

NON-MAGNETIC HIGH Q MULTI-LAYER CAPACITORS



These Multi-Layer capacitors have been sold around the world for two decades. Made from highly stable, low loss dielectric formulations, these traditional porcelain MLCs are known for their high RF power handling capability. Available in all industry common case sizes, Voltronics offers capacitors with exactly the size, capacitance value, and voltage rating that your application requires. The special silver-palladium termination and the proprietary ceramic formulations guarantee consistent non-magnetic performance. All MLCs in these series are RoHS compliant.

Chips are available either with standard termination or can be fitted with ribbon leads, depending on your application.

Case Size Series	Dimensions inches	Working Voltage Range, Volts DC	Capacitance Range, pF
5	0.055" x 0.055"	Up to 250V	0.1 to 100
11	0.110" x 0.110"	Up to 1000V	0.1 to 1000
25	0.220" x 0.250"	Up to 2500V	1.0 to 2700
38	0.380" x 0.380"	Up to 7200V	1.0 to 5100

Codes	Capacitance Codes	Tolerance Codes	DC Working Voltage	Termination Codes	Material Codes	Lead Codes
11 25 38	0R1 0.1pF 100 10pF 101 100pF 102 1000pF	A ± 0.05pF B ± 0.10pF C ± 0.25pF D ± 0.50pF F ± 1% G ± 2% J ± 5% K ± 10%	50 100 200 300 500 600 1000 1500 2500 3600 7200	M New Flexible Polymer/Ag Layer, 400-μ-in Cu barrier, 200-μ-in Sn plate. (RoHS) S Original Pd/Ag plate. W New Ag Layer, 400-500μ-in Cu barrier, 200-μ-in 90/10 Sn plate. (RoHS)	H AH + 90±20ppm/°C F CF 0±15ppm/°C	Blank = no leads R = Ribbon leads

11 Series — **7R5** Capacitance Code — **B** Tolerance — **1000** DC Working Voltage — **M** Termination — **H** Material — **R** Lead

Consult Factory for Complete Catalog

FOR NMR PROBES AND MRI SURFACE COILS

Description

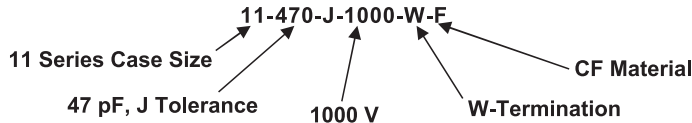
Porcelain Capacitors
 Low ESR, High -Q
 Capacitance Range 0.1 - 5100 pF
 Zero TCC
 Low Noise
 High Self-resonance
 Established reliability

Functional Applications

Impedance Matching
 DC Blocking
 Bypass
 Coupling
 Tuning
 Feedback

0.1 pF Increments
 0.1 pF Increments

Part Numbering System



Electrical Specifications

Dissipation Factor	0.05% @ 1 MHz max.
Dielectric Withstanding Voltage Voltage Rating (WVDC) DWV	Please see Chart 250% of rated WVDC for 5 sec. Unless specified in chart
Insulation Resistance @ 25 °C @ 125 °C	10 ⁶ M min. 10 ⁵ M min.
Aging	None
Piezoeffects	None
Dielectric Absorption	None
Capacitance Tolerances	A, B, C, D below 10 pF F, G, J, and K, 10 pF and above

Lead Types

Axial Ribbon*
Radial Ribbon*
Center Ribbon*
None

*add -R and type of Ribbon to end of part number

Packaging

Style	Package	Option
5 Series	Bulk in plastic bags	Tape & Reel - 3,500 pcs.
11 Series	Bulk in plastic bags	Tape & Reel - 2,350 pcs.
25 Series	Bulk in plastic bags	Tape & Reel - 500 pcs.
38 Series	Bulk in plastic bags	Tape & Reel - 250 pcs.

