

**2009**  
**DESIGN**  
**ENGINEERING KITS**  
CATALOG NO. G-06-F



Please visit our website:  
[www.murata.com](http://www.murata.com)

Murata offers a complete selection of Design Engineering Kits specifically intended to aid the design engineer in prototyping applications. Each kit contains a wide selection of commonly used values and sizes that meet a variety of circuit design requirements.

For additional information on the kits contained in this catalog, please contact your local Murata Sales Representative. Visit “contact us” at [www.murata-northamerica.com](http://www.murata-northamerica.com) for representative locations.



## Available Kits

- **General Ceramic Chip Capacitors**
- **ASCap Hi-Frequency Ceramic Chip Capacitors**
- **Low Inductance Capacitors**
- **Capacitor Arrays**
- **Automotive Grade Ceramic Chip Capacitors**
- **Radial Leaded Monolithic Ceramic Chip Capacitors**
- **Medium Voltage Ceramic Chip Capacitors**
- **Radial Leaded Medium Voltage Disc Capacitors**
- **Ceramic Chip Safety Capacitors**
- **Radial Leaded Disc Safety Capacitors**
- **HPP Capacitor Kits**
- **Microwave Coaxial Connectors**
- **EMI Filter Kits**
- **Chip Inductor Kits**
- **Chip Thermistor Kits**
- **Variable Trimmer Capacitor Kits**
- **Variable Potentiometer Kits**

