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2020 Whitepaper

Anatomy of a Price

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Introduction

The pricing of electronic components is more secretive than most commercial transactions, yet within this veil of opaqueness, many practitioners would rate themselves as competent and probably better than average regarding their electronic component pricing performance using techniques, practices and “rules of thumb” that they feel are superior. Their belief is that they are doing a good job based on current results vs historical performance and the feedback received from predisposed individuals or experts. Historical means *in the past* so they may not be aware of trends or changes in the market.

Having worked with many companies, I can say that sometimes these practitioners are right; they do have best in class practices and get superior results. Unfortunately, more often than not, others have blind spots that leave money on the table. In both scenarios, there were opportunities that had been overlooked.

This lack of market price awareness exists on both sides of the negotiation table. Buyers often only have access to their historical pricing and the pricing from companies acquired by their employer. Some combine this knowledge with memories of pricing from past roles in previous companies. They can also scour the internet to see what is being offered by distributors. Here, the key term is *offered*, not what is being *transacted* which ensures a big difference. Sellers - either manufacturers or distributors - often don’t have a view of market pricing other than through win-loss analysis and even with this, they could have a local - rather than global - perspective with incomplete visibility across all types of customers. Complexity increases and visibility decreases as the supply chain lengthens to include manufacturers, distributors and contract manufacturers in their various roles. Throw into this mix supposed value-added services that may or may not be included as part of the price make up and clarity dwindles.

Electronics is arguably the most non-transparent commodity on earth & the only intrinsically deflationary industry. When all is considered, pricing in the supply chain is complex and lacks visibility.

Price & Cost

Price is not cost but it becomes your cost once you accept it. Pricing is an *art* whereas costing is a *science*. You can easily create an equation for cost as you know all the factors that make it up. In simple terms, you have the price you pay for materials and services, the value of labor that you put into making a product and some method of allocating overheads that bring in support costs, machine and factory depreciation, throughput, rework costs and yields amongst others. Your costs can change based on the assumptions you make (e.g. should I depreciate over 5 years or 7 years?) but you can still determine and understand your costs.

What's the equation for price? There isn't one. Sure, finance has one like "*Gross Margin = Price – Cost*" and you can use it to figure out if you can afford a price. If your factory tells you your cost is $X and the shareholders want 45% gross margin, you can calculate the price you must get but this tells you nothing about whether the price is good or bad compared to market. You also have no idea what your competitors might be paying.

White sheet analysis is another informative approach if your plan is to become a component manufacturer. It attempts to get a price by calculating a manufacturer's cost from a model of key manufacturing steps. Assumptions are made on material costs and factory performance, using factors like rework, yield, throughput as well as labour and machine load rates. Markup factors for overhead and gross margin are then added to arrive at a price. This is extremely time consuming, error prone and ignores important factors like intellectual property content, market popularity and other less tangible but important considerations. It is scientific guesstimation.

Price Makeup

So, what is a price?

A price is the value of an item that the buyer has agreed to pay and the seller has agreed to accept as the basis for a sales transaction. The price is confirmed as the price when the transaction occurs. How can one quickly determine what this price should be and its relevance to one's situation? This is a good question to be answered later in the Best

Practices section of this paper; however, the idea that your situation determines price brings in factors not considered in any of the “cost-based price” approaches.

Pricing as an art means price is determined by influences. Ask any artist what their influences are and they will tell you. Ask them for their equation and you will get a blank stare. Influences are hard - if not impossible - to put into an equation. Influences on negotiations create a distribution of prices obtained in the market ranging from a lowest price to a highest.

One might ask “What determines the lowest and highest prices in the market?” My answer is *influences*. I purport that the low-end price was agreed by the seller through a consideration of how much they were willing to lose on a component sale so that they can maintain a position in the market. Extreme competition and component popularity play a role in pricing that often forces sellers into a loss situation to stay in the business. Components like 100nf MLCC capacitors are an example of parts that could drive this scenario. They are extremely popular with lots of domestic and foreign manufacturers. E-auctions provide another circumstance that could propel a low-end price seller scenario as time induced panic and market share greed intertwine.

The scenario of higher price has the seller balancing the line between high and obscene pricing with the importance of this customer to them. Do they want to keep this business? The buyer would be asking how badly they need the component. If they can’t ship a $1M system because of a $0.02 component, they will pay a lot.

