AUTODESK **UNIVERSITY** 2013

Introduction to Octopart™ : Find Parts Fast

Andres Morey – Octopart
Janine Yoong – Octopart

PL2566-R

Access to electronic component information is a key competitive advantage in the design and manufacturing process. In this class, a founder of Octopart, the leader in electronic part search, shares tips and tricks to search more effectively for component pricing, availability, technical specs, compliance status, and more. We dive into specific examples of how new search technology opens up access to data and improves workflow efficiency in a variety of use cases. We also present how-tos for using Octopart applications with Autodesk® PLM 360. Attendee participation is encouraged at this roundtable session.

Learning Objectives

At the end of this class, you will be able to:

- Access part information more quickly and effectively
- Explore new use cases where part search can improve workflow
- Describe new industry trends in search and big data
- Explain how you can use Octopart applications in Autodesk PLM 360

About the Speaker

Andres is co-founder at Octopart Inc. where he leads product design and development. Prior to Octopart, Andres worked on the IceCube Neutrino Observatory building electronic devices to calibrate the detector and measure ash layers in the ice at the South Pole.

Email: andres@octopart.com

Introduction

Historically, it's been extremely expensive and time consuming to access part data for use in design, sourcing and manufacturing. Information such as lifecycle status, compliance documents and technical specs have been locked inside expensive proprietary databases or siloed inside supplier websites. As a result, it's been difficult to do component comparisons across manufacturers or inventory checks across distributors. Engineering firms have been forced to spend a lot of time aggregating data themselves in order to avoid facing supply chain or design issues with the potential to halt an assembly line.

To fix this problem, Octopart has been aggregating component data from manufacturers and distributors and making it available on its website, Octopart.com as well as through the Octopart API for everyone in the component value chain to access easily. Using Octopart, you can do quick real-time inventory checks across all major distributors as well as access deep component data for use in design and manufacturing.

The goal of this class is to introduce you to Octopart and give you an overview of the type of data that is available via our system. Next, we'll demonstrate how you can import data from Octopart directly into PLM 360 using the Octopart App (available in the PLM 360 App Store). Finally, we'll review the direction the industry is headed so you can start thinking about how your business can take advantage of emerging trends in access to component data.

Our hope is that this class will take you one step closer to making your BOMs supply-chain aware!

What is Octopart?

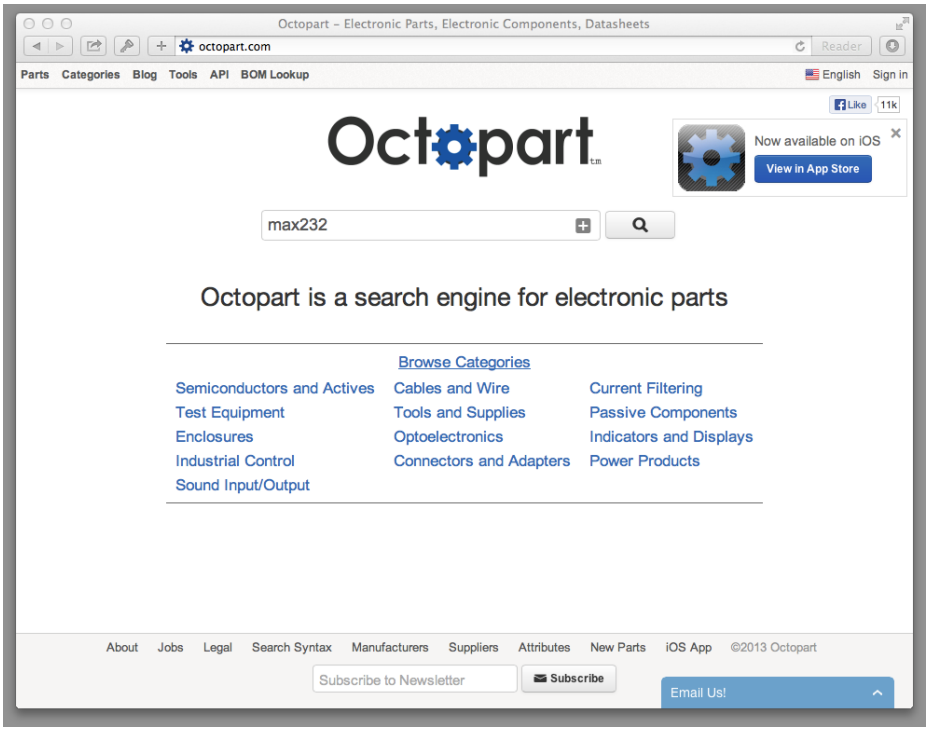
Octopart is a NYC-based startup that is leading the charge to open up access to electronic part data for design, sourcing and manufacturing. The company was founded in 2006 by three experimental physicists who found it extremely frustrating to find components for their designs and had a vision for a more effective way of searching for parts online.

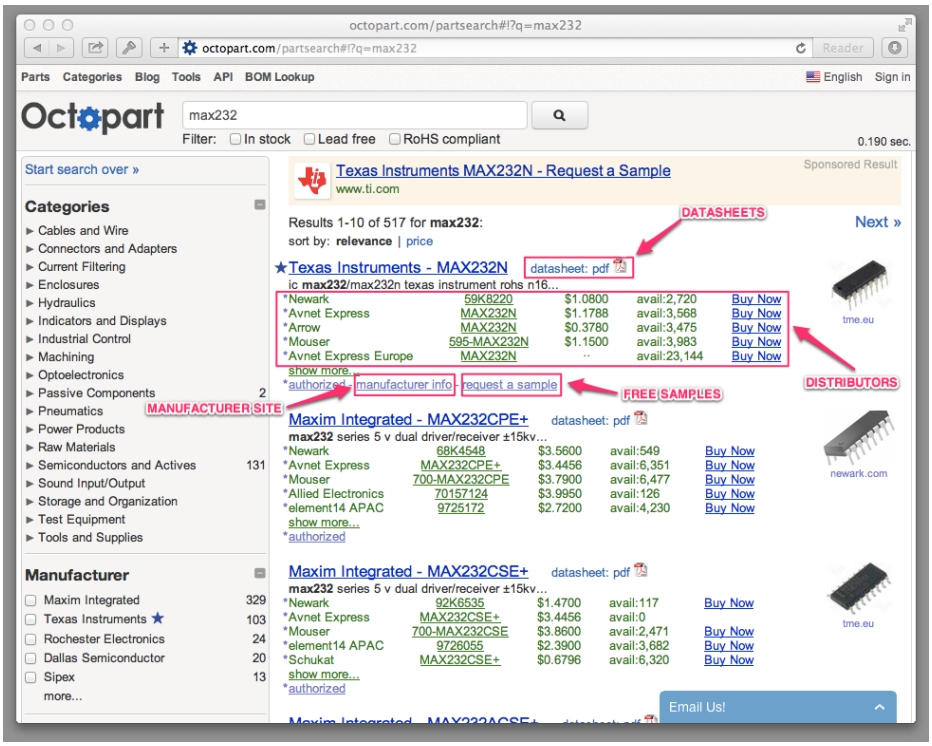
Octopart aggregates component data from manufacturers and distributors and makes it available via the company's website (Octopart.com) as well as through its Web Services API (the Octopart API). Currently, Octopart.com attracts more than 600,000 unique users per month, primarily design engineers, contract manufacturers, supply chain specialists and compliance specialists. The Octopart API is used by hundreds of OEMs and CMs that range in size from small design shops to multi-billion dollar engineering firms.

