

Capacitors

Aluminum Electrolytic Capacitors
Ceramic Capacitors
Double Layer Capacitors
Film Capacitors
Tantalum Electrolytic Capacitors

Magnetics

Chokes
Ferrite Chip Beads
Inductors
Transformers

Resistive Products

Resistors
Thermistors
Varistors

Specialty Components

Circuit Protection
Communication / RF
Power Relays
USB Cables & Connectors



Company Profile

37
Years of Service
Est. 1982

NIC Components Corp.
1982 - NIC Components Corporation Established USA
1998 - NIC Components Europe Ltd. Established UK
1998 - NIC Components Asia Pte Ltd. Established

NIC Components Corp., in partnership with Nippon Industries Co. Ltd., has been manufacturing and designing passive components for over thirty years. By integrating design, raw materials and production expertise, NIC has established itself as a leader in passive component technology.

From a core business of Aluminum Electrolytic Capacitors, NIC has expanded its product offering to Tantalum Capacitors, Ceramic Capacitors, DC Film Capacitors, Thick and Thin Film Resistive Products and a growing line of Power Inductors, Ferrite Chip Beads, and RF Components. NIC maintains engineering offices globally to oversee our production facilities and work closely with the factory sites for quality assurance and technology dissemination. Warehouse, engineering and sales offices in North America, APAC and EMEA support customer design, logistics and service requirements.

NIC offers "Live Support" via our website to aid our customers in component selection and technical guidance. The NIC website offers one of the most comprehensive cross-reference databases in our industry. Technical data, including application notes, life test data and process guides offer engineers a one stop library for their passive component needs. Samples and sample kits are always available to qualified customers, the majority shipped from our extensive inventory.

The major advantage you will find when engaging with NIC is our people. NIC boasts one of the most experienced and highly trained sales teams in the world averaging more than 15 years of passive components experience. Our number one priority is customer support. From technical specifications to delivery information, from quoting large bill of materials to crossing our competitors' parts, NIC is capable of industry leading response times.

Please feel free to browse our websites. Contact your local distributor, sales representative or local NIC office listed on our websites, for quick personalized presentations.

Global Logistics supporting customers worldwide. Major OEMs and CEMs rely on NIC to manage their inventory requirements and we continue to expand our logistic services. NIC Warehousing Facilities



Nevada, USA	50,000 Sq. Ft.
Venlo, Netherlands	20,000 Sq. Ft.
Tokyo, Japan	7,500 Sq. Ft.
Singapore	20,000 Sq. Ft.

QUALITY is our number one commitment. NIC's expertise and diligence in selection and integration of quality fabs is world-renowned. Long-term supplier relationships (averaging over fifteen years) have been fostered by shared strategy and partnering management teams. Every step, from component design to raw material selection, manufacturing processing to final inspection is meticulously monitored.



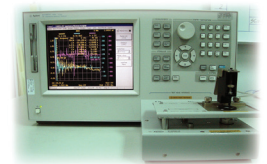
Automotive Grade Support

Looking for automotive grade products? NIC offers specific series IATF-16949 certified lines, AECQ-200 qualified and PPAP ready for various NIC Product Lines:

- ◇ Aluminum Electrolytic Capacitors
- ◇ Multilayer Ceramic Chip Capacitors
- ◇ Common Mode Chokes
- ◇ Ferrite Chip Beads
- ◇ Power Inductors
- ◇ Thick Film Chip Resistors
- ◇ Thin Film Chip Resistors

NIC Test Centers

Supporting Customers Worldwide:
Melville, NY, USA & Tokyo, Japan



Technology focused passive components.

NIC is not only a supplier of commodity components - NIC develops and supplies custom, specialty, and increased quality automotive grade products. NIC designs and manufactures components that meet the demands of today's emerging and cutting edge technology. We offer component solutions to build products with more features, in smaller and less expensive formats. From design to final production, NIC will be there every step of the way!

Passives By Design...

By focusing on the latest designs in the market today NIC has both the products & the tools to make your program easy from design to production.

- ◇ Interactive Circuit Designs
- ◇ QuickBUILDER Parametric Search & Specification Comparisons
- ◇ Reference designs with inventory dedicated DesignKITS
- ◇ Focus Products Dedicated QuickKIT Inventory

- ◇ NIC offers electronic commerce and inventory management solutions customized to fit your needs.
- ◇ To support our customer's immediate and scheduled component demands, NIC maintains a running inventory of approximately 3 Billion components.
- ◇ We offer fully integrated solutions for VMI / In House Stores / Consignment / Forecast with Release & KanBan Inventory Management Programs

NICcomp.com One-Stop Online Resource

What you Need...When you Need It

With over 300 series of products to choose from, NICcomp.com makes sure you get everything you need.

All product pages center around the key component details to help you find the series you are looking for:

- ◇ Category, type and series dedicated pages for different levels of component information
- ◇ Filtered product lists to help component selection
- ◇ Co-Sells, alternatives & upgrades for best selections
- ◇ Technical & environmental information including packaging, compliance certifications, material declarations and soldering & handling guides

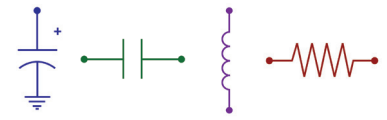
Get the best results with Focus Colors

NIC has created a 4-color system which spans across all NIC web and promotional tools to make sure you are selecting the best product for your designs.

- Focus Product - Best choice for new designs!
- Preferred Product
- Active Product
- Non-Standard Product / Not For New Designs

Keep in Touch...We Always Here to Help...

- ◇ Resource center for all technical support
- ◇ Global sales and technical contact forms
- ◇ Get e-mail & RSS updates with dedicated eNews lists for product announcements



Down to the Part Number Level with QuickBUILDER

Have a specific item in mind? With thousands of individual parts, NIC goes beyond product types and series and lets you search and design with specific parameters!

The NIC QuickBUILDER is NIC's premier search engine giving you instant results by parameter or text searches!

Not sure what family or part yet? QuickBUILDER searches all components in a technology to make sure you see what the best selection may be with side-by-side comparisons.

Finish your search with individual specifications, distributor stock checks and order samples from NIC's dedicated FREE stock available today..



Key QuickBUILDER Features:

- ◇ Parametric searches with price & preference sorting
- ◇ Search by NIC part number or competitor
- ◇ Download and share individual specifications
- ◇ Compare results side-by-side
- ◇ View distributor stock
- ◇ Save parts to QuickBUILDER+

Tools with your design in mind

NIC is always in development of the latest design tools to help get you the right parts or information as quick as possible.

- ◇ Reference design full BoM support with DesignKITS
- ◇ Interactive circuit designer with OrCAD export support
- ◇ Interactive application guides
- ◇ 3D rendering and step files by part number
- ◇ Spice models and s-parameter simulation data
- ◇ Global Environmental Compliance Guide



View NIC Franchised Distributors & Sales Reps.

NIC sales, support and logistics efforts are augmented by a global network of franchised distributors. NIC franchised distribution network includes **three major global distributors**, as well as more than **forty regional distributors** throughout The Americas, Europe and Asia

- ◇ View all franchised distributors and reps by region
- ◇ Dedicated QuickBUILDER and QuickKIT pages for dedicated reference design opportunities
- ◇ View inventory from franchised distributor channels by part number search or individual specifications

The screenshot shows the NIC Components Corp. website interface. At the top, there is a search bar for 'NIC Specs & Inventory' and navigation links for 'QuickKIT', 'Contact', and 'Live Help'. Below the search bar is a banner for 'NIC QuickBUILDER' with the tagline 'Putting Focus on The Products You Need... With The Quickest Search For Resistors in the Market Today'. To the right of the banner is a sidebar with 'New Product Series' and 'NIC Focus Series' sections. Below the banner is a 'Performance Passives By Design' section with three columns: 'Who is NIC Components?' (37 Years of Service), 'Sales Channels' (global network), and 'Product Resource Center' (comprehensive resource library). At the bottom, there is a grid of 'Component Categories' including Capacitors, Circuit Protection, Communication, Lighting, Magnetics, and Resistive.