In between these extremes, there are thousands of buyers and sellers with teams operating under multiple influences to determine prices.

Situations

In this paper, I consider situations as a means of putting influence into context. Situations are intrinsic and extrinsic conditions that influence the behavior of the people or companies at the negotiating table. There are too many influences to list, but I will try to give you a feel for some of the more important ones.

Chaotic Market Dynamics

You are entering negotiations following two tough years of sourcing challenges. Two years ago, you fought material shortage issues with MLCCs and other components driven by growth in the automotive sector. Electronic and semi-autonomous vehicles created significant new and somewhat unexpected demand. You managed to get most of the supply you needed by paying a premium and last year you managed to get pricing down somewhat. Your current price is $1.03.

Last year you were consumed with sourcing issues brought on by tariffs and now, as you are preparing for negotiations, you see signs that lead time might be increasing. You are not sure if this is real but are concerned because the coronavirus pandemic has great potential for - or is already causing - disruption. You also see that the automotive sector is expanding again and telecom is rolling out the major 5G global infrastructure. Demand may well exceed supply, but you know that cost is a very important factor in both the telecom and automotive businesses which will help hold down pricing.

On the other hand, there has been a rapidly expanding internet of things (IoT) business that is driven by time to market and market share capture, not price. These companies will pay whatever it takes to get product so that their company shows top line growth. They are years away from having any of their purchasing decisions strongly influenced by price.

Given all this context, is $1.03 a good price for you? Should you be expecting cost reduction? Might any level of price increase represent good performance? What are you going to do?

Relationships

You are preparing a quotation for an important customer. During the past two years you have gone out of your way to ensure on time supply despite shortages occurring in the market. You have gone above and beyond, sometimes shorting other customers, so that this one can get parts. They have never said “thank you” nor acknowledged in any way how much you have done for them. They just keep demanding and belittling you.

The last quotation you sent to them was not well received. You quoted an increase as your prices from your supplier had increased. They have threatened to move their business to a competitor which, right now, might be a relief as you have just finished a quarrel with your spouse, but you can't afford the loss of revenue. What do you do?

Another scenario places you as the buyer who has worked with a particular sales representative for years. This is a good relationship where they know your family and are responsive to your requests. When your boss asks if you are getting good pricing, you ask this person and are assured that you have good pricing. You report to your boss that you are getting good pricing and head home with a feeling of satisfaction. Do you really have good pricing? Does your friend really know how your prices stand up in the market or is their opinion based only on the few customers who this salesperson deals with? What does the word "good" mean to this salesperson who has split loyalty between friendship with you and obligations to their profit-driven employer? How do you know?

Close relationships can be very expensive. Two good examples of expensive relationships for procured services occur at the corporate level in the selection of auditors and external legal council. These are highly relationship-driven selections. Competitive bidding across 3 or 4 equally competent firms can yield significant savings even when your company stays with the existing firm.

Component Popularity

Some components are more popular than others and have a lower price. They are made in high volume and satisfy a global demand. They are ubiquitous. Everyone has them in their product design. They may be made in the same factory using the same materials and process as others that are much less popular. Many designers have specified and qualified components with parameter values as outlined in a reference design and ignore similar ones with parameters slightly different. This creates a very popular and not so popular price dichotomy.

Popularity is different than volume as popularity is analogous to the total aggregated global demand of a component from all customers. If high popularity drives a lower

price and vice versa, the most popular varieties of a component series would be cheaper than the non-stocked ones which they are. There is then a range of negotiated prices in the market driven by relative popularity which is hard to determine.

A moderately popular component made by one manufacturer may be considered a highly popular component by a different manufacturer. Remember when you buy a component, you are buying functionality and, from a pricing perspective, the price you are willing to pay for functionality should not change from one manufacturer or supplier to another if quality and service are the same. As a result, the range of negotiated prices is at least two dimensional. In one-dimension, price may vary by parametric vales in a series and in the other dimension, variation is by manufacturer of equivalent parts.

How do you know what the popularity of a component is and how does this play into your negotiation strategy? One might believe that a manufacturer would know but often they don't. It's true, they know popularity for the most popular components they make but as popularity decreases, they may lose visibility. Their price competitiveness may become unclear as popularity can be hidden by poor market share performance of some of their devices.