Octopart.com

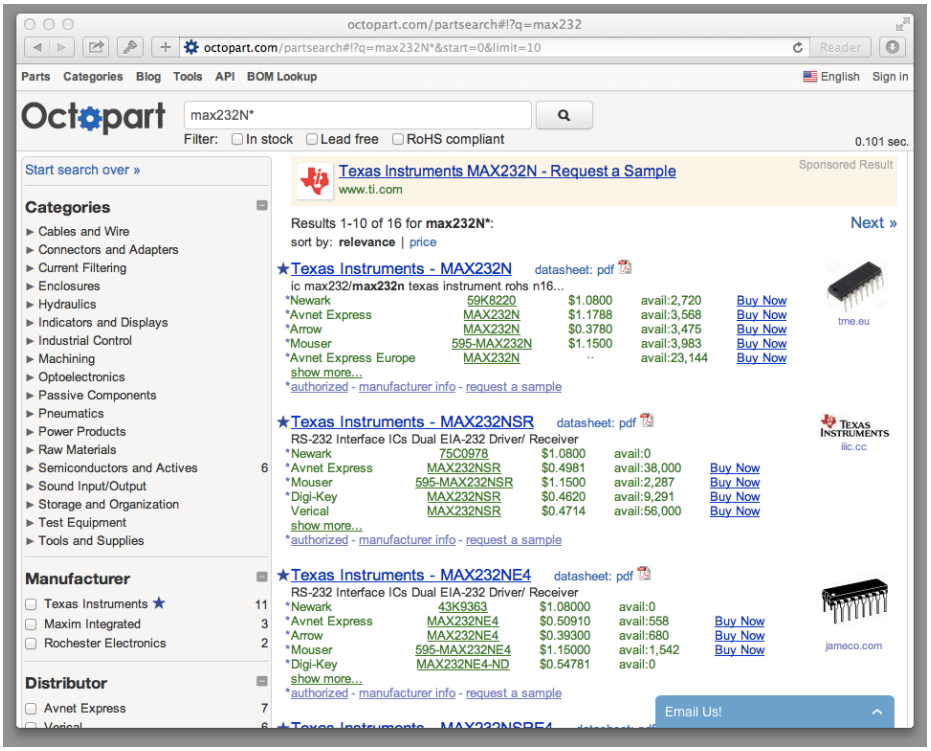
The easiest way to use Octopart is by visiting Octopart.com. On Octopart.com you can look up parts by MPN or SKU, access datasheets, check distributor inventories, order free samples, perform sophisticated parametric searches, browse categories and much more. The following is an overview of some of the most popular features on the website.

Search by part number (MPN or SKU)

