #	Quantity Available	Price	Series	Package	Product Status	Resistance
<input type="checkbox"/>	 RMCF0805FT68K0 RES 68K OHM 1% 1/8W 0805 Stackpole Electronics Inc	67,880 In Stock	1: \$0.16000 Cut Tape (CT) 5,000: \$0.00648 Tape & Reel (TR)	RMCF	Tape & Reel (TR) ? Cut Tape (CT) ? Digi-Reel® ?	Active	68 kOhms
<input type="checkbox"/>	 CR0805-FX-6802ELF RES SMD 68K OHM 1% 1/8W 0805 Bourns Inc.	54,003 In Stock	1: \$0.16000 Cut Tape (CT) 5,000: \$0.00706 Tape & Reel (TR)	CR0805	Tape & Reel (TR) ? Cut Tape (CT) ? Digi-Reel® ?	Active	68 kΩ
<input type="checkbox"/>	 RC0805FR-0768KL RES 68K OHM 1% 1/8W 0805 YAGEO	250,203 In Stock	1: \$0.16000 Cut Tape (CT) 5,000: \$0.00857 Tape & Reel (TR)	RC_L	Tape & Reel (TR) ? Cut Tape (CT) ? Digi-Reel® ?	Active	68 kΩ
<input type="checkbox"/>	 RK73H2ATTD6802F RES 68K OHM 1% 1/4W 0805 KOA Speer Electronics, Inc.	107,423 In Stock	1: \$0.16000 Cut Tape (CT) 5,000: \$0.00986 Tape & Reel (TR)	RK73H	Tape & Reel (TR) ? Cut Tape (CT) ? Digi-Reel® ?	Active	68 kΩ

Product Index > Resistors > Chip Resistor - Surface Mount > Vishay Dale CRCW080568K0FKEAC Share

Dark Mode



CRCW080568K0FKEAC

Digi-Key Part Number
541-CRCW080568K0FKEACTR-ND - Tape & Reel (TR)
541-CRCW080568K0FKEACCT-ND - Cut Tape (CT)
541-CRCW080568K0FKEACDKR-ND - Digi-Reel®

Manufacturer
Vishay Dale

Manufacturer Product Number
CRCW080568K0FKEAC

Description
RES 68K OHM 1% 1/8W 0805

Manufacturer Standard Lead Time
18 Weeks

Detailed Description
68 kOhms ±1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Thick Film

Customer Reference

Datasheet
[Datasheet](#)

EDA/CAD Models
[CRCW080568K0FKEAC Models](#)

In-Stock: 58,874

Can ship immediately

QUANTITY

Add to Cart

Add to List

All prices are in CAD

Cut Tape (CT) & Digi-Reel®

QTY	UNIT PRICE	EXT PRICE
1	\$0.16000	\$0.16
10	\$0.05500	\$0.55
50	\$0.03560	\$1.78
100	\$0.03010	\$3.01
500	\$0.02100	\$10.50

Step 5: Ordering components

When ordering components, you may be given a prompt for options. In the pricing list on the product page (bottom left) there will be pricing for Cut Tape or Reel. You want to order Cut Tape for small quantities as the Reel option is primarily meant for pick-and-place machines and carry a quantity in the thousands.

Product Index > **Resistors** > **Chip Resistor - Surface Mount** > Stackpole Electronics Inc RMCF0805ZT0R00

Dark Mode

RMCF0805ZT0R00

Digi-Key Part Number RMCF0805ZT0R00TR-ND - Tape & Reel (TR)
RMCF0805ZT0R00CT-ND - Cut Tape (CT)
RMCF0805ZT0R00DKR-ND - Digi-Reel®

Manufacturer Stackpole Electronics Inc

Manufacturer Product Number RMCF0805ZT0R00

Description RES 0 OHM JUMPER 1/8W 0805

Manufacturer Standard Lead Time 17 Weeks

Detailed Description 0 Ohms Jumper Chip Resistor 0805 (2012 Metric) Automotive AEC-Q200 Thick Film

Customer Reference

Datasheet [Datasheet](#)

In-Stock: 1,504,261

Can ship immediately
Factory Stock: 6,435,000

QUANTITY

OPTIONS

PACKAGING	QUANTITY	UNIT PRICE	EXT PRICE
<input checked="" type="radio"/> Cut Tape	25	\$0.02000	\$0.50
<input type="radio"/> Digi-Reel®		9.50 CAD	

\$0.50

[Add to List](#) [Add to Cart](#)

All prices are in CAD

Cut Tape (CT) & Digi-Reel®

Once you have the parts in your Cart, you can adjust quantities, add more parts by part numbers, or even upload a CSV document containing a list of all the parts you may need.