Reputation

Buyer and seller companies' reputations play a role in pricing. While this is not as evident in business as in retail, it still exists. In retail, the brand often is the major contributor to price where intangibles drive the price more than the product itself. iPhones, designer label clothing, accessories and high-end automobiles are good consumer examples. Also, the price difference in brand name drugs compared to the generic brand makes the point.

On the business to business side, reputation still counts. In the early days of computing, IBM's reputation drove premium pricing. No IT manager ever got fired for buying IBM! Leading accounting and consulting firms get premium pricing as do market leaders in general. Leadership based reputations give customers confidence that products and services will meet the need and buyers cover if they don't. The warm and fuzzy feeling associate with dealing with leaders comes with a premium.

In negotiations, one should not be intimidated by the reputation of the company or individuals they are dealing with. Even if you are tiny against a giant, your negotiation mindset should drive action as equals on a level playing field. Represent your wants and needs effectively.

Preparation, practices and the negotiation

Top athletes prepare most of their lives for their events, the military trains continuously and then there is you heading into a negotiation. Top students have a study plan and prepare through review for examinations. All examples I can think of regarding top performance have results tied to practice excellence and preparation. Remember the other party is negotiating because they want something from you and they have prepared.

Companies need to prepare for negotiations, have adequately trained and conditioned staff and carry out negotiations in an environment that fits the task. Companies that do this well have best in class practices and get superior results. Professional sports teams usually arrive for a match one or two days before so they can acclimatize. The location of the games changes back and forth between matches so that home advantage is equalized.

Do you fly red eye into their location and begin negotiations first thing? Is there a dinner the night before that adds to your fatigue? These are not helpful things.

While negotiating joint ventures in China and having flown from North America, I was often honored with a banquet by our hosts and negotiating counterparts. At these dinners I was introduced to Chinese drinking strategy which was not at all good for the next day's negotiations. In Chinese tradition, they would toast their guests with Moutai, an expensive and strong Chinese liquor, or Seagram's XO, a potent whiskey. The first group toast was followed by several one on one toasts so that very soon I had had six or more drinks to their two. Also, after one or two drinks they would substitute tea or water in their glass and continue the Moutai or XO in mine. These next days were never fun. During the meeting they would suggest that I had agreed to things the previous evening. They also maintained home advantage throughout the negotiations. This example is extreme but makes the point.

Unlike sports teams where player trades are a common occurrence, your company's staff is relatively stable. Without training and continuous improvements being applied to your practices, the results you achieve can vary widely from player to player or team to team. You need to know of and adopt best in class practices to maintain advantage. Benchmarking is one best in class practice used in operations to highlight areas of performance variation. Using data-driven techniques is another.

In sports, player performance is constantly tracked, and their stats are available. Opposing teams know these on every player and have developed game strategies that offset opponents' advantages in speed, size or some other dimension. How well do you know the background of your negotiating counterparts? Making arguments that fit their field of expertise and their negotiating needs helps in selling your point. For example, a person with an operations background who is experienced in data driven techniques like Lean or SPC would be more open to benchmarking proposals than a Lawyer or Accountant. They may also want your company as a customer for marketing purposes or a long-term contract more than they want a particular price. Know your counterparts background and their key measures of success for their negotiation.

Payment terms and payment performance

Getting cash is important to a business and getting it when expected is critical to cash management. Payment terms are commitments that define when payments are to be made and payment performance relates to adherence to that commitment. Changes in payment terms and payment performance affect price.

Payment term changes impact price as suppliers try to recover the cost of working capital tied to the sale. Rest assured that if you negotiate a change to longer payment terms while maintaining the transfer price, the supplier will work to recover the expense in the long term by delaying cost reductions to achieve higher than otherwise attainable prices.

Payment terms are essentially derived from cost of capital calculation interwoven with price. Payment performance is different. There is an expectation that the buyer will

honour the terms agreement. Delays in payment, NSF surprises and accounting errors cause frustration on the part of the supplier and hurt the relationship. If this persists, suppliers will add hidden premiums to offset the trouble being caused. You may not see this as an increase, it may show up as lower price competitiveness after negotiations.

Let's assume you are a supplier entering negotiations. In good faith, you negotiated prices last year with net 30 days payment terms. The practice of your customer's accounting department is to pay all invoice net 90 days and they are doing this to your invoices despite your contract and constant follow-up. What are you going to do in this negotiation?