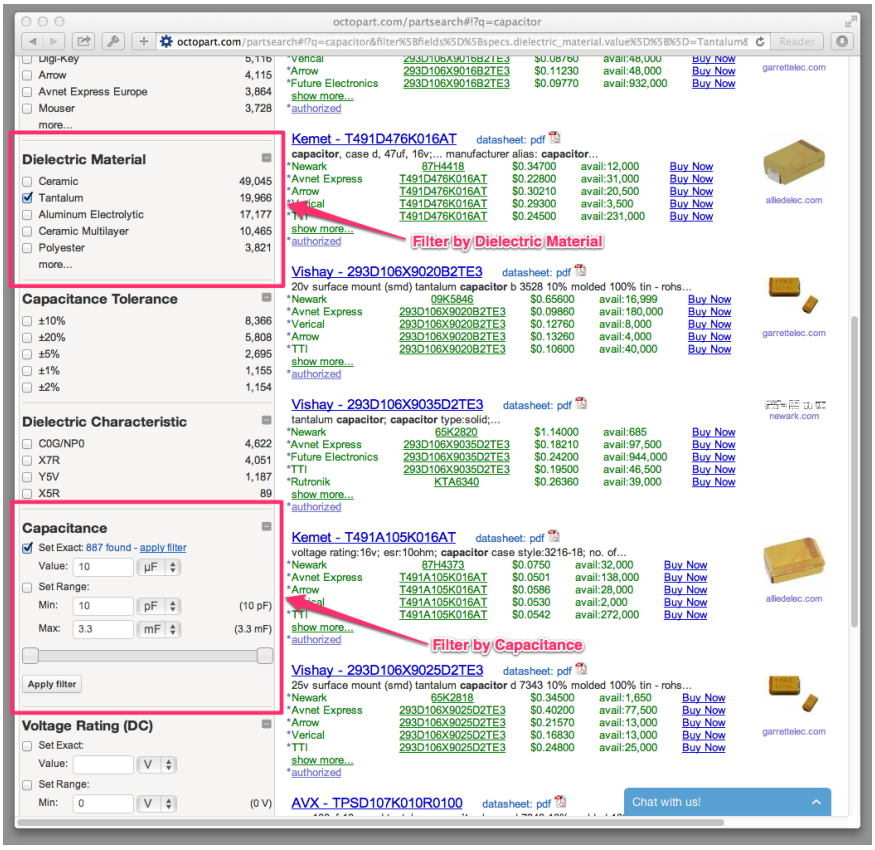


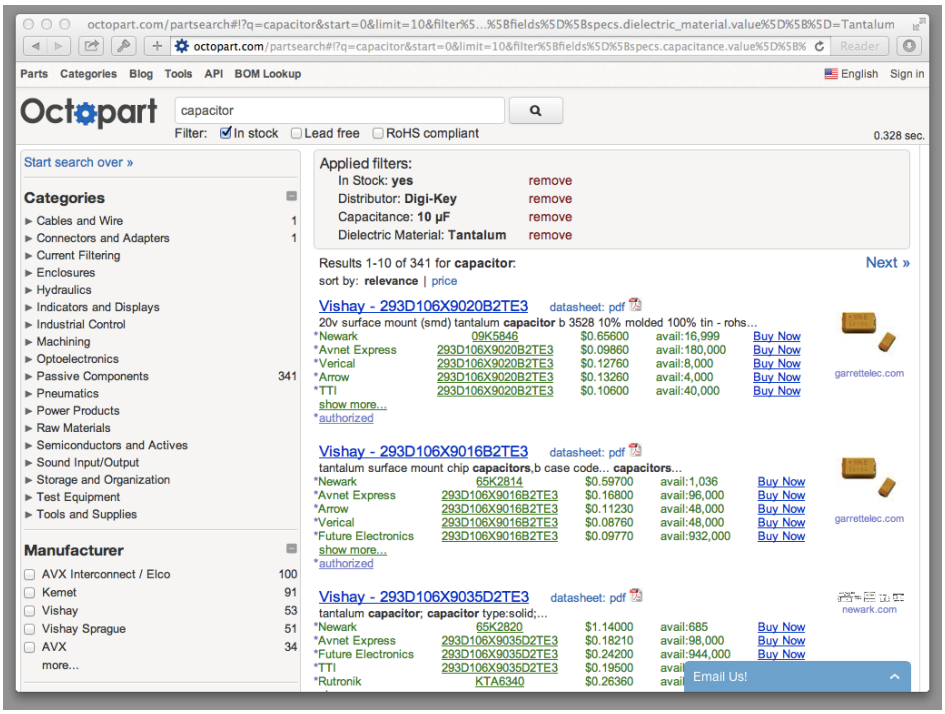


Part number wildcards

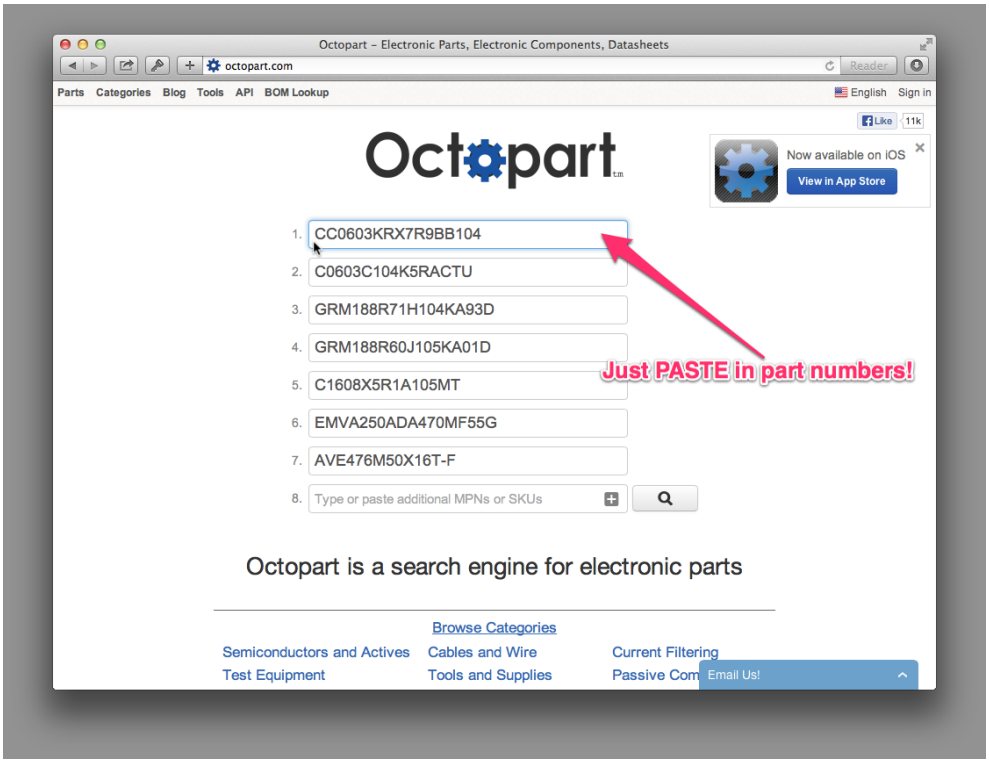


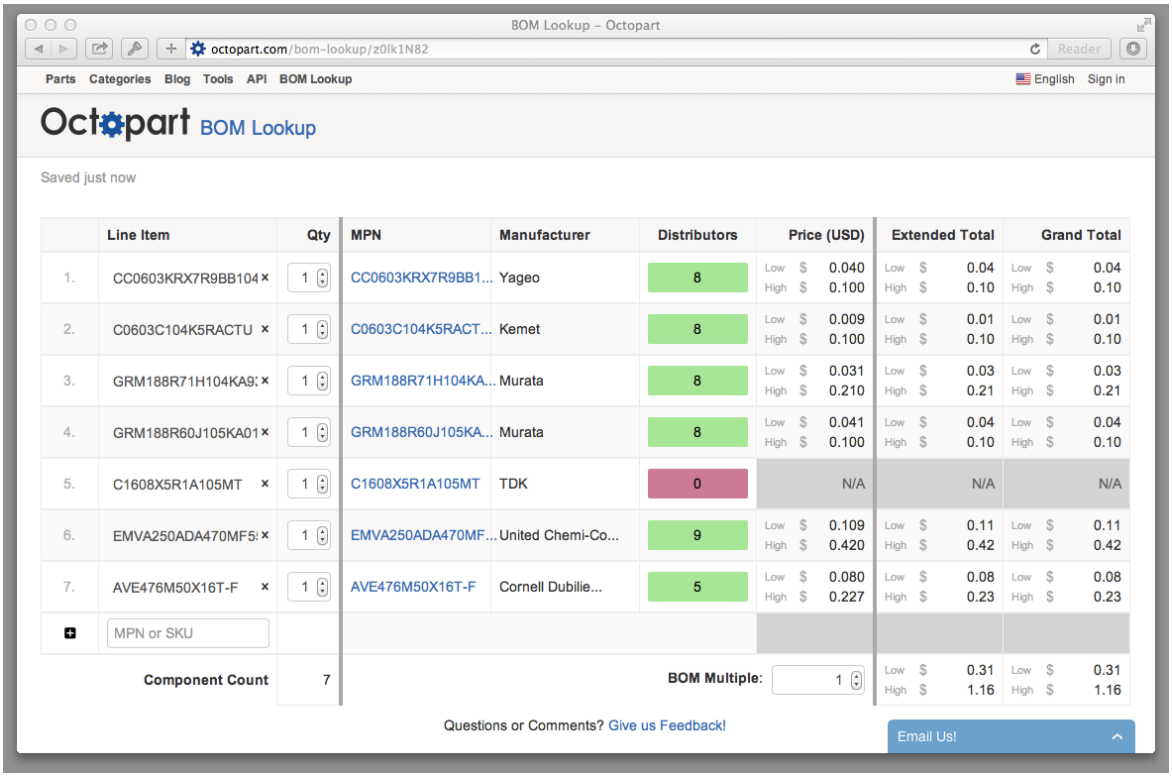
Parametric search





BOM Lookup


Octopart - Electronic Parts, Electronic Components, Datasheets
octopart.com
Parts Categories Blog Tools API BOM Lookup
English Sign in
Octopart
Now available on iOS
View in App Store
1. CC0603KRX7R9BB104
2. C0603C104K5RACTU
3. GRM188R71H104KA93D
4. GRM188R60J105KA01D
5. C1608X5R1A105MT
6. EMVA250ADA470MF55G
7. AVE476M50X16T-F
8. Type or paste additional MPNs or SKUs
Just PASTE in part numbers!
Octopart is a search engine for electronic parts