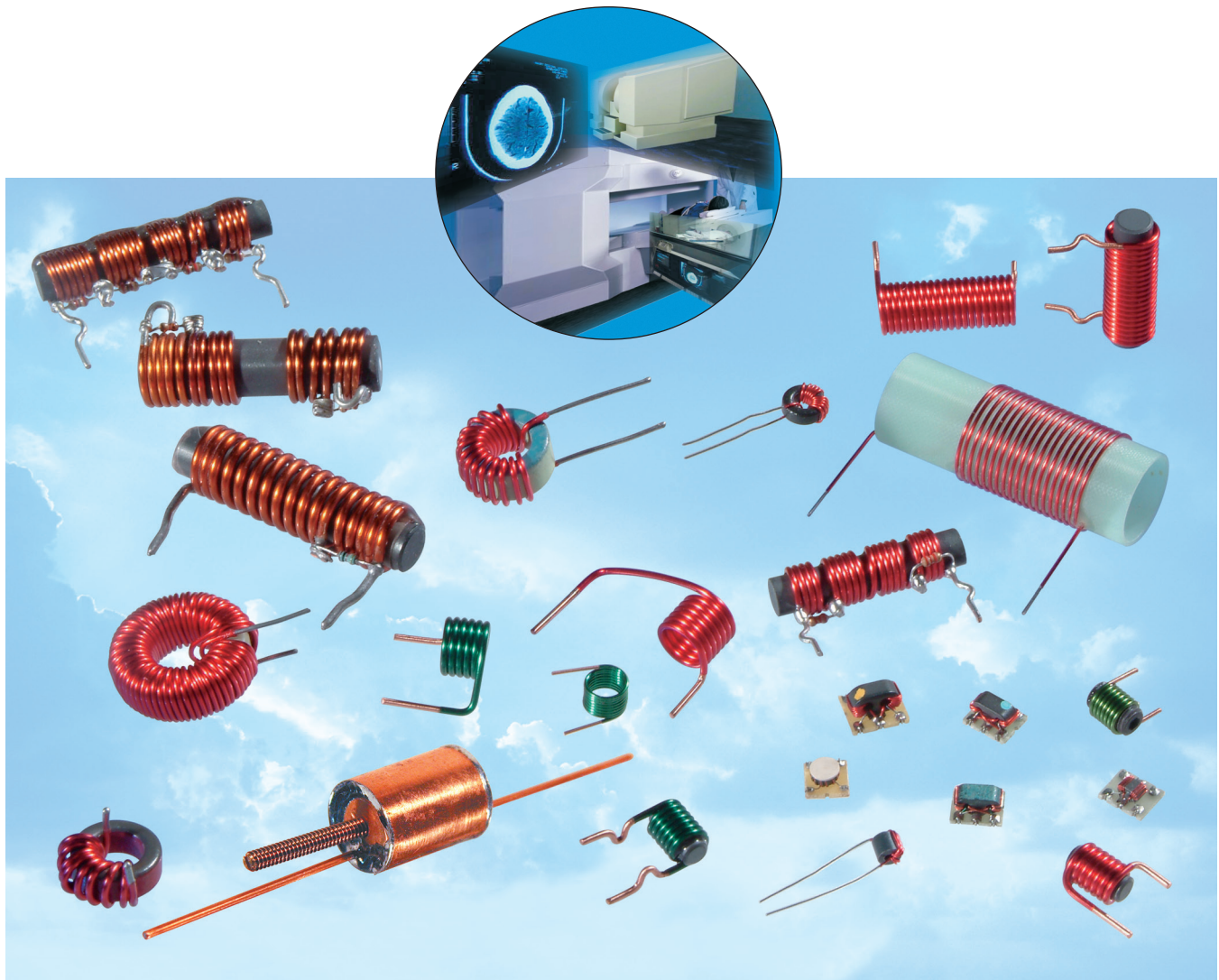
Tolerance Codes

A	± .05pF
B	± .1pF
C	± .25pF
D	± .5pF
F	± 1%
G	± 2%
J	± 5%
K	± 10%

CAP CODE	CAP (pF)	5 Series 0505	11 Series 1111	25 Series 2225	38 Series 3838
0R1	0.1				
1R0	1				
2R0	2				
2R1	2.1				
2R2	2.2				
2R4	2.4				
2R7	2.7				
3R0	3.0				
3R3	3.3				
3R6	3.6				
3R9	3.9				
4R3	4.3				
4R7	4.7				
5R1	5.1				
5R6	5.6				
6R2	6.2				
6R8	6.8				
7R5	7.5				
8R2	8.2				
9R1	9.1				
100	10				
110	11				
120	12				
130	13				
150	15				
160	16				
180	18				
200	20				
220	22				
240	24				
270	27				
300	30				
330	33				
360	36				
390	39				
430	43				
470	47				
510	51				
560	56				
620	62				
680	68				
750	75				
820	82				
910	91				
101	100				
111	110				
121	120				
131	130				
151	150				
161	160				
181	180				
201	200				
221	220				
241	240				
271	270				
301	300				
331	330				
361	360				
391	390				
431	430				
471	470				
511	510				
561	560				
621	620				
681	680				
751	750				
821	820				
911	910				
102	1000				
122	1200				
152	1500				
182	1800				
222	2200				
272	2700				
332	3300				
392	3900				
472	4700				
512	5100				
Reel QTY		3500	2350	500	250

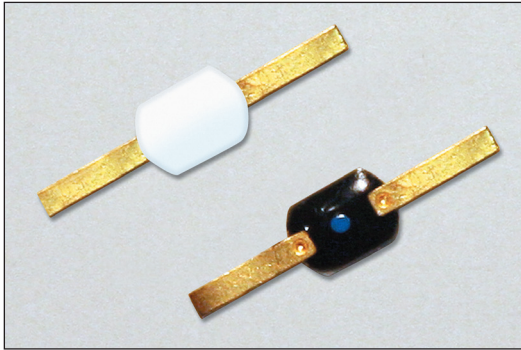
NON-MAGNETIC COILS