Many large corporations have mandated that their buyers insist on 90-day or 120-day terms; a change from previous 30-day or 60-day levels. They also want to achieve a cost reduction. Some of these companies also offer an option where the vendor can get paid in 10 days if they discount their invoice by 2%. An interesting observation is that 2% is about the same as the cost of capital for the 30-day to 60-day term extensions. If a supplier will accept a 2% discount, why was the negotiator not able to get that 2% as cost reduction in the past? Did they not know what reasonable negotiating targets were?

Spending Potential

I have argued based on the data that we have amassed that there is no correlation between price and volume. This statement goes against everything that purchasers are told. We are schooled in volume discounts, see high prices in low volume NRE purchases and can easily identify with a "volume drives down cost relationship" through things like set up time per unit reductions.

While I do not see a correlation with spending at the individual component level, relationships do emerge at the commodity level and with the total amount of business that a customer does with a company. It is important then that a supplier or manufacturer see your current total spending with them during negotiation and the total potential spending that could exist. This potential spending increase could come from allocation changes associated with good prices, qualification of more

components used in your products as alternate sources and from overall business growth.

Growth rate & potential

If your company has high growth potential, suppliers would love to participate in your success. They can be convinced to provide pricing based on your future state rather than your current reality. Suppliers most often have a tiered price structure of 3 or 4 tiers that set bounds on prices. Usually - but not always - the big guys, typically tier 1, get the best pricing. If your company is high potential or high growth, you can convince the supplier to place you in a better tier.

Company size

Small companies aren't necessarily disadvantaged in pricing when compared to large ones. Growth rate and potential, as discussed, are favourable factors as are relationships and reputation. I have seen poorly behaving, big companies pay more for components than much smaller ones. Large size should be an advantage, but the advantage can deteriorate by poor, sluggish business practices, arrogance, inflexibility and many other less than ideal attributes that makes working with a large company difficult, costly and just not fun.

Large companies, particularly those that grow through acquisition, may have poor visibility across the company on purchases. Subsequently, they are likely optimizing their negotiations at the divisional level rather than at the corporate one. This makes a large company no more advantaged than a smaller one of similar size to one of their divisions.

Industry Vertical

The market vertical you operate in raises special challenges for buyers of components. As example, Medical companies have less leverage because of stringent compliance requirements that make it extremely difficult to substitute components as the cost and time associated with a new component qualification are prohibitive. Automotive, Military and Aerospace have special qualifications and standards that must be met.

These companies along with their EMS partners (our largest customer group) have special challenges. Long qualification cycles, risk of obsolescence, extended time to market cycles from component selection to first sale make forecasting and negotiation price adherence difficult. When working through contract manufacturers things get more complex as the supply chain lengthens and the leverage with component manufacturers gets split in favour of the OEM over the EMS.

Life experience

Some individuals grow up in a culture of bartering whereas other cultures shy away from pressing on things associated with money. Some countries even take pride in their national stereotypes for bartering and frugality. My point here is that some individuals are more practiced in and have an affinity for frugality and bartering. These people have grown up negotiating/bartering for things from an early age, while others in different places are used to accepting the price they are told. Don't let your upbringing cause hesitation in negotiating for a fair deal with your counterpart. Be professional but not timid.

Poor Practices

Companies of all size have some bad practices that limit their performance. A short list of these is:

- Lack of preparation by not consolidating their total demand and level of business with a manufacturer or supplier
- Accepting the first quotation from a supplier and considering that a negotiation
- Not verifying the results from a long-standing good relationship. The adage "trust but verify" is excellent practice. I recently had this experience with health insurance. The new provider was less expensive with better coverage and service
- Establishing pricing on smaller than required level of business
- Taking distributor published pricing as transfer pricing
- Letting designers set pricing too early in the product lifecycle
- Not appreciating the service and support difference between brokers and franchised distributors
- Services costed in your price that are standard offerings

Best Practices

I have outlined some scenarios describing situations that can create wide variations in price for the same electronic component. How one navigates through this complexity and settles on appropriate pricing determines their spending competitiveness and negotiation success. Here are a few “best in class” navigation practices that can be used:

1. **Benchmark your spending**

   “Benchmarking is just good Supply Chain hygiene”. We hear this comment often from Senior SCM Executives. Benchmarking is a common practice in operations to determine how one is performing and identify improvement steps that can be taken. Benchmarking your prices against a reference library of components with specific component level price distributions based on real prices paid (not advertised) enables this. When benchmarking is combined with accurate prediction algorithms that tailor price targets to your specific situation, things get even better. My company, Lytica Inc., does this with products such as Freebenchmarking.com, Component Cost Estimator and SupplyLens™.