Browse Categories
Semiconductors and Actives
Cables and Wire
Test Equipment
Tools and Supplies
Email Us!


BOM Lookup - Octopart
octopart.com/bom-lookup/z0lk1N82
Parts Categories Blog Tools API BOM Lookup
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Octopart BOM Lookup
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2. C0603C104K5RACTU × 1 C0603C104K5RACT... Kemet 8 Low $ 0.009 High $ 0.100 Low $ 0.01 High $ 0.10 Low $ 0.01 High $ 0.10
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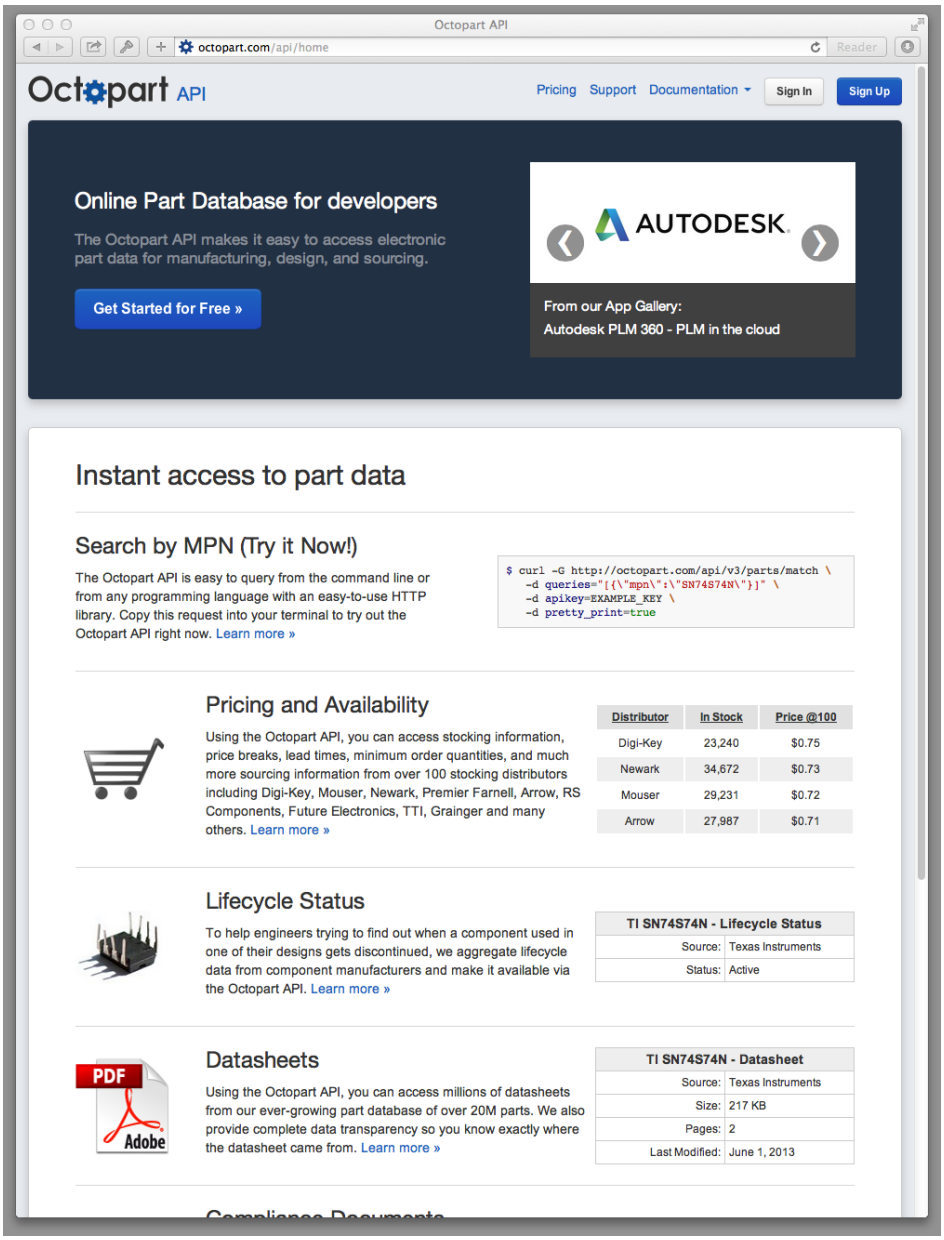
MPN or SKU
Component Count 7
BOM Multiple: 1
Low $ 0.31 High $ 1.16 Low $ 0.31 High $ 1.16
Questions or Comments? Give us Feedback!
Email Us!