Shopping Cart

Name This Cart Add Parts From

[Share Copy](#) [Download](#) [Resume Cart](#) [New Cart](#)

<input type="checkbox"/>	Product Details	Quantity	Availability	Unit Price	Extended Price
<input type="checkbox"/> 1	 RMCF0805ZT0R00CT-ND RMCF0805ZT0R00 Stackpole Electronics Inc RES 0 OHM JUMPER 1/8W 0805 <input type="text" value="Customer Reference"/>	<input type="text" value="25"/>	Immediate	0.02000	\$0.50

[Add to List](#) [Save for Later](#) [Delete](#)

Manual Entry

Quantity Part Number Customer Reference [Add to Cart](#)

Upload a File

Upload a File: Drag a file here (.xls, .xlsx, .csv, .txt) or [Browse](#)

Bulk Add

One product per line, delimiter must be a comma. (S, P4525-ND, ABC123)

[Add to Cart](#)

Cart Summary

Subtotal	\$0.50
Shipping	\$8.00
GST:	\$0.03
HST:	\$0.00
PST:	\$0.04
Total	\$8.57

\$99.50 away from **FREE SHIPPING**

FedEx International Priority | 8.0

[Checkout](#)

[Schedule Shipments](#)

[Delay Entire Order](#)

Your data will be encrypted and transmitted securely.

1.2 Mouser

Mousers Canadian website is located at <https://www.mouser.ca/>. When you visit Mouser, you can browse through their products, or search for one if you know what you are looking for.

Mouser's website operates in a similar manner to DigiKey, so as an example, we can look for a through-hole ceramic NP0 capacitor rated for 25 volts or higher, and with a capacitance of 2.2 nanofarads.

Step 1: Search for component on Mouser.ca

Search for capacitors with the term “Capacitor” in the search bar at the top of the website home page. The results are shown below.

The screenshot shows the Mouser Electronics website interface. At the top, there is a search bar with the word "Capacitor" entered. Below the search bar is a navigation menu with options like "Products", "Manufacturers", "Services & Tools", "Technical Resources", and "Help". The main content area displays "Capacitors" as the search result, with a sub-menu showing "Types of Capacitors" and a list of various capacitor types and their counts. A "Results: 844,950" banner is visible, along with "Applied Filters" for "Passive Components" and "Capacitors".

Types of Capacitors

- Aluminum Electrolytic Capacitors (81,630)
- Capacitor Hardware (265)
- Capacitor Kits (312)
- Ceramic Capacitors (517,675)
- Feed Through Capacitors (851)
- Film Capacitors (108,512)
- Mica Capacitors (7,438)
- MLCCs (507,815)
- Motor Start Capacitors & Motor Run Capacitors (1,343)
- Niobium Oxide Capacitors (145)
- Polymer Capacitors (15,596)
- Safety Capacitors (24,681)
- Silicon RF Capacitors / Thin Film (35,866)
- Supercapacitors / Ultracapacitors (1,363)
- Tantalum Capacitors (63,583)
- Trimmer / Variable Capacitors (1,286)

Results: 844,950 | Smart Filtering

Applied Filters: Passive Components > Capacitors

Unlike Digikey, upon searching for a common component, the result of the search will provide the types of that component, as well as a complete list of results further down the page.

Step 2: Select the style of component you want

For the given requirements, a ceramic capacitor is needed, so we select the *Ceramic Capacitor* component type. The resulting page is shown below.