Aluminum, Tantalum & Double Layer Capacitors

Visit NICcomp.com for our full series listing:

Aluminum Electrolytic Capacitors

<https://www.niccomp.com/products/aluminum>

Tantalum Capacitors

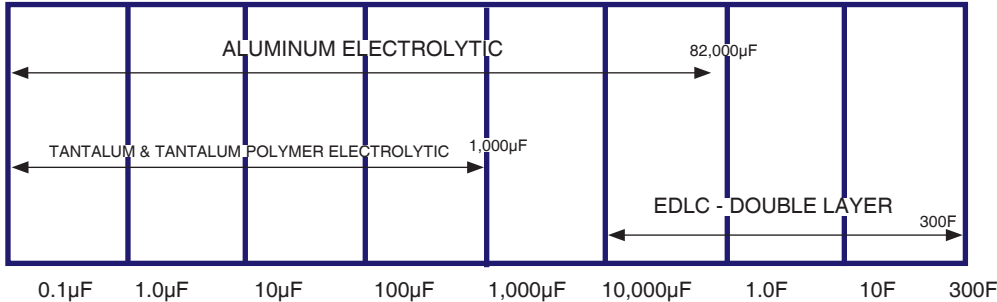
<https://www.niccomp.com/products/tantalum>

Double Layer Capacitors

<https://www.niccomp.com/products/edlc>



Capacitance Range By Product Type



Product Capacitance Codes

Value	pF	uF	F
0.1uF	104	R10	-
0.12uF	124	R12	-
0.15uF	154	R15	-
0.18uF	184	R18	-
0.22uF	224	R22	-
0.27uF	274	R27	-
0.33uF	334	R33	-
0.39uF	394	R39	-
0.47uF	474	R47	-
0.56uF	564	R56	-
0.68uF	684	R68	-
0.82uF	824	R82	-
1.0uF	105	1R0	-
1.2uF	125	1R2	-
1.5uF	155	1R5	-
1.8uF	185	1R8	-
2.2uF	225	2R2	-
2.7uF	275	2R7	-
3.3uF	335	3R3	-
3.9uF	395	3R9	-
4.7uF	475	4R7	-
5.6uF	565	5R6	-
6.8uF	685	6R8	-
8.2uF	825	8R2	-
10uF	106	100	-
12uF	126	120	-
15uF	156	150	-
18uF	186	180	-
22uF	226	220	-
27uF	276	270	-
33uF	336	330	-
39uF	396	390	-
47uF	476	470	-
56uF	566	560	-
68uF	686	680	-
82uF	826	820	-
100uF	107	101	-
1,000uF	-	102	-
.01F	-	103	103
0.1F	-	-	104
1F	-	-	105
10F	-	-	106
22F	-	-	226
30F	-	-	306
50F	-	-	506
100F	-	-	107
300F	-	-	307

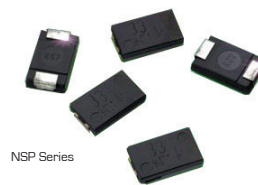
Endurance Performance (hours) vs. Operating Temperature

Temp	NACE	NACV	NAZT	NATT	NAZV	NSPE-Y	NSPE-J
+150°C	-	-	-	-	-	-	1,000
+135°C	-	-	-	-	-	2,000	2,828
+125°C	-	-	-	2,000	-	4,000	5,657
+115°C	-	-	-	-	-	8,000	11,314
+105°C	-	2,000	5,000	8,000	10,000	16,000	22,627
+95°C	-	4,000	10,000	16,000	20,000	32,000	452,55
+85°C	2,000	8,000	20,000	32,000	40,000	64,000	90,510
+75°C	4,000	16,000	40,000	64,000	80,000	128,000	>15 year
+65°C	8,000	32,000	80,000	128,000	> 15yrs	> 15yrs	>15 year

[1 Year = 8,760 Hours]

Search with QuickBUILDER

- ◇ Search NIC's entire standard library
- ◇ Compare up to 5 results Side-By-Side
- ◇ Sort by Price & Series Focus
- ◇ Lifecycle, Upgrades, and Application Focus



Visit NICcomp.com/QB-Capacitors

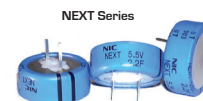
Automotive Grade Components

Looking for automotive grade products? NIC offers specific series controlled to IATF-16949 certified lines. For more info visit NICcomp.com/auto



Capacitance Values

1 Micro Farad (µF) = 1x10⁻⁶Farad
 1 Nano Farad (nF) = 1x10⁻⁹Farad
 1 Pico Farad (pF) = 1x10⁻¹²Farad



SMT General Purpose, Low ESR & Polymer Aluminum Capacitors

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)
NACE	General Purpose Lower Cost 85°C Temperature Rating	Standard Performance	1.0uF ~ 6,800uF	4 ~ 100V	1,330mA	2,000Hrs
NASE		Higher Reflow Rating	1.0uF ~ 1,000uF	6.3 ~ 50V	700mA	2,000Hrs
NACEN		Bi-Polar	1.0uF ~ 47uF	6.3 ~ 50V	57mA	2,000Hrs
NACEW	General Purpose Wide Temperature 105°C Temperature Rating	Standard Performance	1.0uF ~ 12,000uF	6.3 ~ 100V	1,350mA	2,000Hrs
NACC		Long Life	1.0uF ~ 1,000uF	6.3 ~ 50V	340mA	5,000Hrs
NACNW		Bi-Polar	1.0uF ~ 47uF	6.3 ~ 63V	40mA	1,000Hrs
NACV		High Voltage	2.2uF ~ 82uF	160 ~ 400V	235mA	2,000Hrs
NACVF		Long Life, High Voltage	2.2uF ~ 100uF	160 ~ 450V	1,060mA	5,000Hrs
NAWU			1.0uF ~ 220uF	6.3 ~ 400V	340mA	5,000Hrs
NATT	125°C Temperature Rating	Standard Performance	2.2uF ~ 4,700uF	6.3 ~ 100V	900mA	2,000Hrs
NATU		Long Life	100uF ~ 330uF	25 ~ 35V	500mA	4,000Hrs

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)
NACX	Low ESR & Z 105°C Temperature Rating	Standard Performance	1.0uF ~ 150uF	6.3 ~ 63V	155mA	1,000Hrs
NACY		Decreased ESR & Z	2.2uF ~ 6,800uF	6.3 ~ 100V	1,800mA	2,000Hrs
NACZ		Higher Reflow Rating	4.7uF ~ 6,800uF	6.3 ~ 50V	1,250mA	2,000Hrs
NACZF		Large Can Type	47uF ~ 6,800uF	6.3 ~ 100V	2,490mA	5,000Hrs
NACKA	Higher Performance - Lower ESR & Z Longer Life Ratings 105°C Temperature Rating	Extended Lifetime	47uF ~ 6,800uF	6.3 ~ 100V	2,060mA	5,000Hrs
NAZK		Higher Reflow Rating	4.7uF ~ 1,000uF	6.3 ~ 35V	850mA	2,000Hrs
NAZH		Reduced Size	10uF ~ 2,200uF	6.3 ~ 50V	1,190mA	2,000Hrs
NAZT		Higher Reflow Rating	4.7uF ~ 12,000uF	6.3 ~ 100V	2,260mA	5,000Hrs
NAZJ		Ultra-Low ESR & Z	10uF ~ 1,800uF	6.3 ~ 50V	1,190mA	2,000Hrs
NATK	125°C Temperature Rating	Standard Performance	10uF ~ 3,900uF	16 ~ 50V	2,200mA	5,000Hrs
NAYT	135°C Temperature Rating	Standard Performance	22uF ~ 1,000uF	16 ~ 50V	750mA	2,000Hrs
NAUJ	150°C Temperature Rating	Standard Performance	100uF ~ 470uF	25 ~ 35V	700mA	1,000Hrs

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)
NSP	Solid Polymer Construction Ultra-Low ESR, Highest RCR	Standard Performance	68uF ~ 560uF	2 ~ 6.3V	10,200mA	2,000Hrs
NSPL		3-Terminal Low ESL	68uF ~ 560uF	2 ~ 6.3V	10,200mA	2,000Hrs
NSPVM		V-Chip, High CV	10uF ~ 1,200uF	2.5 ~ 16V	4,450mA	2,000Hrs
NSPE-S	Hybrid V-Chip Construction Lower ESR - Higher RCR Extended Temperatures	Low ESR Performance	10uF ~ 1,000uF	6.3 ~ 16V	3,890mA	5,000Hrs
NSPE-A		High Voltage, Long Life	10uF ~ 330uF	25 ~ 80V	2,500mA	10,000Hrs
NSPE-HZ			18uF ~ 560uF	16 ~ 40V	4,340mA	5,000Hrs
NSPE-H			6.8uF ~ 560uF	16 ~ 125V	3,000mA	10,000Hrs
NSPE-HF			10uF ~ 470uF	25 ~ 80V	2,800mA	10,000Hrs
NSPE-TC		Lower ESR 125°C Temperature, Long Life	180uF ~ 560uF	25 ~ 35V	3,000mA	4,000Hrs
NSPE-TF			10uF ~ 470uF	25 ~ 100V	2,260mA	4,000Hrs
NSPE-TJ			150uF ~ 470uF	25 ~ 35V	3,800mA	4,000Hrs
NSPE-TZ			18uF ~ 560uF	16 ~ 40V	3,030mA	3,000Hrs
NSPE-Y		135°C Temperature Rating	10uF ~ 330uF	25 ~ 63V	1,390mA	2,000Hrs
NSPE-J	150°C Temperature Rating	100uF ~ 330uF	25 ~ 35V	970mA	1,000Hrs	