# DESIGN ENGINEERING KITS TABLE OF CONTENTS



A. 7-3/4x5  
Blue Binder with Sleeves



B. 8x4x1  
Blue Binder with Sleeves



C. Soft Plastic Case



D. 5x2x3/4  
Hard Plastic Box



E. 4-3/4x4-3/4x3/4  
Hard Plastic Box

Kit Part Number	Size	Description	Package Style	Style Code	Page
<b>General Ceramic Chip Capacitors</b>					
GRM02-KIT- - - - - E	01005	(6.3 to 16 VDC)	7-3/4x5 blue binder with sleeves	A	5
GRM03-KIT- - - - - E	0201	(4 to 25 VDC)	7-3/4x5 blue binder with sleeves	A	5
GJM03-KIT- - - - - E	0201	(6.3 to 25 VDC)	7-3/4x5 blue binder with sleeves	A	6
GJM03-KIT-TTOL- - - E	0201	(6.3 to 25 VDC)	7-3/4x5 blue binder with sleeves	A	6
GJM15-KIT- - - - - E	0402	(50 VDC)	7-3/4x5 blue binder with sleeves	A	7
GJM15-KIT-TTOL- - - E	0402	(50 VDC)	7-3/4x5 blue binder with sleeves	A	7
GRM15-KIT- - - - - E	0402	(6.3 to 50 VDC)	7-3/4x5 blue binder with sleeves	A	8
GRM18-KIT- - - - - E	0603	(6.3 to 50 VDC)	7-3/4x5 blue binder with sleeves	A	9
GRM- - - KIT-HICAP- - E	0402-1210	(6.3 to 50 VDC) 1 - 100µF	7-3/4x5 blue binder with sleeves	A	10
GRM- - - KIT-TCHIK- - E	0402-1210	(6.3 to 50 VDC) 150pF - 22µF	7-3/4x5 blue binder with sleeves	A	11
GRM- - - KIT-TC- - - - E	0402-1206	(25 to 50 VDC) C0G/U2J	7-3/4x5 blue binder with sleeves	A	12
<b>ASCap Hi-Frequency Ceramic Chip Capacitors</b>					
GJM03-KIT- - - - - E	0201	(6.3 to 25 VDC)	7-3/4x5 blue binder with sleeves	A	6
GJM03-KIT-TTOL- - - E	0201	(6.3 to 25 VDC)	7-3/4x5 blue binder with sleeves	A	6
GJM15-KIT- - - - - E	0402	(50 VDC)	7-3/4x5 blue binder with sleeves	A	7
GJM15-KIT-TTOL- - - E	0402	(50 VDC)	7-3/4x5 blue binder with sleeves	A	7
GQM18-HIQ0603KIT- E	0603	Hi-Q (50 to 100 VDC)	7-3/4x5 blue binder with sleeves	A	13
GQM18-HIQ250VKIT- E	0603	Hi-Q (250 VDC)	7-3/4x5 blue binder with sleeves	A	13
GQM21-HIQ0805KIT- E	0805	Hi-Q (50 to 100 VDC)	7-3/4x5 blue binder with sleeves	A	14
ERB18-HIQ0603KIT- E	0603	Hi-Q (250 VDC)	7-3/4x5 blue binder with sleeves	A	15
ERB21-HIQ0805KIT- E	0805	Hi-Q (250 VDC)	7-3/4x5 blue binder with sleeves	A	15
ERB32-HIQ1210KIT- E	1210	Hi-Q (500 VDC)	7-3/4x5 blue binder with sleeves	A	15
MA19-HIQ0505KIT- E	0505	Hi-Q (150 VDC)	7-3/4x5 blue binder with sleeves	A	16
MA29-HIQ1111KIT- E	1111	Hi-Q (50 to 500 VDC)	7-3/4x5 blue binder with sleeves	A	16
MA59-HIQ0505KIT- E	0505	Hi-Q (150 VDC)	7-3/4x5 blue binder with sleeves	A	17
MA69-HIQ1111KIT- E	1111	Hi-Q (50 to 500 VDC)	7-3/4x5 blue binder with sleeves	A	17
<b>Low Inductance Capacitors</b>					
LL-LOWESL-KIT-B- - E	0402-1206	Low ESL (4 to 50 VDC)	7-3/4x5 blue binder with sleeves	A	18
<b>Capacitor Arrays</b>					
GNM-CARRAY-KIT-B- E	0504-1206	Cap Array (10 to 50 VDC)	7-3/4x5 blue binder with sleeves	A	19
<b>Automotive Grade Ceramic Chip Capacitors</b>					
GCM15-KIT- - - - - A	0402	(16 to 50 VDC)	7-3/4x5 blue binder with sleeves	A	20
GCM- - - KIT-C0G- - - A	0603-1206	(50 VDC) C0G, 1pF - .022µF	7-3/4x5 blue binder with sleeves	A	21
GCM- - - KIT-X7R- - - A	0603-1206	(10 to 50 VDC) 1000pF - 22µF	7-3/4x5 blue binder with sleeves	A	22
GCM- - - KIT-100V- - - A	0603-1206	(100 VDC) C0G, X7R 10pF - .22µF	7-3/4x5 blue binder with sleeves	A	23
<b>Radial Leaded Monolithic Ceramic Chip Capacitors (50 to 630 VDC)*</b>					
RPE 100 VDC & less Series			7-3/4x5 green binder with sleeves	A	24
RPE 250 & 630 VDC Series			7-3/4x5 green binder with sleeves	A	24
<b>Medium Voltage Ceramic Chip Capacitors (250 VDC to 3.15 KV)*</b>					
U2J, 250V, 630V, 1KV, 2KV, 3.15KV Series					24
X7R, 250V, 630V Series					24
GR4, X7R, 2KV Series					24
<b>Radial Leaded Medium Voltage Disc Capacitor (500 VDC to 6.3 KV)*</b>					
DE Series		General Use	Custom Packaging		24
<b>Monolithic Ceramic Chip Safety Capacitor (250 VAC)*</b>					
GD Series	1808-2220	Class Y3	Custom Packaging		25
GF Series	1808-2220	Class Y2, X1/Y2	Custom Packaging		25
<b>Radial Leaded Disc Safety Capacitor (250 VDC)*</b>					
KX Series		Reinforced Insulation, Class X1, Y1	Custom Packaging		25
KY Series		Basic Insulation, Class X1, Y2	Custom Packaging		25
<b>HPP Capacitors Kits</b>					
HPPB5 Series	4642	Nonmagnetic SMD Capacitors			26
HPPAH Series	2622	Nonmagnetic SMD Capacitors			26

\*Note: For availability, please check with your Murata Sales Contact. Part Numbers in kits depend on application.