Ceramic Capacitors



Ceramic Capacitors are in stock with same-day shipping at Mouser Electronics from industry leading manufacturers. Mouser is an authorized distributor for many ceramic capacitor manufacturers including AVX, Cornell Dubilier, EPCOS, KEMET, Murata, Taiyo Yuden, TDK, Vishay, Yageo and many more. Please view our selection of ceramic capacitors below.

Products (517,681) | Datasheets | Images | Newest Products

Types of Ceramic Capacitors | List Images

- Capacitor Arrays & Networks (1,063)
- MLCCs - Multilayer Ceramic Capacitors (507,821)
- Ceramic Disc Capacitors (1,742)
- Specialty Ceramic Capacitors (7,055)

Results: 517,681 | Smart Filtering

Applied Filters: [Passive Components](#) > [Capacitors](#) > [Ceramic Capacitors](#) ✕

Manufacturer	Capacitance	Voltage Rating DC	Dielectric	Tolerance	Termination Style
Chemi-Con	0.01 pF	2.5 VDC	-	0 %, + 100 %	Axial
Cornell Dubilier	0.027 pF	4 VDC	AH	0.01 pF	Axial Ribbon
CTS	0.033 pF	6 VDC	B	0.015 pF	J Form Lead
Eaton	0.068 pF	6.3 VDC	BD	0.02 pF	Metal Frame
Johanson	0.1 pF	6.4 VDC	BE	0.03 pF	Microstrip
Kamaya	0.11 pF	10 VDC	BG	0.05 pF	Pin
KEMET	0.12 pF	16 VDC	BH	0.1 pF	Radial
Knowles	0.13 pF	20 VDC	BJ	0.2 pF	Radial Ribbon
KOA Speer	0.15 pF	25 VDC	BL	0.25 pF	Screw
KYOCERA/AVX	0.16 pF	35 VDC	BN	0.5 pF	SIP
MACOM	0.18 pF	50 VDC	BP	1 pF	SMD/SMT
Murata	0.2 pF	63 VDC	BQ	25 pF	Stud Threaded
Nichicon	0.22 pF	75 VDC	BR	0.01	Through Hole
Samsung Electro-Mechanics	0.24 pF	80 VDC	BU	0.02	
Semtech			BV		
Spectrum Control			BX		

Step 3: Filter the results and narrow down your search

For the given requirements, a through-hole ceramic capacitor is needed. Select your requirements to filter out parts that don't match.

Results: 101 | Smart Filtering

Applied Filters: [Passive Components](#) > [Capacitors](#) > [Ceramic Capacitors](#) > [MLCCs - Multilayer Ceramic Capacitors](#)

- Multilayer Ceramic Capacitors MLCC - Leaded ✕
- Capacitance = 2200 pF ✕
- Dielectric = C0G (NP0) ✕
- Termination Style = Radial ✕
- Voltage Rating DC = 25 VDC ✕

Series	Tolerance	Lead Spacing	Maximum Operating Temperature	Diameter	Length	Width
ACR Indust C0G HT200C	1 %	2.54 mm	+ 125 C	-	3.81 mm	3.14 mm
GoldMax 300 Comm C0G	2 %	5.08 mm	+ 200 C		5.08 mm	5.08 mm
	5 %	0.2 in				5.84 mm
	10 %	6.35 mm				5.97 mm
						6.6 mm

Reset All | Apply Filters

Apply Filters

Make sure to click Apply Filters after selecting what you want.

Step 4: Find appropriate component in the results





Scroll down to see the filtered results. In our case, we have 101 results. You can download the results as a CSV file, search for a part within the results, and sort the list columns by price, manufacturer, and part number.

When choosing a component make sure to order from a reputable manufacturer, and always check the datasheet for differences to your requirements. Once you find the component you want, check the pricing and stock to fit the quantity you need.