Radial LDD Aluminum Electrolytic Capacitors

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)	
NRSS	General Purpose - Lower Cost 85°C Temperature Rating	Standard Performance	2.2uF ~ 15,000uF	6.3 ~ 100V	2,700mA	2,000Hrs	
NLE		Low Leakage	1.0uF ~ 100uF	6.3 ~ 50V	95mA	1,000Hrs	
NNR		Bi-Polar	1.0uF ~ 1,000uF	10 ~ 100V	740mA	2,000Hrs	
NRE-SN		Bi-Polar, Low Profile	1.0uF ~ 47uF	6.3 ~ 50V	68mA	1,000Hrs	
NRE-H		High Voltage	0.47uF ~ 330uF	160 ~ 450V	800mA	2,000Hrs	
NRWA	General Purpose Wide Temperature 105°C Temperature Rating	Standard Performance	1.0uF ~ 10,000uF	6.3 ~ 100V	1,770mA	2,000Hrs	
NRWS		Standard Performance	2.2uF ~ 15,000uF	6.3 ~ 100V	2,400mA	2,000Hrs	
NRE-SW		Low Profile	1.0uF ~ 330uF	6.3 ~ 50V	120mA	1,000Hrs	
NRWP		Reduced Size	0.47uF ~ 33,000uF	6.3 ~ 450V	2,350mA	2,000Hrs	
NRE-HW		High Voltage	1.0uF ~ 330uF	160 ~ 450V	560mA	2,000Hrs	
NRB-KQ			12uF ~ 220uF	400 ~ 450V	1,220mA	2,000Hrs	
NRB-XZ		High Voltage , Reduced Size High Ripple Current, Long Life	10uF ~ 820uF	160 ~ 450V	4,460mA	12,000Hrs	
NRGB		Lighting Ballast Applications	1.0uF ~ 330uF	10 ~ 100V	330mA	10,000Hrs	
NRB-XS		Lighting Ballast Applications	1.0uF ~ 220uF	160 ~ 500V	2,370mA	12,000Hrs	
NRB-XW		Lighting Ballast Applications	12uF ~ 1,800uF	35 ~ 450V	2,230mA	10,000Hrs	
NRB-XL		Lighting Ballast Applications	1.0uF ~ 68uF	160 ~ 450V	1,300mA	20,000Hrs	
NRZX		Extended Temperature Rating	125°C Temperature Rated	22uF ~ 2,200uF	10 ~ 35V	1,900mA	4,000Hrs
NRE-WY			130°C Temperature Rated	1.0uF ~ 4,700uF	10 ~ 400V	2,800mA	4,000Hrs
NRE-WX			150°C Temperature Rated	47uF ~ 1,000uF	10 ~ 63V	750mA	1,000Hrs

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)
NRSY	Low ESR & Z 105°C Temperature Rating	Standard Performance	2.2uF ~ 15,000uF	6.3 ~ 50V	2,200mA	3,000Hrs
NRSZ		Long Life	4.7uF ~ 12,000uF	6.3 ~ 100V	2,800mA	10,000Hrs
NRSG		Expanded Range	5.6uF ~ 6,800uF	6.3 ~ 100V	3,460mA	5,000Hrs
NRZJ	Higher Performance Lower ESR & Z Longer Life Ratings 105°C Temperature Rating	Long Life	8.2uF ~ 8,200uF	6.3 ~ 100V	5,000mA	10,000Hrs
NRSH		Long Life	8.2uF ~ 8,200uF	6.3 ~ 100V	3,670mA	10,000Hrs
NRE-HL		Expanded Range, Long Life	6.8uF ~ 18,000uF	6.3 ~ 100V	4,280mA	10,000Hrs
NRE-JL		Expanded Range, Long Life	1.0uF ~ 15,000uF	6.3 ~ 100V	3,610mA	10,000Hrs
NSPRS	Hybrid Electrolyte Lower ESR - Higher RCR Extended Temperatures	Standard Performance	47uF ~ 1,000uF	6.3 ~ 16V	3,890mA	5,000Hrs
NSPRH		High Voltage, Long Life	10uF ~ 560uF	16 ~ 100V	3,000mA	10,000Hrs
NSPRT		125°C Temperature Rating	10uF ~ 560uF	16 ~ 100V	2,320mA	3,000Hrs
NSPRY		135°C Temperature Rating	10uF ~ 330uF	25 ~ 63V	1,390mA	2,000Hrs

Aluminum, Tantalum & Double Layer Capacitors

Series	Type	Description	Capacitance Range	Voltage Range	Max RCR (Up to)	Load Life (Up to)
NRLC	General Purpose 85°C Temperature Rated	Commercial Grade	68uF ~ 2,200uF	200 ~ 450V	4.78A	3,000Hrs
NRLF		Low Profile	33uF ~ 15,000uF	16 ~ 450V	3.68A	2,000Hrs
NRLM		Standard Performance	56uF ~ 68,000uF	16 ~ 450V	10.41A	2,000Hrs
NRLR		Long Life	56uF ~ 82,000uF	10 ~ 450V	10.51A	3,000Hrs
NSTL		Screw Terminal	1,200uF ~ 18,000uF	350 ~ 500V	56.14A	5,000Hrs
NRLCW	Extended Temperature Ranges 105°C Temperature Rated	Standard Performance	56uF ~ 680uF	400, 450V	2.15A	3,000Hrs
NRLFW		Low Profile	33uF ~ 10,000uF	16 ~ 400V	2.76A	2,000Hrs
NRLMW		Standard Performance	56uF ~ 68,000uF	10 ~ 450V	6.9A	2,000Hrs
NRLRW		Long Life	47uF ~ 68,000uF	10 ~ 450V	7.36A	3,000Hrs
NRLUW			100uF ~ 2,200uF	50 ~ 450V	4.27A	5,000Hrs
NRLLW			120uF ~ 560uF	400 ~ 450V	2.45A	10,000Hrs
NRLQW		High Voltage	56uF ~ 1,200uF	400 ~ 500V	3.22A	2,000Hrs
NRLPW			39uF ~ 15,000uF	50 ~ 500V	5.48A	3,000Hrs
NSTLW		Screw Terminal	1,000uF ~ 10,000uF	350 ~ 450V	28.56A	5,000Hrs

Series	Type	Description	Case Sizes	Capacitance Range	Voltage Range	Min. ESR	Max RCR
NTC-T	SMT Molded Case Tantalum	Standard Performance	P, A, B, C, V, D, E	0.1uF ~ 680uF	6.3 ~ 50V	0.3Ω	707mA
NTC-L		Low ESR	B, C, D	10uF ~ 470uF	6.3 ~ 35V	0.1Ω	1,100mA
NTP	SMT Polymer Cathode Tantalum Low ESR, High Ripple Current Ratings -55°C ~ 105°C Operating Range	Extended Ranges	J, P2, P, A2, A, B2, B, C, V, D	3.3uF ~ 1,000uF	2.5 ~ 25V	6.0mΩ	5,300mA
NTPF		Ultra Low ESR	D3, D9	150uF ~ 680uF	4.0 ~ 10V	9.0mΩ	4,600mA
NTPG		Standard Performance	B1, B3	33uF ~ 220uF	2.5 ~ 12.5V	30mΩ	1,400mA
NTPH		High Voltage	B1, B2, D1, D3, D5, D6	2.7uF ~ 150uF	16 ~ 35V	40mΩ	1,800mA
NTPS		High Capacitance	B2, D1, D2, D3, D9	2.2uF ~ 1,500uF	2.0 ~ 10V	7.0mΩ	4,400mA

