

# NIC PRODUCT PROFILE

## NMC-R series

Reverse Geometry Low ESL Ceramic Chip Capacitors - MLCCs



[www.niccomp.com/catalog/nmcr.pdf](http://www.niccomp.com/catalog/nmcr.pdf)

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NIC Components is pleased to announce the addition of low equivalent series inductance (ESL) version products to its' expanded offering of multilayer ceramic chip capacitors (MLCCs). New NMC-R series utilizes reverse geometry construction to reduce ESL by up to 60%, as compared to standard construction MLCCs.

Offered in four case sizes, 0204, 0306, 0508 and 0612, the NMC-R series is ideal for use as high speed decoupling capacitors, mounted in close proximity or adjacent to microprocessors to minimize and suppress high frequency noise.

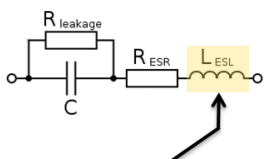
Supported in X7R and X5R temperature coefficients, with capacitance value range of 10nF (0.01uF) to 1.0uF in tolerance of  $\pm 10\%$  (K). Voltage ratings from 6.3V to 50V are supported over operating temperature ranges of  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (X7R) and  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  (X5R).

NMC-R series is halogen free, RoHS compliant and supplied on carrier tape for automated pick and placement, followed by Pb-free  $+260^{\circ}\text{C}$  reflow soldering. Typical unit prices range from \$0.02 to \$0.05 each in production volumes. Please contact NIC for evaluation samples, and to review your requirements

### FEATURES

- Low Inductance (ESL) for decoupling applications
- Reduces ESL up to 60%
- Decoupling and noise suppression in high-speed circuits
- Improved response time in power circuits
- Reduce the number of decoupling components used
- Reduce PCB size - costs and placement costs

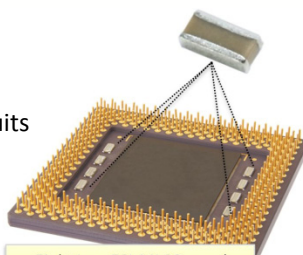
Real world capacitor



### ESL

☒ ESL impacts the speed of the capacitor response in transferring energy to the load

Parameter	Guide
Parasitic Inductance (ESL)	↓ Lower is better
Parasitic Resistance (ESR)	↓ Lower is better
Insulation Resistance (IR)	↑ Higher is better



Eight Low ESL MLCCs used in microprocessor decoupling



Low ESL

### Co-sell with NIC Products:



**NPIM\_P** – SMT Power Inductors  
Metal Composite Shielded;  
High Current - Low Loss



**NCLS** – Low cost Metal Foil on  
Ceramic Current Sensing Resistors

### Circuit Applications:

- Micro-processor Decoupling
- Powering LSI
- High Speed Transient for IC
- High Freq Noise Suppression
- Capacitor Bank
- Load Stepping
- Point of Load (POL)

### End Products

- Servers & Routers
- Telecomm, Datacomm
- PCs, Tablets & Laptops
- Embedded Computing
- HD Video, Gaming
- Workstations
- Cellular Base Stations

### → Cross the below competitor PNs

Competitor	Product Series
AVX	0204_C, 0306_C, 0508_C, 0612_C 0204_D, 0306_D, 0508_D, 0612_D
Murata	LLL15_, LLL18_, LLL21_, LLL31_
Samsung	CL01, CL21, CLL5, CLL6
Taiyo Yuden	JWK105, JWK107, JWK212, JWK316