Search within results

Part # / Keyword

In Stock Active RoHS Compliant
 Normally Stocked New Products

Select	Image	Part #	Mfr.	Description	Datasheet	Availability	Pricing (CAD)	Qty.
<input type="checkbox"/>		Mfr. Part # C320C222F3G5TA Mouser Part # 80-C320C222F3G5TA	KEMET	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF COG 1% LS=2.54mm Learn More	Datasheet Product Comments	494 In Stock Alternative Packaging	1: \$1.51 10: \$1.19 100: \$0.892 500: \$0.673 1,000: View	<input type="text"/> <input type="button" value="Buy"/> Min.: 1 Mult.: 1
<input type="checkbox"/>		Mfr. Part # C315C222F3G5TA Mouser Part # 80-C315C222F3G5TA	KEMET	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF COG 1% LS=2.54mm Learn More	Datasheet Product Comments	379 In Stock Alternative Packaging	1: \$1.51 10: \$1.19 100: \$0.892 500: \$0.673 1,000: View	<input type="text"/> <input type="button" value="Buy"/> Min.: 1 Mult.: 1
<input type="checkbox"/>		Mfr. Part # C322C222K3G5TA Mouser Part # 80-C322C222K3G5TA	KEMET	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF COG 10% LS=5.08mm Learn More	Datasheet Product Comments	Non-Stocked Lead-Time 12 Weeks Alternative Packaging	1: \$0.537 10: \$0.374 100: \$0.225 1,000: \$0.133 2,500: View	<input type="text"/> <input type="button" value="Buy"/> Min.: 1 Mult.: 1
<input type="checkbox"/>		Mfr. Part # C320C222K3G5TA7301	KEMET	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF	Datasheet	Non-Stocked	500: \$2.02 1,000: \$1.87 2,500: View	<input type="text"/> <input type="button" value="Buy"/> Min.: 500



All Products > Passive Components > Capacitors > Ceramic Capacitors > MLCCs - Multilayer Ceramic Capacitors > Multilayer Ceramic Capacitors MLCC - Leaded > KEMET C315C222F3G5TA

[See an Error?](#)

[Return to Search Results](#)

Order online in 02:43:59 to ship today. [Shipping Details](#)

C315C222F3G5TA

Images are for reference only
See Product Specifications

[Share](#)

Mouser #:	80-C315C222F3G5TA
Mfr. #:	C315C222F3G5TA
Mfr.:	KEMET
Customer #:	<input type="text" value="Customer #"/>
Description:	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF C0G 1% LS=2.54mm
Datasheet:	C315C222F3G5TA Datasheet (PDF)
ECAD Model:	3D Model

Download the free [Library Loader](#) to convert this file for your ECAD Tool. [Learn more about ECAD Model.](#)

In Stock: 379

Stock: 379 Can Ship Immediately

Factory Lead-Time: 19 Weeks [?](#)

Enter Quantity:

Minimum: 1 Multiples: 1

Pricing (CAD)

Qty.	Unit Price	Ext. Price
1	\$1.51	\$1.51
10	\$1.19	\$11.90
100	\$0.892	\$89.20
500	\$0.673	\$336.50

Step 5: Ordering components

If you have an account with Mouser, you can save your cart as a list of components to order again. When on the checkout page, you can add parts by part number directly, however there is no method of uploading a list of part numbers like DigiKey.

[Continue Shopping](#)


SHOPPING CART

[Print This Page](#) [Share](#) [Export](#) [New Cart](#) [Schedule](#)

to access saved carts or to save this order as a project

<input type="text" value="Mouser # / Mfr. #"/>	<input type="text" value="Customer #"/>	<input type="text" value="Quantity"/>	<input type="button" value="Add"/>
--	---	---------------------------------------	------------------------------------

1 - 1 of 1

Sort	Product Detail	Description	Quantity	Availability	Unit Price (CAD)	Ext. Price (CAD)	
1	 <p>Mouser #: 80-C315C222F3G5TA Mfr. #: C315C222F3G5TA Mfr.: KEMET Customer #: <input type="text" value="Customer #"/></p>	Multilayer Ceramic Capacitors MLCC - Leaded 25V 2200pF C0G 1% LS=2.54mm RoHS Compliant QuickView	<input type="text" value="25"/>	25 Ships Now	\$1.19	\$29.75	<input type="button" value="Remove"/>
View Additional Product Info View Product Update							

2. Ordering PCBs

After designing a PCB, it needs to be manufactured. To have the PCB manufactured, it is easiest to outsource the manufacturing process to a dedicated PCB manufacturer. There are plenty of manufacturers in China, Europe, and some in the United States. In this section we will cover manufacturers such as JLCPCB and OSH Park.