Series	Mount	Type	Description	Capacitance Range	Voltage Range	Max Current @ 30 Min.
NEXC	SMT	Low-Current Backup -25°C ~ 70°C Operating Range & -25°C ~ 85°C Operating Range	V-Chip SMT Design Reflow Capable	0.047F ~ 1F	3.5 ~ 5.5V	1.5mA
NEXG	LDD		Low-Profile Design	0.01F ~ 4.7F	5.5V	7.1mA
NEXM	LDD		Molded Case Design	0.01F ~ 0.22F	3.5 ~ 6.5V	0.33mA
NEXGW	LDD		Molded Case Design, 85°C Rated	0.47F ~ 2.2F	3.5 ~ 5.5V	3.3mA
NEXMW	LDD		Extended Range, 85°C Rated	0.047F ~ 0.47F	3.5 ~ 5.5V	0.15mA
NEXCW	SMT		V-Chip SMT Design 260°C Reflow Capable	0.047F ~ 0.47F	3.5 ~ 5.5V	0.42mA
NEXA	LDD	High-Current Backup -25°C ~ 70°C Operating Range & -40°C ~ 85°C Operating Range	Low-Profile Design	0.022F ~ 1F	5.5 ~ 11V	1.5mA
NEXS	LDD		Extended Range	0.022F ~ 5F	5.5 ~ 12V	18mA
NEXT	LDD		Wide Temperature Range	0.1F ~ 5.6F	5.5V	8.4mA

Ceramic & Film Capacitors

Visit NICcomp.com for our full series listing:

Ceramic Capacitors

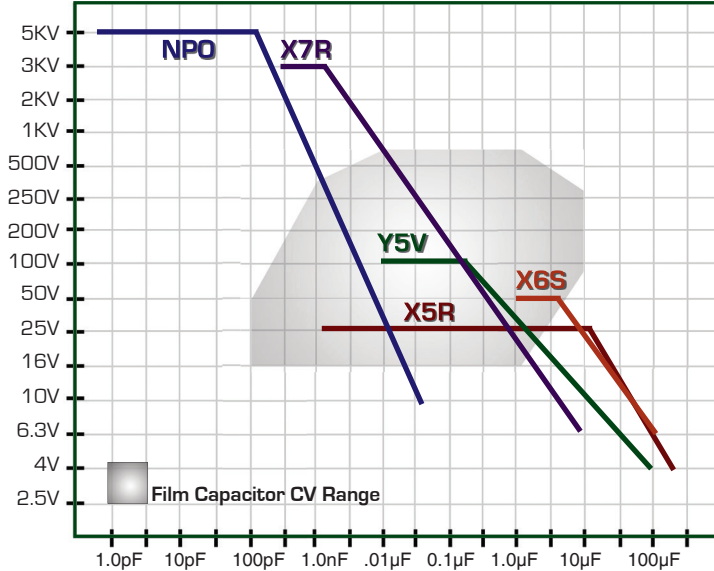
<https://www.niccomp.com/products/ceramic>

Film Capacitors

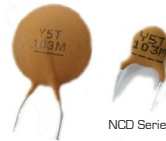
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CV Range By Dielectric Type



NMC-R Series



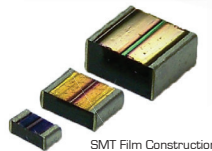
NCD Series



NSMX Series



NMC Series



SMT Film Construction

Capacitance/Tolerance Codes

Cap.	Code	Code	Tolerance
0.1pF	R10	A	±0.05pF
0.12pF	R12	B	±0.1pF
0.15pF	R15	C	±0.25pF
0.18pF	R18	D	±0.5pF
0.22pF	R22	E	±0.5%
0.27pF	R27	F	±1.0%
0.33pF	R33	G	±2.0%
0.39pF	R39	J	±5.0%
0.47pF	R47	K	±10%
0.56pF	R56	L	±15%
0.68pF	R68	M	± 20%
0.82pF	R82	Z	-20~+80%
1.0pF	1R0		
1.2pF	1R2		
1.5pF	1R5		
1.8pF	1R8		
2.2pF	2R2		
2.7pF	2R7		
3.3pF	3R3		
3.9pF	3R9		
4.7pF	4R7		
5.6pF	5R6		
6.8pF	6R8		
8.2pF	8R2		
10pF	100		
12pF	120		
15pF	150		
18pF	180		
22pF	220		
27pF	270		
33pF	330		
39pF	390		
47pF	470		
56pF	560		
68pF	680		
82pF	820		
100pF	101		
1,000pF	102		
.01µF	103		
0.1µF	104		
1µF	105		
10µF	106		
22µF	226		
33µF	336		
47µF	476		
100µF	107		

Capacitance Values

1 Micro Farad (µF) = 1x10⁻⁶Farad

1 Nano Farad (nF) = 1x10⁻⁹Farad

1 Pico Farad (pF) = 1x10⁻¹²Farad

Automotive Grade Components

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Safety Recognized Capacitors

Looking for Safety Agency approved Film capacitors? NIC offers X1, X2 & Y2 types. Get NIC Certification info at NICcomp.com/certs

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Surface Mount Ceramic Capacitors

Series	Description	Operating Range	Dielectric	Size Range	Capacitance Range	Voltage Range
NMC-A	Automotive Grade Flex Terminations	-55°C ~ 125°C	NPO, X7R	0402 ~ 1210	0.5pF ~ 1.0uF	10 ~ 630V
NMC NPO	MLCC Ceramic Chip Capacitors Standard Constructions Class I, II, & III Dielectrics	-55°C ~ 125°C	NPO	01005 ~ 2225	0.3pF ~ 0.1uF	10 ~ 100V
NMC X7R		-55°C ~ 125°C	X7R	0201 ~ 2225	47pF ~ 0.82uF	10 ~ 100V
NMC X5R		-55°C ~ 85°C	X5R	01005 ~ 0603	1,200pF ~ 0.82uF	6.3 ~ 25V
NMC Y5V		-30°C ~ 85°C	Y5V	0201 ~ 1206	0.01uF ~ 0.82uF	4 ~ 100V
NMC High Cap	High Capacitance MLCC	-55°C ~ 125°C	X7R, X6S, X5R, Y5V	0201 ~ 2225	1.0uF ~ 220uF	4 ~ 100V
NMC-T	Low Profile, High Capacitance	-55°C ~ 125°C	X7R, X5R, Y5V	0603 ~ 1210	0.22uF ~ 22uF	6.3 ~ 50V
NMC-H	High Voltage MLCC	-55°C ~ 125°C	NPO, X7R	0603 ~ 2225	0.22pF ~ 2.2uF	200 ~ 5KV
NMC-L	MLCC Ceramic Chip Capacitors High Frequency - High Q	-55°C ~ 125°C	NPO	0201 ~ 0805	1.0pF ~ 150pF	25 ~ 100V
NMC-M		-55°C ~ 125°C	NPO	0201 ~ 0603	0.1pF ~ 22pF	25 ~ 50V
NMC-Q		-55°C ~ 125°C	NPO	0201 ~ 0603	0.1pF ~ 47pF	25 ~ 250V
NMC-R	Reverse Geometry Low ESL	-55°C ~ 125°C	X7R, X5R	0204 ~ 0612	0.01uF ~ 1.0uF	6.3 ~ 50V
NMC-P	MLCC Flex Terminations	-55°C ~ 125°C	NPO, X7R, X5R	0805 ~ 2225	5.0pF ~ 100uF	16 ~ 5KV
NCA	MLCC Arrays	-55°C ~ 125°C	NPO, X7R, X5R, Y5V	0805, 1206	10pF ~ 0.1uF	10 ~ 100V

Leaded Ceramic Capacitors

Series	Description	Operating Range	Dielectric	Diameter Range	Capacitance Range	Voltage Range
NCD	Radial Leaded Disc General Purpose ~ High Voltage Class I, II, & III Dielectrics	-30°C ~ 85°C	N150, N750, NPO, Y5F, Y5P, Y5R, Y5S, Y5T, Y5V, Z5U, Z5V	5mm ~ 26mm	0.5pF ~ 0.22uF	12 ~ 5KV
NCM	Radial Multilayer Ceramic	-55°C ~ 125°C	NPO, X7R, Z5U	3.81mm ² ~ 12.71mm ²	10pF ~ 6.8uF	50 ~ 200V
NCMA	Axial Multilayer Ceramic	-55°C ~ 125°C	NPO, X7R, Z5U	2.54mm ~ 3.81mm	10pF ~ 1.0uF	50 ~ 200V

Surface Mount Film Capacitors

Series	Description	Operating Range	Dielectric	Size	Capacitance Range	Voltage Range
NSHC	Stacked Film Construction High Capacitance	-55°C ~ 125°C	PPS	0603 ~ 2413	100pF ~ 0.22uF	16 ~ 50V
NSPU		-40°C ~ 85°C	Resin	0805 ~ 1210	0.1uF ~ 1.0uF	16V
NSWC		-55°C ~ 105°C	Polyester	1206 ~ 3925	1,000pF ~ 1.0uF	16 ~ 250V
NSPH		-55°C ~ 125°C	Resin	1206 ~ 2220	1,000pF ~ 22uF	16 ~ 63V