   Lytica’s approach to benchmarking electronic component prices is unique in the industry. It is based on a characterization of a client’s spending where the spending performance of each part type is quantified and reported as a parameter called competitiveness. Each manufacturer’s part number in the Lytica database has a statistical distribution associated with it. These distributions are made up from real customer prices for that component. The competitiveness is determined from a client’s price position within the distribution, in much the same way as a student’s grades are determined on a bell curve. When a component competitiveness is determined to be anomalous to its part type competitiveness, the client is given a suggested target price for that part at the part type competitiveness level.

   See white paper ‘Price Prediction Methodology’ for details on Lytica’s method.

Benchmarking will tell you important things:

1. How your spending performance is compared to market. In other words, how competitive are you in your purchases and where you rank against potential competitors.
2. Where savings opportunities lie. A component by component analysis of those devices that you should renegotiate along with a target price appropriate for you.
3. Where there is variation in your process performance to enable you to improve lower performing areas by copying practices from top performing ones.
   Benchmarking allows you to trust the feedback from suppliers on pricing while you verify their input with data driven statistics.

   Benchmarking provides focus on where the opportunities lie. Even operationally excellent companies have finite resources. With benchmarking, they easily reveal lots of savings in parts they don't have time to scrutinize.

It's surprising that many companies buying millions, even billions, of dollars of material have such bad data. Manufacturing part numbers are spelled incorrectly, wrong manufacturer names are assigned, multiple client part numbers are assigned to the same components and are housed in a variety of ERP and PDM systems, such that a corporate-wide view of purchase and spending cannot be put together. There are millions of dollars tied up in inefficiencies and errors associated with unclean data.

Get your data cleaned and aggregated to provide a company wide view for negotiations.

2. Know your facts and numbers

What does data-driven mean? To me it means having a thorough understanding of all the important factors that impact what you are doing and using real information, not beliefs and opinions to guide your actions. One should have facts that can answer questions like these if you are a buyer. A seller should have comparable data.

- What is my spend on electronic material in total, by commodity and by component?
- What is my total spend with this manufacturer in total, by commodity and by component?
- What is my total spend with this distributor in total, by commodity and by component?
- How is leverage created with this negotiation counterpart?

- How would the business transaction levels change if I changed the allocation strategy across multi-sourced components?
- What level of price reduction would drive a change in allocations?
- How much did I spend with this supplier last year and how much will I be spending this year (or next 12 months)?
- What level of cost reduction did this supplier give me last year, the year before, the year before that? How does this compare to other manufacturers?
- What was the operational performance of the company like for quality and delivery?
- Were they responsive to requests?
- Did they support new design projects appropriately?
- Did they cause any warrant problems for my company?

You get the picture.

3. Get manufacturers and distributors working together

Manufacturers need to know how important your company is to them. Often when you buy through distribution, and if your total potential volume is split across several of them, the manufacturer may have no idea who you are or how important your company is or will be. My advice is to tell them and keep in touch periodically so that they are aware of who you are; particularly the manufacturers who make your key, cost driver components. There is nothing wrong with sending a note to a manufacturer's regional VP of Sales thanking them for their support in growing your business or enabling supply during shortages or for any other good reason. They will remember and appreciate this.

- When you are negotiating for a price that the distributor is having trouble meeting, get the manufacturer involved. They can work with the distributor, particularly if they know you, to arrange special transfer pricing. It never hurts to try.

4. Control your designers

In 2016, I published a blog titled "8 Supply Chain Design Rules for Engineers". This blog is posted on SCMRoundtable.com, but a summary of the instructions for designers are:

A. Use your leverage for cost:

Do not award design wins until production level pricing is found to be acceptable and agreed upon by the operations team.

B. Benchmark:

Find out what the true production level market value of a component is before awarding the socket.

C. Multi-sourcing:

Don't create single points of failure in the supply chain by having only one manufacturer able to supply.