2.1 JLCPCB

JLCPCB is a PCB manufacturing company based in China. Their website is located at <https://jlcpcb.com/>. When you arrive at JLCPCB's home page, you can add your PCB designs in the form of a Gerber file .zip package into the "Add gerber file" box, then get an instant quote.

The screenshot shows the JLCPCB website interface. At the top, there is a navigation bar with links for '3D Printing', 'CNC Machining', and 'Mechatronic Parts'. The main header includes the JLCPCB logo and navigation links: 'Why JLCPCB?', 'Capabilities', 'Support', 'Resources', 'Order now', 'My file', 'Sign in', and a shopping cart icon with a '0' notification. The main content area features a large blue banner for 'ECONOMY SERIES INDUSTRIAL COMPONENTS' with a 'Purchase Now >' button. To the right of the banner is a shopping cart filled with various industrial components, with a tag indicating 'COST SAVING UP TO 68%'. Below the banner is a form for generating a quote, with fields for 'Layers' (options: 1, 2, 4, 6, More), 'Dimensions' (100 x 100 mm), and 'Quantity' (5). An 'Instant Quote' button is located to the right of the form. An 'Add gerber file' button is also present on the left side of the form.

Accessing ordering options

To see all ordering options, click the "Order now" tab at the top left corner of the home page.

This screenshot shows a close-up of the website's navigation bar. It includes a currency selector (USD), a help icon, and a 'Ship to' dropdown menu. Below these are the navigation links: 'Order now' (highlighted in blue), 'My file', 'Sign in', and a shopping cart icon with a '0' notification.

Note

Make sure your PCB design has tolerances within the manufacturer's capabilities.

<https://jlcpcb.com/capabilities/pcb-capabilities>

Ordering options

After going to the “Order Now” page, upload your Gerber files as a .zip package and select the desired manufacturing options below.

The screenshot shows the JLCPCB ordering interface. At the top, there are navigation links for USDShip to, Order now, My file, and Sign in. Below this is a menu with four categories: Standard PCB/PCBA (selected), Advanced PCB/PCBA, SMT-Stencil, and 3D/CNC. The main area features a large blue button labeled "Add gerber file" with a sub-note: "Only accept zip or rar, Max 20 MB, View example > All uploads are secure and confidential." Below this are links for "Instructions For Ordering" and "Log in to view your upload history".

The configuration section includes:

- Base Material:** FR-4 (selected), Flex, Aluminum, Copper Core, Rogers, PTFE Teflon.
- Layers:** 1, 2 (selected), 4, High Precision PCB, 6, 8, 10, 12, 14, 16, 18, 20.
- Dimensions:** 100 x 100 mm.
- PCB Qty:** 5.
- Product Type:** Industrial/Consumer electronics (selected), Aerospace, Medical.

On the right side, there is a summary panel:

- Charge Details:** Special Offer (\$2.00), Via Covering (\$0.00), Surface Finish (\$0.00).
- Build Time:** PCB: 2 days (\$0.00), 24 hours (\$7.10).
- Calculated Price:** \$4.00 - \$2.00. Note: Additional charges may apply for special cases.
- Shipping Estimate:** Charge: Choose destination country first, Weight: 0.29kg.

A "SAVE TO CART" button is located below the price summary.

- Base material is FR4 by default. This base material is what most PCBs today are made with.
- Number of layers is based on your PCB design. Most projects will have 2 to 4.
- Selecting the Aerospace or Medical product type will ensure the PCBs are manufactured to the appropriate specifications for those industries.

The screenshot shows the "PCB Specifications" section with the following options:

- Different Design:** 1 (selected), 2, 3, 4, [empty].
- Delivery Format:** Single PCB (selected), Panel by Customer, Panel by JLCPCB.
- PCB Thickness:** 0.4, 0.6, 0.8, 1.0, 1.2, 1.6 (selected), 2.0.
- PCB Color:** Green (selected), Purple, Red, Yellow, Blue, White, Black.
- Silkscreen:** White (selected).
- Surface Finish:** HASL(with lead) (selected), LeadFree HASL, ENIG.