Leaded Film Capacitors

Series	Description	Series Type	Safety Rating	Operating Range	Capacitance Range	Voltage Range
NPX	Radial Film Safety Capacitors Metallized Polypropylene Interference Suppression	Standard Range	X2	-40°C ~ 100°C	0.001uF ~ 1.0uF	275 ~ 310Vac
NPXH		Extended Values		-40°C ~ 110°C	0.001uF ~ 10uF	330Vac
NPXI		Superior Performance		-40°C ~ 110°C	0.01uF ~ 10uF	300Vac
NPXF		Standard Range	X1	-40°C ~ 110°C	0.001uF ~ 10uF	440Vac
NPYT	Radial Film Y2 Safety Class	Standard Range	Y2	-40°C ~ 85°C	0.01uF ~ 18uF	100 ~ 630V

Inductors, EMI Suppression and Transformers

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Power, RF and Signal Inductors

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EMI Suppression

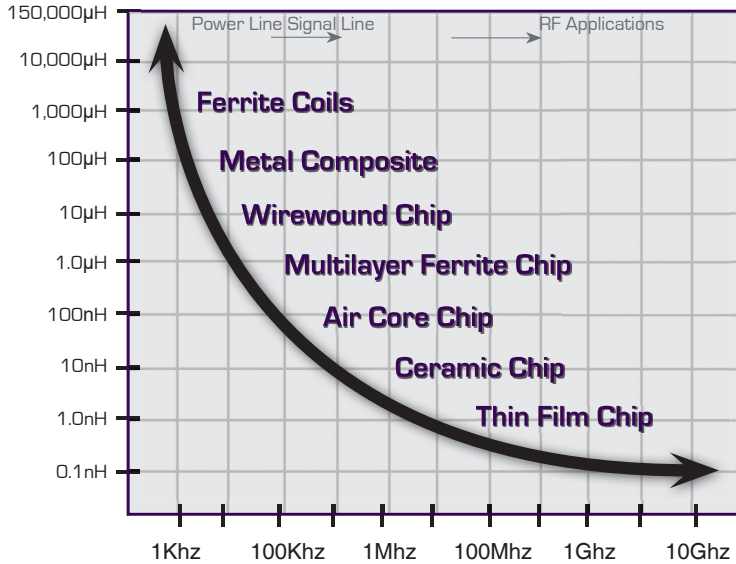
<https://www.niccomp.com/products/emi>

Transformers

<https://www.niccomp.com/products/transformers>



Component Type by Value/Application



Terms to Know...

Inductance - Henry (H) measuring unit for inductors

- 1 Milli Henry (mH) = 1×10^{-3} Henry
 - 1 Micro Henry (µH) = 1×10^{-6} Henry
 - 1 Nano Henry (nH) = 1×10^{-9} Henry
- Power Range
↓
RF Range

Impedance - Ohm (Ω) - Measuring Unit for Ferrite beads & Common Mode Chokes

Q - Quality Factor of Inductors measuring loss

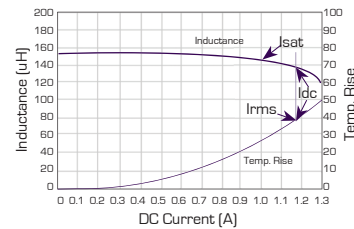
SRF - Series Resonance Frequency (MHz)

DCR - DC Resistance measured in Ohm (Ω)

I_{dc} - DC Current allowed to component (A)

Current Rating - Power Inductor Derating Guides

- I_{rms}** - Temperature Rise Current
- I_{sat}** - Inductance Drop Current
- I_{dc}** - Combined Rating of I_{sat} & I_{rms}



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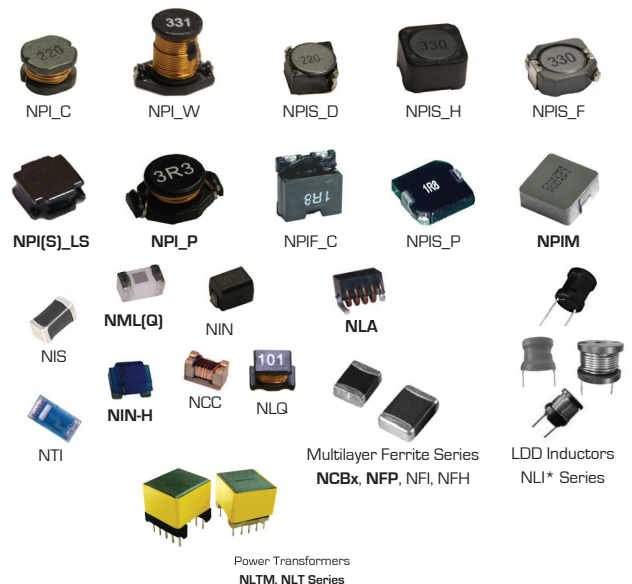
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Over 100 Sizes & Constructions



Power Inductors

Series	Shielding	Description	Type	Inductance Range	DCR Range	I _{rms} Max	I _{sat} Max
● NLQ	Unshielded	Legacy Construction	Reduced Chip Sizes	0.1uH ~ 560uH	28mΩ ~ 28.6Ω	1.45A	1.45A
● NPL_C	Unshielded		General Purpose	150nH ~ 10uH	1.7mΩ ~ 23.8mΩ	4.0A	4.0A
● NPL_W	Unshielded		Extended Ranges	1uH ~ 4.7mH	9mΩ ~ 13.8Ω	8.6A	20A
● NPIS_D	Shielded		General Purpose	1uH ~ 1mH	14mΩ ~ 5.7Ω	6.8A	6.8A
● NPIS_F	Shielded		Extended Ranges	800nH ~ 1mH	4.3mΩ ~ 1.989Ω	13.5A	13.5A
● NPIS_H	Shielded		Higher Current	1uH ~ 3.3mH	5.5mΩ ~ 9.44Ω	11.6A	19.5A
● NPIS_L	Shielded	Automatic Assembly High Efficiency, Performance	General Purpose	800nH ~ 220uH	6mΩ ~ 4Ω	7.8A	11A
● NPIS_LA	Shielded		Automotive Grade	360nH ~ 470uH	4.8mΩ ~ 2.05Ω	8.5A	16.5A
● NPIS_LP	Shielded		Lower DCR	160nH ~ 330uH	18mΩ ~ 4.9Ω	6.2A	7.8A
● NPIS_LS	Shielded		Extended Ranges	470nH ~ 10mH	8mΩ ~ 27.36Ω	6.3A	13.8A
● NPIM_L	Shielded		Metal Composite	240nH ~ 10uH	13mΩ ~ 0.57Ω	7.0A	10.8A
● NPIM_LP	Shielded			240nH ~ 10uH	13mΩ ~ 0.2Ω	6.0A	8.0A
● NFM	Shielded	Multilayer Construction Reduced Sizes Lower Profiles	General Purpose	100nH ~ 10uH	70mΩ ~ 0.9Ω	1.0A	1.0A
● NFP(S)	Shielded		High Performance	220nH ~ 10uH	40mΩ ~ 0.5Ω	2.3A	2.5A
● NFM	Shielded		Metal Composite	0.15uH ~ 1.5uH	18mΩ ~ 0.125Ω	5.9A	4.0A
● NPIM_A	Shielded	High Current - Low Loss Ultra-Low DCR Metal Composite Construction	Automotive Grade	680nH ~ 47uH	1.98mΩ ~ 0.179Ω	26.3A	42A
● NPIM_B	Shielded		Lower DCR	100nH ~ 150uH	0.65mΩ ~ 0.35Ω	42A	75A
● NPIM_C	Shielded		Larger Sizes	100nH ~ 10uH	0.7mΩ ~ 68mΩ	45A	110A
● NPIM_P	Shielded		Extended Ranges	100nH ~ 100uH	0.8mΩ ~ 11.8Ω	46A	65A
● NPIM_PA	Shielded		Automotive Grade	100nH ~ 220uH	0.6mΩ ~ 0.55Ω	55A	118A
● NPIM_W	Shielded		Automotive Grade 180°C	470nH ~ 68uH	3.5mΩ ~ 0.21Ω	27A	29A
● NPIM_Z	Shielded	Ultra High Performance	100nH ~ 4.7uH	1.6mΩ ~ 52mΩ	32A	40A	
● NPIF_C	Shielded	Flat Wire Construction	Lower DCR	150nH ~ 10uH	1.7mΩ ~ 23.8mΩ	19A	19A