To further support our magnetic resonance customers around the world, Voltronics supplies a comprehensive line of totally non-magnetic air coil inductors and potted inductors. In concert with our ISO9001 approved partner, Voltronics can also supply your BALanced UNbalanced transformer coil requirements. We understand that each application is unique. We ask that you provide us with your drawings or samples of your coils and we will provide a quote and samples in two weeks. When your application requires high performance non-magnetic components, think first of Voltronics.



Consult Factory for Specific Requirements

NON-MAGNETIC DIODES



In support of our magnetic resonance customers around the world, Voltronics now offers a comprehensive line of non-magnetic diodes. With our ISO9001 approved partner, Voltronics wants to be your diode design partner for your future unique needs and your reliable supplier of your current requirements. Our comprehensive capabilities include PIN diodes, dual diodes, Schottky diodes, and more. When your application requires high performance non-magnetic components, think first of Voltronics.

RF Actuated Diode Switch

The MX51363-145 is designed to be used as a surface coil blocking network. The part consists of four step recovery diodes, connected as two anti parallel pairs.

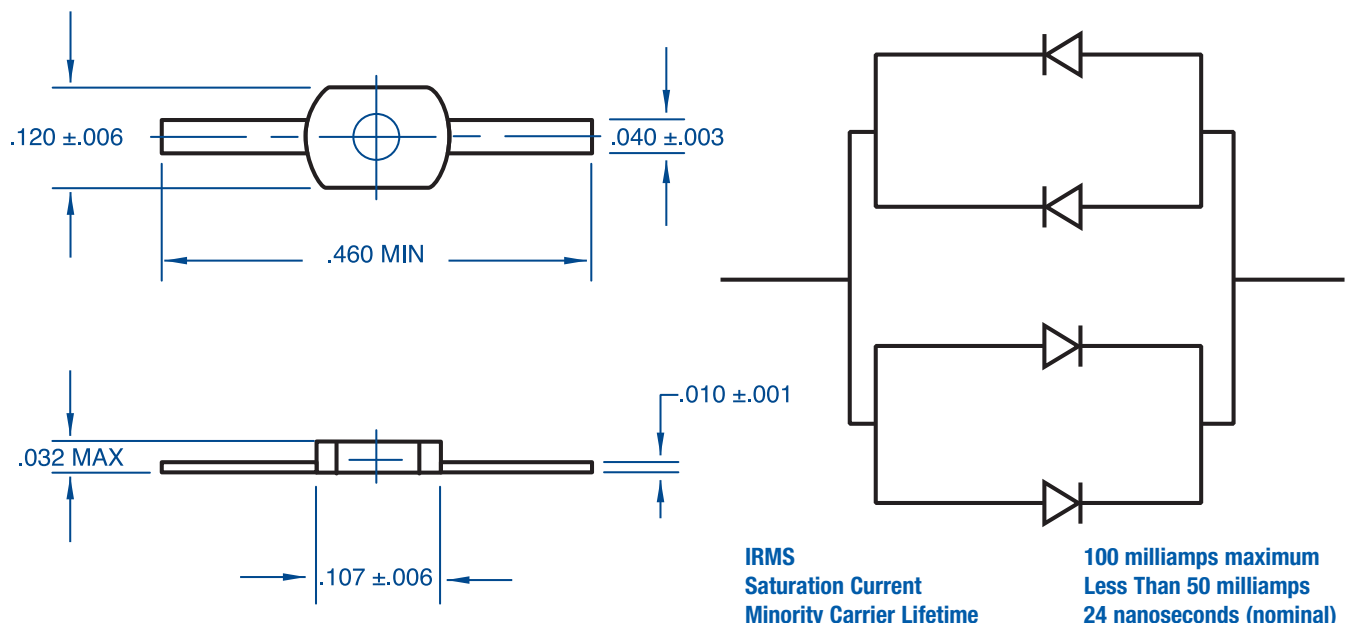
Specifications:

Total junction capacitance plus package capacitance, measured with an RF source voltage less than or equal to 71 mV RMS at 50 MHz and no DC bias, shall not exceed 3.5pF.

Q equal to or greater than 1,000.

Thermal resistance not to exceed 60 °C / Watt

Maximum junction operating temperature shall be 125°C



NON-MAGNETIC HARDWARE



Due to the severe non-magnetism requirements in the magnetic resonance industries, we use only high purity metals that exhibit no measurable magnetism. Commercial brass is simply not acceptable for these applications. Our strict traceability and testing regimes insure this essential parameter.

We can offer sizes, styles, and lengths beyond those shown in the tables on these pages – such as Cheese Head, Round Head, and set screws. We also offer flat washers to complete your needs.

PAN HEAD	
Voltronics	Length
P/N	2-56
48-109	5/64"
48-107	3/32"
48-105	3/16"
48-100	1/25"
48-106	5/16"
48-101	3/8"
48-102	1/2"
48-101	5/8"
48-104	3/4"
48-108	1"
48-500	Hex Nut

PAN HEAD		4-40
48-115	3/16"	
48-110	1/4"	
48-116	5/16"	
48-111	3/8"	
48-112	1/2"	
48-117	5/8"	
48-113	3/4"	
48-114	1"	
48-118	2"	
48-501	Hex Nut	

PAN HEAD		10-32
48-140	1/4"	
48-141	3/8"	
48-142	1/2"	
48-143	5/8"	
48-144	3/4"	
48-145	1"	
48-505	Hex Nut	

PAN HEAD		M2.5 x .45
48-310	8	
48-601	Hex Nut	

PAN HEAD		M4 x .7
48-330	8	
48-331	10	
48-332	12	
48-333	16	
48-334	20	
48-335	25	
48-603	Hex Nut	

PAN HEAD – Metric		
Voltronics	Length (mm)	
P/N	M2 x .4	
48-300	6	
48-301	12	
48-302	16	
48-600	Hex Nut	

PAN HEAD		8-32
48-130	1/4"	
48-131	3/8"	
48-132	1/2"	
48-133	3/4"	
48-503	Hex Nut	

PAN HEAD		6-32
48-120	1/4"	
48-124	3/16"	
48-121	3/8"	
48-122	1/2"	
48-123	3/4"	
48-125	1"	
48-502	Hex Nut	

PAN HEAD		1/4-20
48-150	3/8"	
48-152	1/2"	
48-151	1"	
48-153	1-1/4"	
48-506	Hex Nut	

PAN HEAD		M3 x .5
48-320	5	
48-321	6	
48-322	7.5	
48-323	8	
48-324	10	
48-325	12	
48-326	16	
48-327	20	
48-602	Hex Nut	

PAN HEAD		M5 x .8
48-340	8	
48-341	10	
48-342	12	
48-343	16	
48-344	20	
48-345	25	
48-604	Hex Nut	