- Different Design sets the number of different PCB designs you want made.
- Delivery format allows selection between ordering standalone PCBs or uncut panels of PCBs.
- PCB thickness is the overall thickness of the board. Most common is 1.6 mm.
- Surface finish is the tinning on pads. HASL with lead is cheapest however it is not ROHS compliant. ENIG is the most resistant to corrosion.

High-spec Options ^

Outer Copper Weight	?	<input type="button" value="1 oz"/>	<input type="button" value="2 oz"/>
Via Covering	?	<input type="button" value="Tented"/>	<input type="button" value="Untented"/>
		<input type="button" value="Plugged"/>	<input type="button" value="Epoxy Filled & Capped"/>
		<input type="button" value="Copper paste Filled & Capped"/>	
Board Outline Tolerance	?	<input type="button" value="±0.2mm(Regular)"/>	<input type="button" value="±0.1mm(Precision)"/>
Confirm Production file	?	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Remove Order Number	?	<input type="button" value="No"/>	<input type="button" value="Yes"/>
		<input type="button" value="Specify a location"/>	
Flying Probe Test	?	<input type="button" value="Fully Test"/>	
Gold Fingers	?	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Castellated Holes	?	<input type="button" value="No"/>	<input type="button" value="Yes"/>

- Outer Copper Weight determines the thickness of the outer copper layer. 1 oz is 35 um thick, and 2 oz is 70 um thick.
- Via covering will determine whether the via's will be exposed or covered by epoxy/silkscreen.

Advanced Options v

PCB Remark

PCB Assembly

COUPON

Free Assembly for your PCB order

Stencil

Order together with PCB

- The PCB Remark option allows you to leave a note for the manufacturer.
- The Stencil option will order your PCB together with a stencil. The stencil is a thin sheet of stainless steel that has holes in the exact locations as your SMD pads, allowing you to apply solder paste to all the pads evenly.

Placing the order

Once you are done selecting your desired options, go to the top left of the page and click “Save to Cart”. You will be prompted to log in or create an account.

Once the order is saved to your cart, you can view your cart and click “Proceed to Checkout” to finalize the order.

The screenshot displays the JLCPCB website interface. On the left, a shopping cart summary is shown with the following details:

- Charge Details:** Special Offer (\$2.00), Via Covering (\$0.00), Surface Finish (\$0.00).
- Build Time:** PCB: 2 days (\$0.00) or 24 hours (\$7.10).
- Calculated Price:** \$4.00 - \$2.00. A note states: "Additional charges may apply for special cases".
- Shipping Estimate:** Charge: Choose destination country first, Weight: 0.29kg.

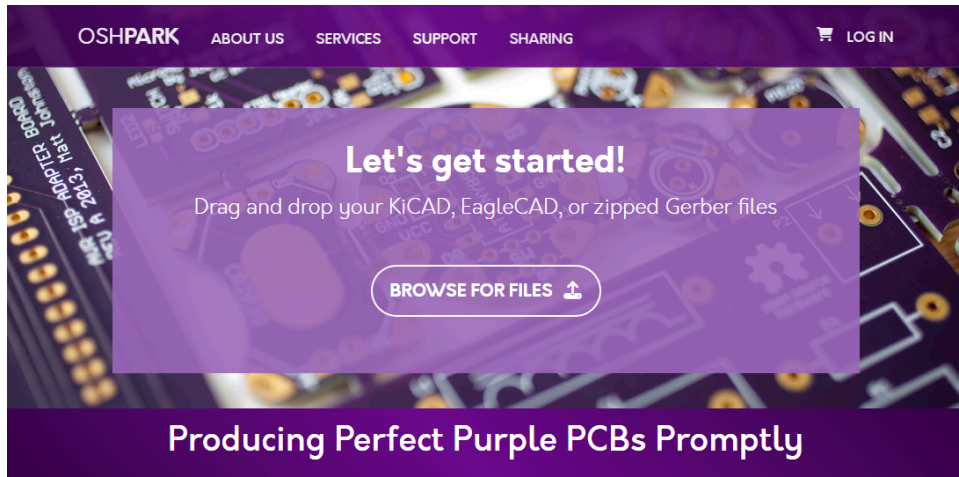
A "SAVE TO CART" button is located below the price section. The main content area on the right is titled "Order History" and includes a search bar with fields for "Order Type", "Date", and "Order #, Gerber file name...". Below the search bar are tabs for "Product Details", "Product Files", "Price", and "Order Sta". The main content area currently displays "No orders found" with an "Order Now" button. A user profile picture is visible in the bottom right corner of the main area.