RF & Signal Inductors

Series	Application	Construction / Type	Description	Size Range	Inductance Range	I _{dc} Max	Highest Q Min..	Highest SRF Min.
● NIN-H	RF	Ceramic Wirewound	Full Range	0402 ~ 1812	1.0nH ~ 33uH	1.5A	75	10.8Ghz
● NIN-S	RF		Ultra-High Performance	0402	1.3nH ~ 75nH	3.15A	35	18Ghz
● NIN-Z	RF		High Current	0402 ~ 0603	1.0nH ~ 390nH	2.3A	49	16Ghz
● NLA	RF	Air Core	High Q, Epoxy Top	0403 ~ 1006	2.5nH ~ 538nH	4A	145	12.5Ghz
● NML	RF	Ceramic Multilayer	General Purpose	0201 ~ 0603	0.6nH ~ 470nH	1.0A	12	10Ghz
● NMLQ	RF		High Q, High Performance	0201 ~ 0402	0.6nH ~ 100nH	1.0A	22	10Ghz
● NTI	Signal	Thin Film	Tight Precision	0201 ~ 0402	0.1nH ~ 100nH	800mA	15	14Ghz
● NFI	Signal	Ferrite Multilayer	General Purpose	0402 ~ 1206	0.047nH ~ 47nH	300mA	50	320Mhz
● NIN	RF & Signal	Molded Wirewound	Extended Values	1008 ~ 1812	10nH ~ 1mH	1.05A	50	3.3Ghz

Ferrite Chip Beads

Series	Description	Type	Size Range	Impedance Range	Frequency Range	Idc Max.	DCR Min.
● NCB	Multilayer Construction Standard Current	General Performance	0201 ~ 1812	7Ω ~ 2,500Ω	< 1Ghz	900mA	0.1Ω
● NCB-G		High Frequency > 1Ghz	0402 & 0603	120Ω ~ 1,800Ω	> 1Ghz	300mA	0.55Ω
● NCB-H	Multilayer Construction High Current	General Performance	0402 ~ 1812	10Ω ~ 1,300Ω	< 1Ghz	6,000mA	0.01Ω
● NCB-GH		High Frequency > 1Ghz	0402 & 0603	120Ω ~ 1,500Ω	> 1Ghz	2,000mA	0.055Ω

Common Mode Chokes

Series	Description	Type	Size Range	Impedance	Inductance	Idc Max.	DCR Min.
● NCC	Common Mode Choke USB 2.0	General Performance	0805 & 1206	30Ω ~ 2,200Ω	-	400mA	0.2Ω
● NCCA		Automotive Grade	0805 & 1206	67Ω ~ 2,200Ω	-	400mA	0.25Ω

Power Over Ethernet [PoE] & LAN Transformers

Series	Topology	Description	Core Types	Power Rating	Voltage Ratings
● NTLM	PoE, Flyback	Power Transformers LDD & SMT Designs	EE, EFD, EP, EPC	< 30W	3.3V ~ 24Vdc

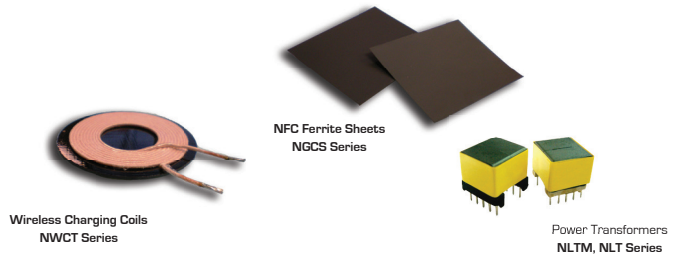
Customized & Performance Passives

With the latest technology trends in mind NIC has extended its magnetic lineup with focus on customized, specialty and performance passives.

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- ◇ Gate Drive Transformers
- ◇ LAN Transformer PCB Modules
- ◇ Planar Transformers
- ◇ Power Over Ethernet [PoE] Transformers
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Relays

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Electromechanical Relay Features

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- ◇ High Dielectric Strength
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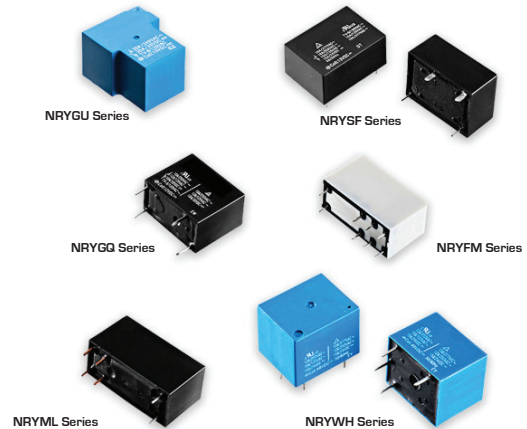
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- ◇ Inverters
- ◇ IoT: Smart Home, Smart Grid
- ◇ Automotive
- ◇ Lighting
- ◇ Uninterruptable Power Supply (UPS)

Power Relays Series Listing

Series	Description	Operating Temperature	Contact Forms	Rated Load	Operating Voltage
● NRYFM	Reduced Size Standard DC	-40°C ~ 85°C	DPST,DPDT	8A 250VAC / 8A 30VDC	5 - 110Vdc
● NRYGQ	Reduced Size Lower Power Consumption Standard DC	-40°C ~ 105°C	SPST	10A 250VAC / 12A 125VAC 10A 30VDC / 10A 277VAC	5 - 24Vdc
● NRYGU	High Current Standard DC	-25°C ~ 55°C	DPST,SPDT	SPST 30A 120VAC/30A SPST 240VAC/30A 30VDC SPDT NC: 20A 240VAC/10A 30VDC SPDT NO: 30A 240VAC/20A 30VDC	5 - 110Vdc
● NRYML	Reduced Size High Current Standard DC	-40°C ~ 85°C	SPST	16A 277VAC	5 - 60Vdc
● NRYSF	Flat Form Standard DC	-40°C ~ 85°C	SPST	15A 125VAC/10A 277VAC/ 16A 250VAC (TUV)/15A 24VDC (TUV)	5 - 100Vdc
● NRYWH	Sugar-Cube High Current Standard DC	-40°C ~ 85°C	SPST,SPDT	12A 250VAC (UL) 10A 277VAC (TUV) 15A 120VAC / 15A 24VDC	5 - 48Vdc

Resistors and Thermistors

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SMT & LDD Resistors

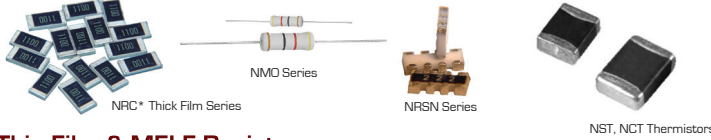
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Negative Temperature Thermistors

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Thick Film & Axial Resistors, Thermistors



Thin Film & MELF Resistors



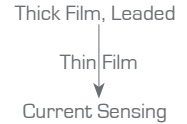
Current Sensing Resistors



Terms to Know...

Resistance - Ohm (Ω) measuring unit for resistors

- 1 Gig-Ohm (G Ω) = 1×10^9 Ohm
- 1 Meg-Ohm (M Ω) = 1×10^6 Ohm
- 1 Kil-Ohm (K Ω) = 1×10^3 Ohm
- 1 Ohm (Ω) = 1×10^0 Ohm**
- 1 Milli-Ohm (m Ω) = 1×10^{-3} Ohm



Tolerance - (%) - Limits of variation in value

TCR - (PPM) Limits of variation vs. change in temperature

Power Rating - (W) Limiter of heat dissipation in component

Current Rating - (A) Rated Limit to component

Voltage Rating - (V) - Max voltage component is limited to operate within

Working Voltage - (V) - Limits of operation in varistors & diodes

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Values: E-24, E-96, & E-192

100	101	102	104	105	106	107	109	110	111	113	114
115	117	118	120	121	123	124	126	127	129	130	132
133	135	137	138	140	142	143	145	147	149	150	152
154	156	158	160	162	164	165	167	169	172	174	176
178	180	182	184	187	189	191	193	196	198	200	203
205	208	210	213	215	218	220	221	223	226	229	232
234	237	240	243	246	249	252	255	258	261	264	267
270	271	274	280	284	287	291	294	298	300	301	305
309	312	316	320	324	328	330	332	336	340	344	348
352	357	360	361	365	370	374	379	383	388	390	392
397	402	407	412	417	422	427	430	432	437	442	448
453	459	464	470	475	481	487	493	499	505	510	511
517	523	530	536	542	549	556	560	562	569	576	583
590	597	604	612	619	620	626	634	642	649	657	665
673	680	681	690	698	706	715	723	732	741	750	759
768	777	787	796	806	816	820	825	835	845	856	866
876	887	898	909	910	920	931	942	953	965	976	988