Octopart API

All of the data available on Octopart.com is also available via the Octopart API (http://octopart.com/api). The Octopart API is an online part database for developers. Using the Octopart API, developers can access Octopart data programmatically via simple web service requests. Typical use cases for the Octopart API are BOM scrubbing scripts, ERP/MRP integrations, PLM integrations, EOL notifications. Octopart.com is powered by the Octopart API.

The Octopart API is well-documented, with many coding examples written in Python, Ruby and JavaScript. Engineering firms with programmers on staff have been able to quickly integrate the Octopart API in order to make their internal systems more efficient.



Octopart Data Overview

Octopart has built a system to aggregate component data from multiple sources and keep it up-to-date as it changes. Currently, Octopart's database consists of 32 million unique physical components representing over 3000 component manufacturers. Octopart also gets daily data feeds from 117 stocking distributors representing 55 million offers on 24 million components.

Data types

Currently Octopart tracks the following data types:

- Pricing and Availability
    - In stock quantity
    - Price breaks
    - International currencies
    - MOQ
    - Order multiples
    - Lead time
    - Packaging
- Datasheets
- Compliance Documents
    - RoHS statements
    - REACH statements
    - Materials sheets
    - Conflict mineral statements
- 3D Models
- Descriptions
- Technical Specs
- Lifecycle Status
- Images
- Categories
- Reference Designs

Data sources

Octopart's system is able to take in data from multiple sources and organize it around physical components. In order to provide complete data transparency, Octopart publishes the source of each data point in the API response.

The following is an overview of Octopart's data sources. For more details please visit the Octopart API data documentation site (http://octopart.com/api/data).

Direct Feeds

Currently, Octopart gets direct datafeeds from 117 stocking distributors including all major global distributors of electronic components:

- Arrow

- Avnet
- Digi-Key
- Mouser
- Newark
- TTI
- Future
- Allied Electronics
- RS Components
- Premier Farnell
- element14 APAC
- And 108 more…

In addition, Octopart receives datafeeds from the following major component manufacturers:

- Texas Instruments
- Analog Devices
- Honeywell
- Microchip
- Molex
- STMicroelectronics
- Allegro
- Avago
- Integrated Device Technology
- Intersil
- NXP Semiconductors
- Fairchild Semiconductor
- Ecliptek
- Renesas
- Stackpole Electronics
- IDT
- CUI
- TE Connectivity
- Pericom
- Keystone
- Fideltronik
- TGS
- Recom Power
- Simex
- Kingston
- NIC Components
- LEMO
- Silicon Laboratories
- Weidmuller
- Crescent Frequency Products
- Semikron

- Viking Tech
- MPI
- Advanced Power Electronics
- Omron
- Mean Well
- International Rectifier
- Belden
- Panasonic
- National Semiconductor
- Gecko Drive
- Greenliant
- Consonance
- Creative Systek
- Coilcraft
- Aimtec
- Naina Semiconductor
- Falco Electronics
- RF Solutions
- Cologne Chip

Partners

Some data comes from partners, e.g., TraceParts (http://www.traceparts.com/) contributes 3D models.

Web Crawling

Octopart also does extensive web crawling to download data from manufacturer websites.