D. Thorough simulation:

Be sure to simulate designs to work under all operating conditions of voltage, temperature and manufacturing tolerance. Don't over tolerance components.

E. Design for portability:

Important but almost never discussed; design so that products can be moved from factory to factory, manufacturer to manufacturer or country to country with relative ease to avoid lock in.

F. Registration:

Don't get locked into a supply channel without your permission. Registration is a process that gives a particular distributor exclusive rights to sell their product to you for their role in securing the design socket for the manufacturer. No other distributor will be able to sell to you at a better or this same price. Minimal or no engineering support from a distributor can lead to a registration situation. The prices you get will most likely be fixed with little room for negotiation over the life of the product. Often, design organizations, not operations, agree to the price too early in the cycle based on design savings from integration and not from form, fit and functional performance benchmarking.

G. Select suppliers willing to share information:

Today, manufacturers are under increased scrutiny for compliance with social norms and legal requirements everywhere they do business. Assurance of this requires that you get information about your supply chain. You need suppliers who are willing to share information with you so that you can assure your shareholders, customers and other stakeholders that you comply.

H. Ensure operations is engaged in NPI before you award design sockets:
Operations should be doing things for you as an extension of your design team.

5. Create leverage

In addition to the 8 rules above here are a few more:

- Make sure you have alternate sources for the materials in your supply chain.
- If you are single sourced buyer, find an alternative and understand the cost of getting it qualified. In negotiations, let the vendor know your options if it makes sense for you to act on qualification. If you are the vendor, understand the difficulties and risks associated with changing supply.
- Be able to tell a compelling (and accurate) story about your company. Get your negotiation counterpart excited about doing business with you.
- Know opportunities to expand the relationship beyond the transaction level negotiation that you are working. For example, could your companies cooperate in penetrating a new market space or region?

6. Know your options

Make sure you know the importance to you of the company you are negotiating with. Understand why you need their products and understand the extent of options or alternatives you have for their use.

7. Don't be intimidated

Don't let the size, reputation, threats or whatever comes from your counterpart intimidate you. Some less favorable individuals may use tactics to throw you off. A comment like "where did you get that haircut?" is meant to get you unravelled and off your game. Don't be afraid to reschedule the negotiation if things get sour. Be rested. Don't use alcohol or drugs while negotiating.

8. Understand it's a business relationship first

Don't be afraid to state what you need and your position in bold and honest terms. Recognize that you are working on a contract that will be best if all aspects of what you are negotiating are made clear. You are not doing the other party a favour by awarding or accepting an order. Both parties should be getting enough value from

the transaction itself. Remember they are negotiating with you because they want something; It is not just you with a need.

9. **Be professional**

   The behaviour of you and your team needs to be friendly, respectful and professional. You want the competence of your team to show without arrogance or bravado. Think about your posture and response to maintain composure. Say “thank you”.

10. **Know your company’s potential**

    Be fully informed of your company’s plans and opportunities to help your counterpart’s company grow. Articulate this in a compelling and interesting way.

Conclusion

My hope for this paper is that both buyers and sellers of components gain insight into pricing and can apply some of the ideas and concepts outlined to improve their negotiation performance. A fair negotiation is best for all parties. Those buying component need these parts so they can build and sell their end products in the marketplace. Sellers need these OEM companies to include their devices in their products and create pull through for their components. An electronic component by itself is useless until it is in an application, so buyers and sellers are linked in a common quest.

In this paper, I have given examples taken from the perspectives of the buyer and seller. I want the professionals on both sides of a negotiation to do well. I don’t like the legal opinion that a good negotiation occurs when neither side is happy with the result. I want good, healthy business negotiations amongst respected partners.

Lytica is in the business of predictive analytics for electronic components for risk and cost. Our data has been used to aid in successful negotiations. Our benchmarking and predictions fill in many of the voids highlighted in this paper to allow you to save preparation time and deliver results.

I hope you find this document useful.

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ANATOMY OF A PRICE

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ABOUT LYTICA

We make electronic companies more competitive by being the most trusted source of electronic component market intelligence. Lytica brings visibility to supply chain risk and cost - *fast*, with the world's only comprehensive database of real customer pricing for electronic components. Lytica is trusted by the world's top OEMs and electronics manufacturers. We work with the best in the world - over 95% repeat customers. Are you paying a competitive price for your electronic components?

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