E-24 Only E-96 Only E-192 Only E-24 & E-192 E-24, E-96 & E-192



Thick Film & MELF Resistors

Series	Type	Size Range	Resistance Range	Max Power	Tolerances	TCR (PPM)
● NRC(E)	General Purpose Chips & Arrays	01005 ~ 2512	1.0Ω* ~ 10MΩ (4.7GΩ)	1W	0.1%, 0.25% (NFR Only) 0.5%, 1% (E-24 & E-96) 5% (E-24)	±100 ~ ±400 (±1,500)
● NRSN		0402x2 ~ 1206x4	1.0Ω* ~ 1MΩ	1/8W		±200 ~ ±650
● NRSNE		0201x2 & 0201x4	10Ω ~ 1MΩ	1/32W		± 200
● NRC-P	Anti-Surge	0603 ~ 2512	10Ω ~ 1MΩ	1W		± 200
● NRCPH		0603 ~ 1210	1.0Ω ~ 1MΩ	3/4W		±100 ~ ±200
● NRCW	High Power	0603 ~ 2512	1.0Ω ~ 1MΩ	2W		±100
● NRCV	High Voltage	0402 ~ 2512	10Ω ~ 10MΩ	1W		±100 ~ ±400
● NRCA	Automotive Grade	0402 ~ 2512	1.0Ω ~ 10MΩ	1W		±100 ~ ±400
● NRC-AS	Sulfur Resistant Chips & Arrays	0201 ~ 2512	1Ω ~ 10MΩ	1W		±100 ~ ±200
● NRC-S		0402 ~ 2512	1Ω ~ 22MΩ	1W		±100 ~ ±600
● NRCPS		0603 ~ 1210	1Ω ~ 1MΩ	3/4W		±100 ~ ±200
● NRSNS		0402x4 & 0603x4	10Ω ~ 1MΩ	1/10W		±200 ~ ±300
● NRCL	Lead Free Resistors Chips & Arrays	0201 ~ 1210	1.0Ω* ~ 10MΩ	1/3W		±100 ~ +800/-100
● NRSNL		0402x2 ~ 1206x4 ~	10Ω* ~ 1MΩ	1/10W	±100 ~ ±200	
● NFR	Metal Film MELF	0102 ~ 0207	0.1Ω ~ 10MΩ	/	±25 ~ ±100	

* Zero Jumpers are available; refer to series datasheet for more information. **For values above 10MΩ please refer to NRCE series

Thin Film Resistors

Series	Type	Size Range	Resistance Range	Max Power	Tolerances	TCR (PPM)
● NTR	General Thin Film	0201 ~ 2512	1Ω ~ 3MΩ	1/2W	0.01% , 0.05% , 0.1% 0.25%, 0.5%, 1% (All E-24, E-96, & E-192)	±2 ~ ±50
● NTRC	Anti-Corrosive	0402 ~ 2512	10Ω ~ 1MΩ	1/2W		±25 & ±50
● NTR-H	Higher Power	0603 ~ 1206	10Ω ~ 1MΩ	1/4W		
● NTRA	Automotive Grade	0402 ~ 2512	10Ω ~ 1MΩ	1/2W		

Current Sensing Resistors

Series	Type	Size Range	Resistance Range	Max Power	Tolerances	TCR (PPM)
● NCST	Thick Film	0402 ~ 2512	3mΩ ~ 1Ω	3W	1% 2% 5% All E-24 & E-96	±200 ~ ±600
● NCSR	Metal Film	1206 ~ 2512	0.5mΩ ~ 15mΩ	3W		±50 ~ ±150
● NCSS	Metal Strip	0805 ~ 2512	1mΩ ~ 50mΩ	2W		±75 ~ ±275
● NCLP		2512	1mΩ ~ 500mΩ	3W		±50
● NCLS	Metal Foil	0603 ~ 1206	5mΩ ~ 40mΩ	1W		±100
● NCSW	Thin Film	0402 ~ 2512	100mΩ ~ 910mΩ	1W		±200 ~ ±300

Negative Temperature Thermistors

Series	Type	Size Range	Resistance Range	Max Power	Tolerances	Beta Ranges
● NCT	Thick Film Negative Temperature Coefficient	0402 ~ 0805	47Ω ~ 1.6MΩ	130mW	1%, 3%, 5%, 10%	3380 ~ 4500K
● NST			2.2KΩ ~ 470KΩ	200mW	(1% & 3% Beta Tolerances)	3380 ~ 4300K

Circuit Protection

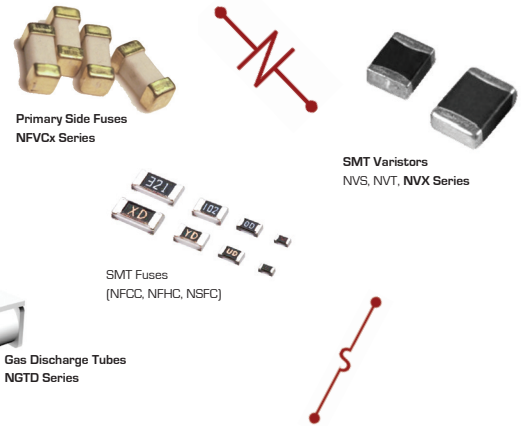
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SMT Safety Fuses

Series	Product	Type	Size Range	Current Ratings	Voltage Rating	Time/Current
● NFCC	Secondary Protection Thick Film Safety Fuses	Low Current	0402 ~ 1206	0.15A ~ 2.5A	24 ~ 50Vdc	5s under 200%
● NFHC		High Current	0402 ~ 1206	3.15A ~ 5A	24 ~ 50Vdc	5s under 250%
● NFSC	UL Certified	Transient Current	0603	0.5A ~ 5A	32Vdc	5s under 200%
● NFVC-F	Primary Protection Safety Fuses	High Current	6125	0.4A ~ 20A	65 & 125Vac	5s under 200% ~ 20s under 200%
● NFVC-H		High Voltage	6125	1.0A ~ 5A	250Vac	120s under 200%
● NFVC-S		UL Certified	Slow Blow	6125	1.0A ~ 5A	125Vac

SMT Varistors

Series	Product	Type	Size Range	Working Voltages	Varistor Voltages	Min. Capacitance
● NVX	Multilayer Chip Varistors General, ESD, & High Speed Styles	SMT Single Chip	0402 ~ 1206	5.5 ~ 14Vdc	10 ~ 67V	3pF
● NVA		SMT Array Chip	0805	5.5 ~ 18Vdc	10 ~ 28V	10pF

SMT Diodes

Series	Product	Type	Sizes	Max Vdc Range	Io Current	Operating Range
● NRD	Surface Mount Rectifier Diodes	Silicon	SMA	50Vdc ~ 1KVdc	1A	-55°C ~ +150°C
● NSD		Schottky		20Vdc ~ 100Vdc	1A	-60°C ~ +150°C
● NDTV	TVS Diodes	Voltage Suppressors	SMA, SMB, SMC, SMD	11Vdc ~ 75Vdc	1A, 2A	-55°C ~ +150°C

SMT Gas Discharge Tubes

Series	Product	# of Terminals	Size	Breakdown Voltage (100V/5)	Impulse Spark-Over Voltage (1KV/us)	Impulse Discharge Current (8/20uS)	Arc Voltage (1A)	Applications
● NGTA	Surface Mount Gas Discharge Tubes	2	1812	150V ~ 450V	≤650V ~ ≤750V	1,000A	8V ~ 15V	Coaxial, RS485, RS232, RS422, DC12V, AC24V, xDSL
● NGTC		2	1812	200V ~ 600V	≤700V ~ ≤1,200V	2,000A		RS485, RS232, RS422, DC12V, AC24V, xDSL, Ethernet
● NGTD		3	3020	90V ~ 1,000V	≤700V ~ ≤1,800V	5,000A		RS485, RS232, RS422, DC12V, AC24V, xDSL, NEBS
● NGTF		2	2016	900V ~ 1,200V	≤650V ~ ≤2,000V	5,000A		RS485, RS232, RS422, DC12V, AC24V, AC Power
● NGTM		2	2332	90V ~ 3,600V	≤600V ~ ≤5,000V	20,000A		DC Power, AC Power

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Cable Assemblies

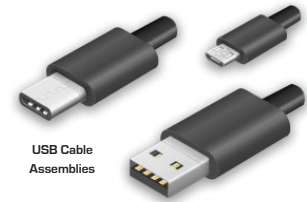
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Communication Components