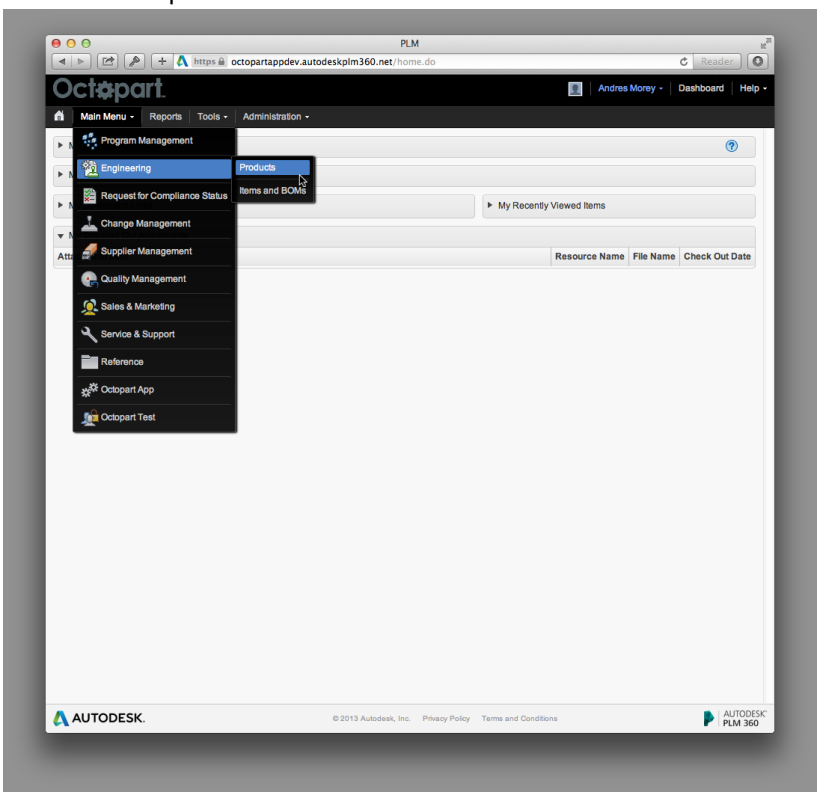
Crowd Sourcing

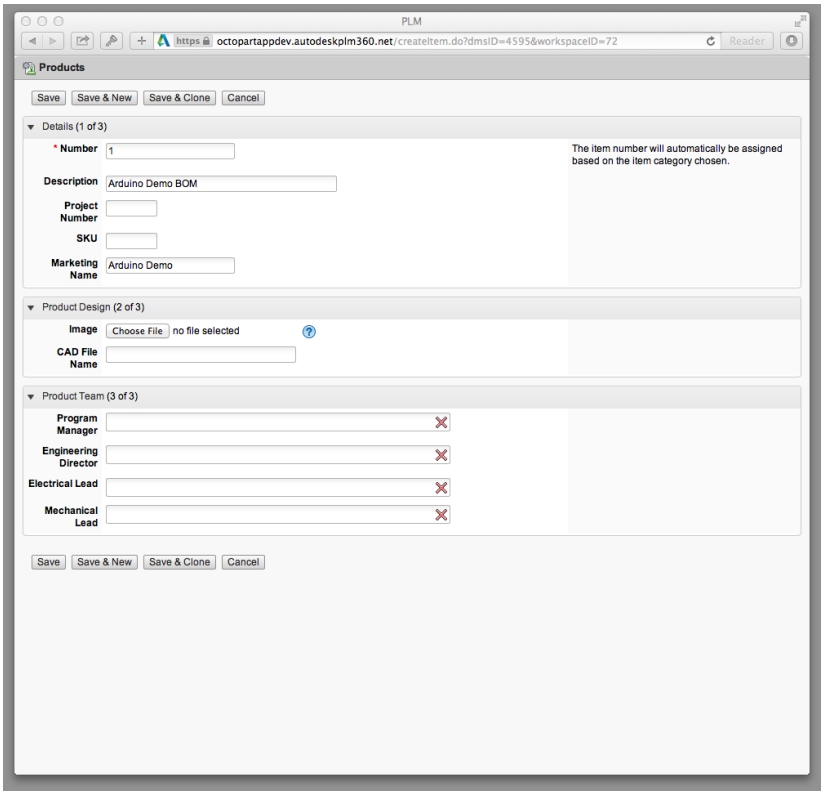
Another useful source of data is crowd sourcing from users. In addition to alerting us about data problems, many users have uploaded hard-to-find datasheets.

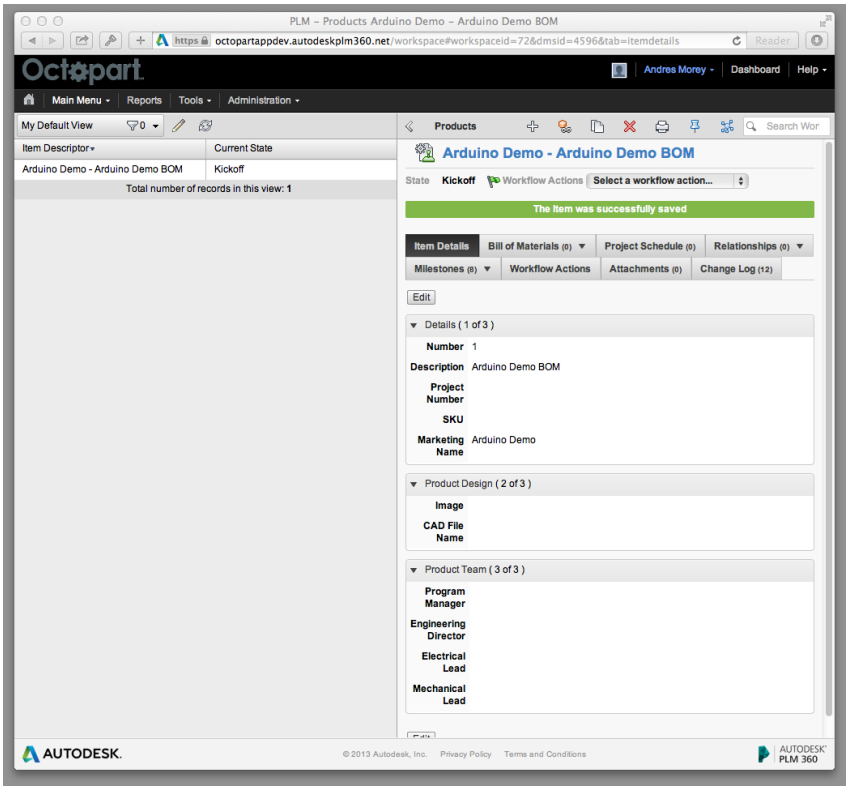
How to import Octopart data into PLM 360

Using the Octopart API you can integrate Octopart data into any environment. For some popular tools such as Autodesk's PLM 360, Octopart publishes official apps which make it easy to import Octopart data without writing custom code. The following is a step-by-step guide for how to import Octopart data into PLM 360 using the Octopart App in the PLM 360 App Store:

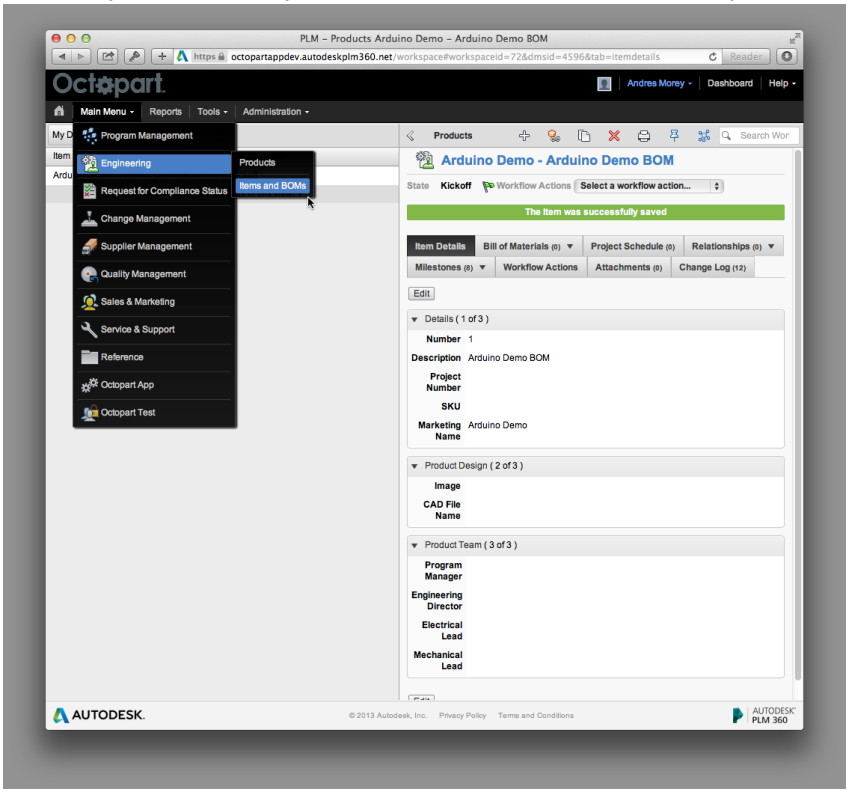
1) Create a new product

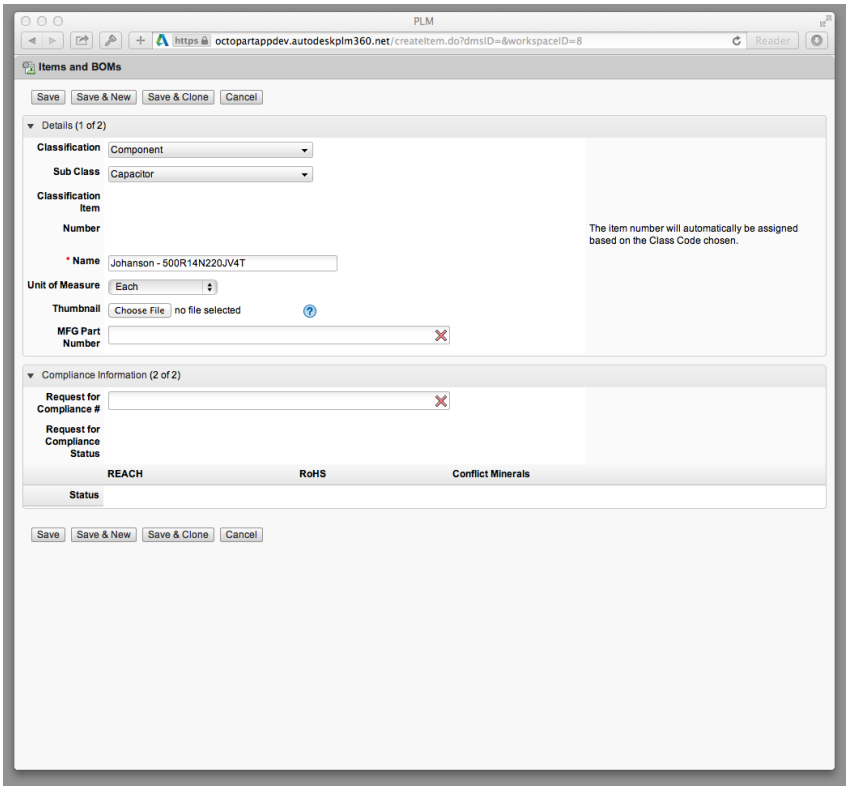






2) Add components to the product in the Items and BOMs workspace

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Reader
Items and BOMs
Save
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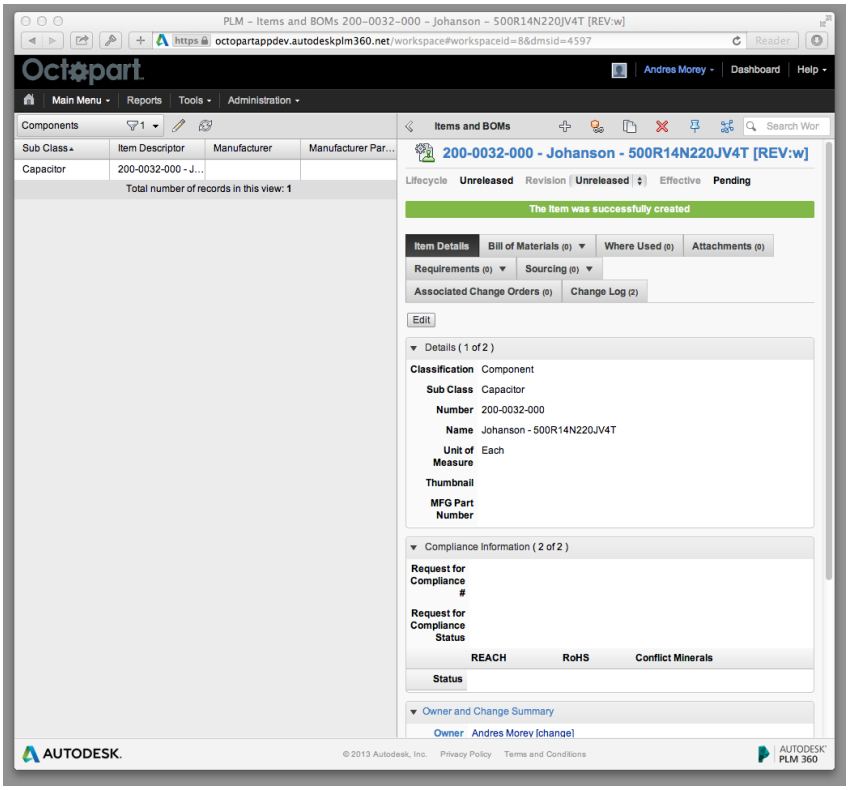
Save & Clone
Cancel
Details (1 of 2)
Classification
Component
Sub Class
Capacitor
Classification Item
Number
The item number will automatically be assigned based on the Class Code chosen.
* Name
Johanson - 500R14N220JV4T
Unit of Measure
Each
Thumbnail
Choose File
no file selected
MFG Part Number
Compliance Information (2 of 2)
Request for Compliance #
Request for Compliance Status
REACH
RoHS
Conflict Minerals
Status
Save
Save & New
Save & Clone
Cancel


PLM – Items and BOMs 200-0032-000 – Johanson – 500R14N220JV4T [REV:w]
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Help
Main Menu
Reports
Tools
Administration
Components
Sub Class
Item Descriptor
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Manufacturer Par...
Capacitor
200-0032-000 - J...
Total number of records in this view: 1
Items and BOMs
200-0032-000 - Johanson - 500R14N220JV4T [REV:w]
Lifecycle Unreleased
Revision Unreleased
Effective
Pending
The item was successfully created
Item Details
Bill of Materials (0)
Where Used (0)
Attachments (0)
Requirements (0)
Sourcing (0)
Associated Change Orders (0)
Change Log (2)
Edit
Details (1 of 2)
Classification Component
Sub Class Capacitor
Number 200-0032-000
Name Johanson - 500R14N220JV4T
Unit of Measure Each
Thumbnail
MFG Part Number
Compliance Information (2 of 2)
Request for Compliance #
Request for Compliance Status
REACH
RoHS
Conflict Minerals
Status
Owner and Change Summary
Owner Andres Morey [change]
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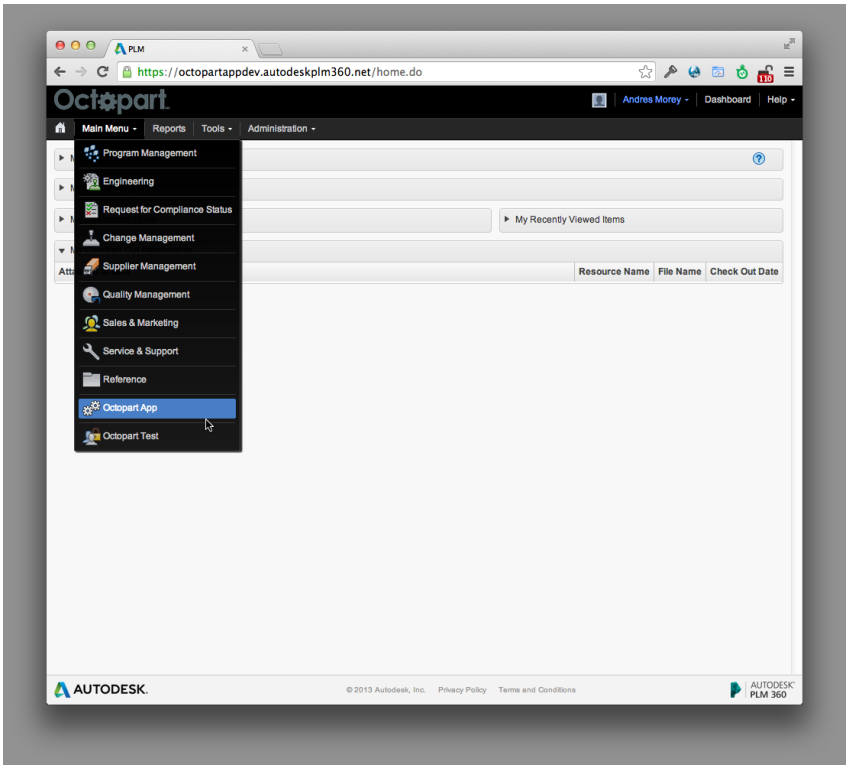
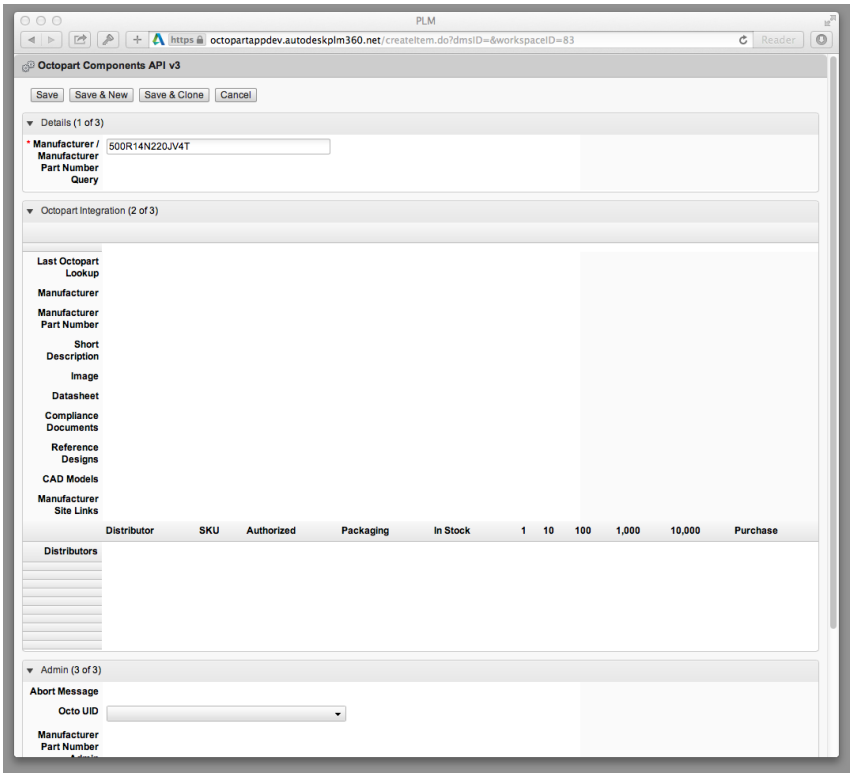
3) Create a new record in the Octopart App workspace using the item MPN as a query