Alternatives

PCBWay is a similar PCB manufacturing service to JLCPCB, also based in China. Their website can be located at <https://www.pcbway.com/>. The layout of PCBWay's website is very similar to that of JLCPCB, so the JLCPCB instructions are applicable to PCBWay as well.

2.2 OSH Park

OSH Park's is a PCB manufacturing company based in the United States. Their website is located at <https://oshpark.com/>. When you arrive at OSH Park's home page, you will see a 'Let's get started!' menu at the center of the page. By clicking on the 'Let's get started!' menu, you can upload Gerber files, or your projects KiCAD (or EagleCAD) files.



After uploading files

Once the files have been uploaded, OSH Park will render images of your design as a PCB, and you can provide the project name and your email.

About your board

We detected a 2 layer board of 1.79 x 1.74 inches (45.5 x 44.2mm)
 3 boards will cost \$15.60

Board name

Email

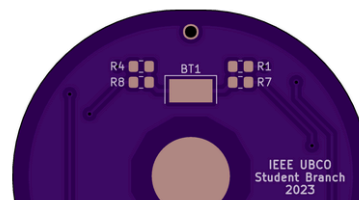
Notes

i Processing information

- Processing blinker_gerbers.zip as KiCad ZIP file.
- Noting blank layer: blinker-NPTH.drl
- 2 layer board of 1.79x1.74 inches.
- Your project contains 2 drill files, we've merged them. ["blinker-NPTH.drl", "blinker-PTH.drl"]



Top



Design verification

Once you upload the files, and provide a project name with your email, you will be given rendered images of your PCB. At this stage, you can look over these images to catch any errors before sending the designs off for manufacturing.

Design verification

Once you are done verifying your design, you can add any additional options to the order or add another board, and then click “Checkout” to finalize the order.

Order Item	Quantity	Item Cost	Total
PCBs	3	\$15.60	\$15.60

2 oz copper, 0.8mm thickness
 Flex
 After Dark (Black Substrate + Clear Mask)
 Super Swift Service
 Medium Run

Remove from Cart Board Preview Add Coupon Sub Total: \$15.60 Add another board Checkout

Note

Make sure your PCB design has tolerances within the manufacturer's capabilities.

<https://docs.oshpark.com/submitting-orders/drill-specs/>

<https://docs.oshpark.com/services/>

3. Additional Notes & Useful Resources

When using DigiKey or Mouser, keep in mind the shipping costs of parts. It is not economical to order one or two parts at a time. To make the most of your money, put in larger orders to make it worth the shipping cost. Additionally, DigiKey provides free shipping with orders over \$100 CAD (at the time of this document's creation).

When ordering PCB's, like parts, it is more economical to order in larger quantities rather than one-off orders. If you make a design, it is best to test it and ensure it works before ordering, and then order a large quantity.

When ordering PCBs from OSH Park, you are unable to change the solder mask and silkscreen colors because they only manufacture with purple solder mask and white silkscreen.

Useful Web Pages

Topic	URL
Parts Vendors	DigiKey: https://www.digikey.ca/ Mouser: https://www.mouser.ca/ Arrow: https://www.arrow.com/
PCB Manufacturers	JLCPCB: https://jlcpcb.com/ PCBWay: https://www.pcbway.com/ OSH Park: https://oshpark.com/
Manufacturer Tolerances	JLCPCB: https://api.jlcpcb.com/capabilities/capabilities PCBWay: https://www.pcbway.com/capabilities OSH Park: https://docs.oshpark.com/submitting-orders/drill-specs/ , https://docs.oshpark.com/services/
Tools and Calculators	https://www.digikey.ca/en/resources/online-conversion-calculators