Series	Product	Operating Range	Size Range	Frequency Range	Impedance Options	Max. Attenuation
● NGAW	Wifi Chip Antennas	-40°C ~ 85°C	2.5 x 1.25 (0805) ~ 50.0 x 4.0 mm (5004)	433MHz ~ 3.01GHz	50Ω	
● NGFP	LTCC RF Chip Filters & Diplexers		0402 ~ 1210	2450 MHz ~ 5787.5 MHz	-	51.5dB
● NGFL			0402 ~ 1206	560 MHz ~ 5787.5 MHz	-	40dB
● NGD_C			0603 ~ 1210	2400 ~ 2500 MHz 9800 ~ 11800 MHz	-	30dB
● NGB_C	LTCC RF Chip Baluns		0402 ~ 0805	896Mhz ~ 5.4Ghz	50Ω, 100Ω, 150Ω, 200Ω	-

USB Cable Assemblies

Part	USB Version	Connection 1	Connection 2	Length
● NUCA3.1CM5ACM1R00BEF	3.1	C Male	C Male	1M
● NUCA2.0AM3ACM1R00BF	2.0	A Male	C Male	1M
● NUCA2.0AM3AUBM1R50BVF	2.0	A Male	Micro B Male	1.5M

USB Connectors

Part	USB Version	Connection Type	Performance	Mount Type
● NUCA3.1CM5ACM1R00BEF	USB 3.1: Speeds Up To 10 Gb/s	C Female [Receptacle]	24 Pin 5.0A Rated	SMT Mid Mount Protruding Board Edge
● NURC3.1S24MFO4NTRF			24 Pin 1.25A Rated	SMT Mid Mount Flush Board Edge
● NURC3.1H24TFOSNTRF			24 Pin 5.0A Rated	SMT + PTH Top Mount Flush Board Edge

Cross Referencing



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SMT Aluminum Electrolytic Capacitors

NIC Series	Elna	Illinois / CDE	Lelon	Nichicon	Panasonic	Rubycon	Sanyo	UCC
NACE	RV, RV2 RV3	SML	RV RV2	UUR, UWX UUG	VA VS	REV SEV	CE-C CE-BS	MV
NACEW	RVL, RVJ RVS	SMH	RVS	UUU, UWT UUT, UUX	VG, VV HA, HB	RGV RKV	***	MVK MVJ
NACK	RVZ	***	***	UUA	FK	TZV	***	EMVA
NACV NACVF	***	***	***	UUG UUJ	EB	***	CE-FS	MVH, MHA MHB
NACX	RVH	GAZ	***	UWF	FC	RZV	CV-GX	***
NACY	***	***	***	UWG	***	***	***	***
NACZ	RVH RVJ	AXZ	***	UWF, UUD UUG, UUU	FC	SGV	CV-GX	EMVA
NATT	UCA	***	***	***	***	***	CE-PC	***
NAZJ	***	***	***	***	FP	***	***	***
NAZT	AXZ	***	***	***	EEE-FK	REV	CE-LX	***
NAZU	***	***	***	UUA	***	***	CE-LS	***
NAZV	***	***	***	CW	***	***	***	MZE
NSP	***	UV	***	***	SP	***	***	***
NSPE-x NSPVM	***	HZ	***	CF, CJ, CG	ZA, ZC ZE, ZK, ZS	***	OS-CON SVP, SVQ	PXS, PXF, PXE, PXA, PXH

LDD & Snap-In Aluminum Electrolytic Capacitors

NIC Series	BC	Elna	Epcos	Illinois	Jamicon	Lelon	Nichicon	Panasonic	Rubycon	UCC
NRSS	038 RSU	RE3	B41821	CKS	SM	***	UVR	M	YK	SMG
NRWA	047, RMS 048, RML	RJ3	B42822 B42823	RMR CKH	TK	RGA RJA	UPR UVZ	MH NHG	YXA	KMG(VB)
NRWS	148 RUS	RJ4	B41851	***	TM	RGA RJA	UVZ	MH NHG	YXA	KMG(VB)
NRWP	***	***	***	***	***	***	UVZ	***	***	KMG
NRSZ	135 RLJ	RSH, RSE RSG	B41857	RZM LSR	WG	RXJ RXK	UPJ, UPY UPL, UPF	GA, FB HFG, HFG	YXF GXF	LXF, LXV KMF, LXJ, SXE
NRSG	150 RMI	RJB	***	***	***	***	UHD	EECFA	ZL	***
NRZJ	136 RVI	RJL	B41888	KBM	TB	RZW	HY HD	FC FK	ZLJ ZLH	KZM, KZH KZG
NRE-JL	RVI	RJF RJL	B41890	KBM	***	RZW	UHE	FR EEUFR	YXJ	KY, KZG KZJ
NRB-XS	***	***	***	TXK	***	***	UCA	***	BXC	KXG
NRL*	157 PUM-SI	LP3, LP4 LP5	B41303, B43303 B43501	***	LP	LS	LPW LPX	TS-UP TS-U	USP USR	SMH 82DA
NRL*W	159 PUL-SI	LPE, LPH LPG, LP3J	B41505, B43504 B43505	***	HP	LSG	LGG, LGQ LGU	TS-NH TS-HA	MXC MXR	KMH, KMR 81DA

Surface Mount Ceramic Capacitors

NIC Series	AVX	Johanson	Kemet	Murata	Samsung	Taiyo Yuden	TDK	Vishay
NMC{All Dielectrics}	*D, *C, *G	***	C*P, C*R, C*V	GRM	CL	*MK	C*	VJ*
NMC-Q	Hi-Q	S	CBR	GJM	***	QVS	***	***

Leaded Film Capacitors

NIC	Faratriotics	Kemet	Epcos / TDK	Panasonic	Vishay	Wima
NPXH	MPK62	F861	B3291	ECWFE	MKP	MKP-X2
NPXI	C42(E)	F862	B32651	***	***	***
NPXF	MPK65	PME278	B32918	ECQU	MKP	MKP-X1
NPYT	MKP63	F881	B3202	ECQUL	MKP	MKP-Y2

Power Inductors

NIC	Bourns	CoilCraft	Kemet	Murata	Sumida	Taiyo Yuden	TDK	Tyco	Vishay	Würth
NPL_C	SDE	***	SSB	***	CD VDI	***	***	DN	IDCP	WE-PD2
NPL_W	SDR	DO	***	***	CDR	***	***	DU	IDC	WE-PD4
NPIS_D	SRU	MSS	H.DI	***	CDRH_D	***	***	***	***	WE-TPC
NPIS_F	SRR	MSS	***	***	CDRH	***	***	***	***	WE-TPC XLH
NPIS_H	SRR	MSS	H.DI	***	CDRH	***	***	***	***	WE-PD
NPIS_Lx NPIM_Lx	SRN	LPS	***	LGH	CDEP	NR MDKK	VLV VLS	***	IFSC	WE-LQSH
NPIF_C	***	SER	***	***	CDEP	***	***	***	***	***
NFP, NFM	***	***	***	LGM	***	CBC	MLZ	***	***	***
NPIM B/C/P	SRP	MLC, MVR	MPC	***	CDM CDEP	***	SPM VLB	***	IHLP	WE-MASH-I
NPIM PA/W										
NPIM_Z	***	XAL, XFL	***	***	CDMT	***	***	***	***	***

RF & Signal Chip Inductors

NIC	Coilcraft	Epcos	KOA	Murata	Panasonic	Taiyo-Yuden	TDK	Toko	Vishay
NML	***	***	NML NHL	LQG	..***	HK	MLG MLK	LLP	ILC
NIN-H	CS, CT HS, HP, HT, HQ, LS	B82498F	KQ KL	LQW	***	***	ACL, NL NLC	LL LLQ	IFC
NIN-S									
NIN-Z									
NIN	CS, CT HS, LS	***	KQ KL	LGN	ELJ=C ELJ-A	LEM	***	LS NB	IMC ISC

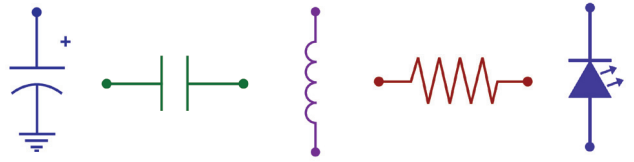
Thick Film, Thin Film & Specialty Resistors

NIC Series	Bourns	Kamaya	KOA	Panasonic	Samsung	SEI	TT	Vishay	Walsin	Yageo
NRCx	CR	RMC	RK	ERJ	RC	RMCF, RPC	WCR	CRCW	WR	RC
NTRx	CRT	RNC	RN	ERA	RC	RNC	WCR	TNPW	WF	RT
NCSx	CRL	***	SL	ERJ	RU	CSR	ULR	WSL	WW, WR	RL
NCLx										
NFR	***	***	RN	***	***	MLF	WRM	SMM	***	ZC

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