PLM
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Reader
Octopart Components API v3
Save
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Save & Clone
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Details (1 of 3)
* Manufacturer / Manufacturer Part Number Query
500R14N220JV4T
Octopart Integration (2 of 3)
Last Octopart Lookup
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Datasheet
Compliance Documents
Reference Designs
CAD Models
Manufacturer Site Links
Distributor
SKU
Authorized
Packaging
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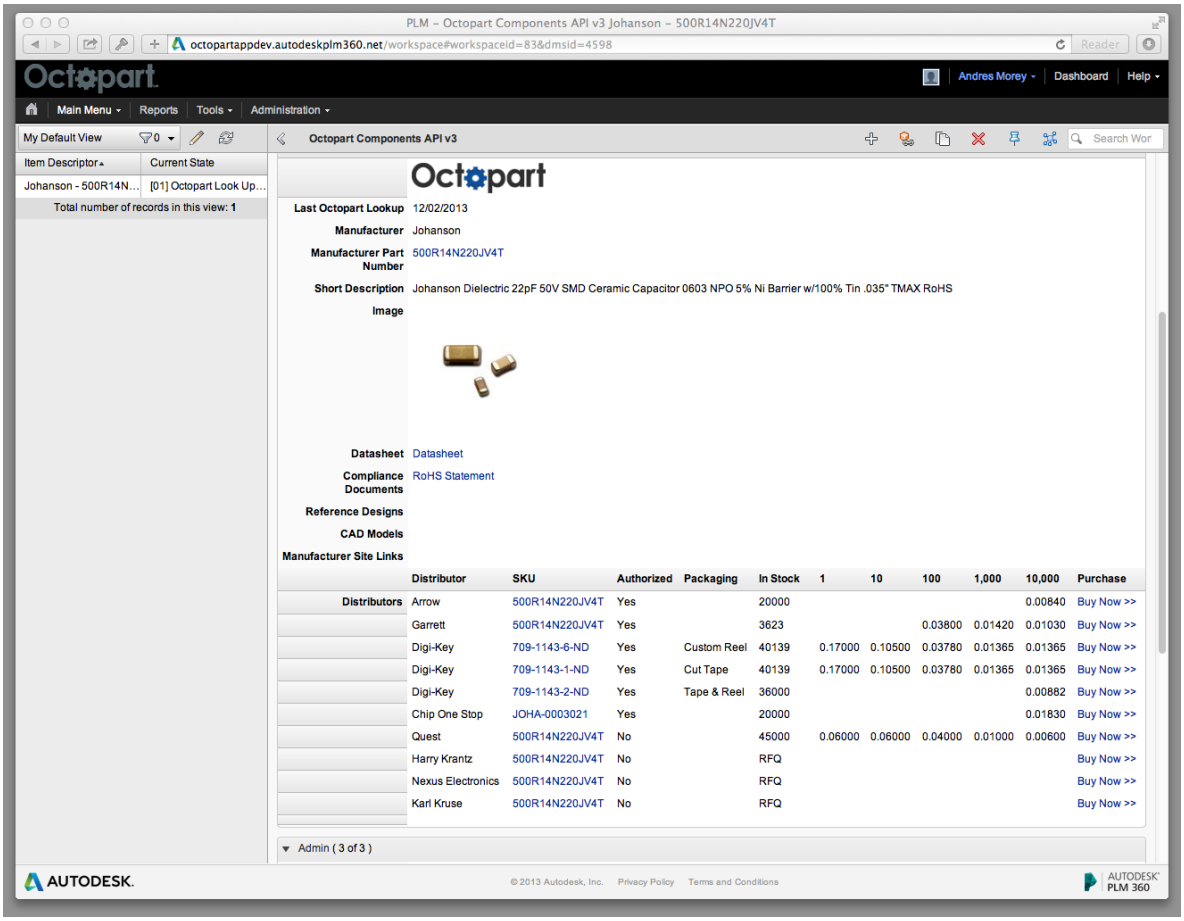
PLM – Octopart Components API v3 Johanson – 500R14N220JV4T
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Octopart
Andres Morey
Dashboard
Help
Main Menu
Reports
Tools
Administration
My Default View
Octopart Components API v3
Item Descriptor
Current State
Johanson - 500R14N...
[01] Octopart Look Up...
Total number of records in this view: 1
Octopart
Last Octopart Lookup 12/02/2013
Manufacturer Johanson
Manufacturer Part Number 500R14N220JV4T
Short Description Johanson Dielectric 22pF 50V SMD Ceramic Capacitor 0603 NPO 5% Ni Barrier w/100% Tin .035" TMAX RoHS
Image
Datasheet Datasheet
Compliance Documents RoHS Statement
Reference Designs
CAD Models
Manufacturer Site Links
Distributor SKU Authorized Packaging In Stock 1 10 100 1,000 10,000 Purchase
Distributors Arrow 500R14N220JV4T Yes 20000 0.00840 Buy Now >>
Garrett 500R14N220JV4T Yes 3623 0.03800 0.01420 0.01030 Buy Now >>
Digi-Key 709-1143-6-ND Yes Custom Reel 40139 0.17000 0.10500 0.03780 0.01365 0.01365 Buy Now >>
Digi-Key 709-1143-1-ND Yes Cut Tape 40139 0.17000 0.10500 0.03780 0.01365 0.01365 Buy Now >>
Digi-Key 709-1143-2-ND Yes Tape & Reel 36000 0.00882 Buy Now >>
Chip One Stop JOHA-0003021 Yes 20000 0.01830 Buy Now >>
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Harry Krantz 500R14N220JV4T No RFQ Buy Now >>
Nexus Electronics 500R14N220JV4T No RFQ Buy Now >>
Karl Kruse 500R14N220JV4T No RFQ Buy Now >>
Admin (3 of 3)
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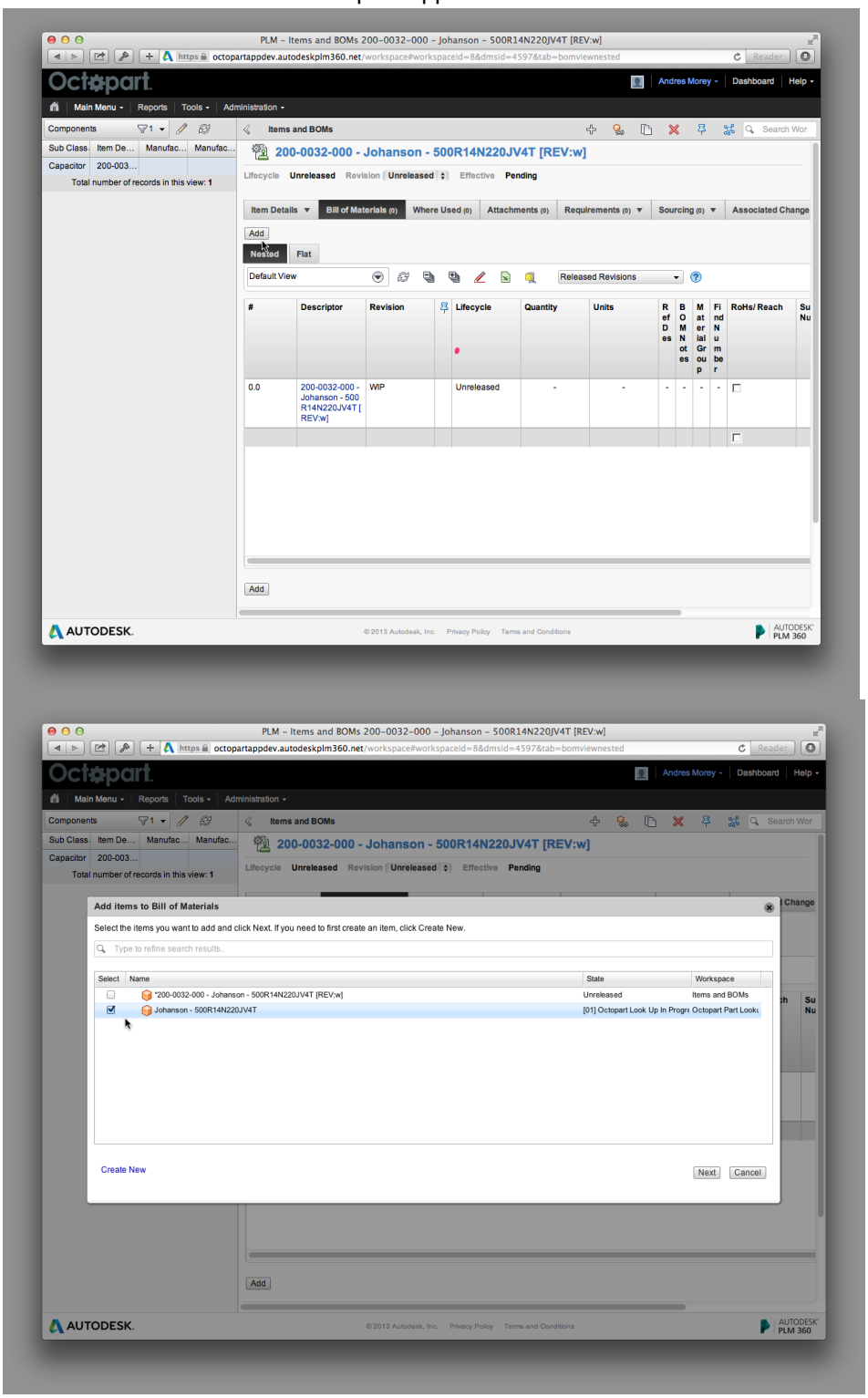
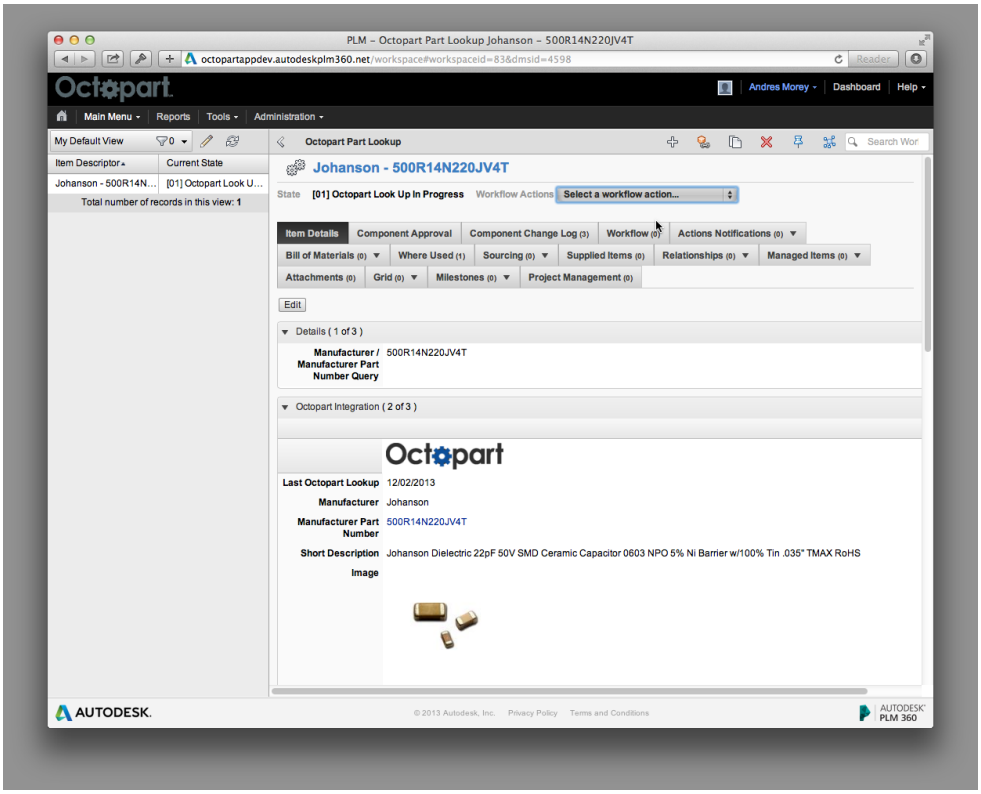
4) Create connection between Octopart App record and Item record



5) Use “Octopart Lookup” workflow action to keep Octopart App records up-to-date



Emerging trends in access to component data

Cloud: In parallel with more part data becoming available online, engineering firms are starting to adopt cloud tools to manage key workflows. While there continues to be debate around challenges in cloud computing, the ease and speed of access and collaboration makes a good case for managing part data in the cloud. As more electronic design automation (EDA), product lifecycle management (PLM), enterprise resource planning (ERP) tools move to the cloud, managing part data seamlessly within and across these tools becomes increasingly common.

Big data: More engineering firms are creating data-driven internal processes to be more competitive and to eliminate efficiencies. In response to higher demand for part data, component manufacturers and suppliers are exposing more information via their websites and other online sources. Part data is more easily accessible and affordable today, compared to when data used to be only available through paper catalogs or expensive proprietary database providers.

Conclusion

In this class, we have covered:

- The challenges related to accessing part data
- Octopart’s role and how we are addressing these challenges
- How to use Octopart and the Octopart app within PLM 360

- Overview of data coverage and data transparency in Octopart's database
- Emerging trends in access to part data

We hope you will apply what we have discussed in your design, sourcing and manufacturing processes, and be ahead of the curve as the industry heads toward open and realtime access to part data.