Every NMR and MRI Environment
Depends on Non-Magnetic Materials

**Voltronics Guarantees Totally Non-Magnetic Materials,
Delivered on Time, Everytime!**

NON-MAGNETIC HARDWARE



FLAT HEAD	4-40
48-210	1/4"
48-216	5/16"
48-211	3/8"
48-212	1/2"
48-213	3/4"
48-214	1"
48-215	1-1/4"
48-501	Hex Nut

FLAT HEAD	8-32
48-230	3/8"
48-231	1/2"
48-232	5/8"
48-233	3/4"
48-503	Hex Nut

FLAT HEAD – Metric	
Voltronics	Length (mm)
P/N	M2 x .4
48-400	5
48-401	10
48-600	Hex Nut

FLAT HEAD	M4 x .7
48-420	8
48-421	10
48-422	12
48-423	16
48-424	20
48-603	Hex Nut

FLAT HEAD	
Voltronics	Length
P/N	2-56
48-205	9/64"
48-203	3/16"
48-200	1/4"
48-204	3/8"
48-201	1/2"
48-202	1"
48-500	Hex Nut

FLAT HEAD	6-32
48-220	1/4"
48-221	3/8"
48-228	7/16"
48-222	1/2"
48-223	3/4"
48-224	1"
48-225	1-1/4"
48-229	1-3/8"
48-226	1-1/2"
48-227	1-3/4"
48-502	Hex Nut

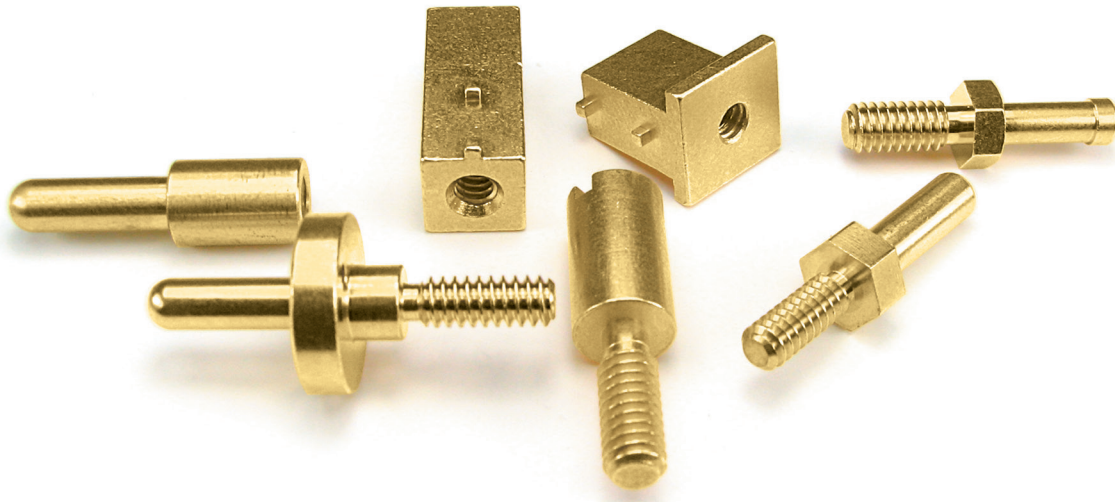
FLAT HEAD	10-32
48-240	3/8"
48-241	1/2"
48-242	5/8"
48-243	3/4"
48-244	1"
48-245	1-1/4"
48-505	Hex Nut

FLAT HEAD	M3 x .5
48-415	6
48-410	8
48-411	10
48-412	12
48-413	16
48-414	20
48-602	Hex Nut

FLAT HEAD	M5 x .8
48-430	8
48-431	10
48-432	12
48-433	16
48-434	20
48-435	25
48-604	Hex Nut

FLAT HEAD	1/4-20
48-250	3/4"
48-506	Hex Nut

Coils also require inserts, pins, and other special shapes that are custom-designed to satisfy the specific requirements of the coil designer. The ability to quickly and precisely supply custom designs is part of our heritage and we are eager to sample our high quality hardware based on your requirements. As with the screws, washers, and nuts on this and the preceding page, we use only high purity metals that exhibit no measurable magnetism.



X-ON Electronics

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