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

Kit Part Number	Size	Description	Package Style	Style Code	Page
<b>Microwave Connector Engineering Kits</b>					
M1KMM8130-SWF01	2.5x2.5x1.4mm	SWF Series Switch Connector	Hard plastic box	E	27
M1KMM8430-SWD01	3.3x3.0x1.75mm	SWD Series Switch Connector	Hard plastic box	E	27
M1KMM4829-HSC01	2.0x2.0x0.6mm	HSC Series Ultra Small Cable Connector	Hard plastic box	E	27
<b>EMI Filter Kits</b>					
EKEMBL03D	01005, 0201	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	28
EKEMBL15J	0402	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	28
EKEMBL18G	0603	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	28
EKEMBL8GA	0603	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	29
EKEMBL21D	0805, 1206, 1806	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	29
EKEMNFMCB	0603, 0805	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	29
EKEMFA31D	1206	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	29
EKEMFL18E	0603, 0805, 1206	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	30
EKEMFA20E	0805	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	30
EKEMNFMFH	0603, 0805, 1206, 1806	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	30
EKEMDL21J	0805, 1206	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	30
EKEMDCC5B	5.0x5.0mm, 5.0x3.6mm	Surface Mount EMI Filters	8x4x1 blue binder with sleeves	B	30
<b>Chip Inductor Kits</b>					
EKLMQ15SC	0402	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	31
EKLMQG18B	0603	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	31
EKLMQP02B	01005	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	31
EKLMQP03J	0201	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	32
EKLMQP15B	0402	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	32
EKLMQW04C	03015	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	32
EKLMQW15H	0402	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	33
EKLMQ18GB	0603	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	33
EKLMQ18JB	0603	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	33
EKLMQW21A	0805	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	34
EKLMQW22B	0805	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	34
EKLMQM18B	0603	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	34
EKLMM21NB	0805	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	34
EKLMH32MC	1210	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	34
EKLMH43MB	1812	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	35
EKLMQ2PC	0805, 0806, 1008, 1206	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	35
EKLMH2MCE	0806	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	35
EKLMQH3PA	1210, 1212	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	36
EKLMM18FB	0603, 0805	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	36
EKLMH32CC	1210	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	36
EKLMM43CC	1812	Surface Mount Inductors	8x4x1 blue binder with sleeves	B	36
<b>Chip Thermistor Kits</b>					
NCK1T001	0201, 0402	Chip Thermistors	Soft plastic box	C	37
NCK1T002	0603	Chip Thermistors	Soft plastic box	C	37
NCK1T003	0201, 0402, 0603	Chip Thermistors	Soft plastic box	C	37
NCK1T0S1	0402, 0603	Chip Thermistors	Soft plastic box	C	37
PRK1T001	0603, 0805	Chip Thermistors	Soft plastic box	C	38
PRK1T0S1	0603, 0805	Chip Thermistors	Soft plastic box	C	38
NCPRK1T001	0402, 0603, 0805	Chip Thermistors	Soft plastic box	C	38
<b>Variable Trimmer Capacitor Kits</b>					
TZ03KT□1	3mm	Leaded Trimmer Capacitor	Hard plastic box	D	39
TZB4KT□□	4mm	Chip Trimmer Capacitor	Hard plastic box	D	39
TZC3KT11	3mm	Low profile Chip Trimmer Capacitor	Hard plastic box	D	39
TZV2KT01	2mm	Ultra small SMD trimmer capacitor	Hard plastic box	D	39
TZY2KT01	2mm	Ultra small SMD trimmer capacitor	Hard plastic box	D	39
TZS2KT01	2mm	Ultra small SMD trimmer capacitor	Hard plastic box	D	39
TZR1KT01	1mm	Ultra small SMD trimmer capacitor	Hard plastic box	D	39
<b>Variable Potentiometer Kits</b>					
PVZ3KTA1	3mm	Single turn 3.0mm package	Soft plastic box	C	40
PVZ3KTK1	3mm	Single turn 3.0mm package	Soft plastic box	C	40
PVZ2KTA1	2mm	Single turn 2.0mm package	Soft plastic box	C	40
PVZ3KTG1	3mm	Single turn 3.0mm package	Soft plastic box	C	40
PVAZKTO1	2mm	Single turn 2.0mm package	Soft plastic box	C	40
PVG5KTA1	5mm	Single turn 5.0mm package	Soft plastic box	C	40
PVG5KTH1	5mm	Single turn 5.0mm package	Soft plastic box	C	40
PVG3KTA1	3mm	Single turn 3.00mm gullwing leaded pkg.	Soft plastic box	C	40
PVG3KTG1	3mm	Single turn 3.0mm J lead pkg.	Soft plastic box	C	41
PVM4KTC1	4mm	Single turn 4.0mm package	Soft plastic box	C	41
PVM4KTD1	4mm	Single turn 4.0mm package	Soft plastic box	C	41

# GENERAL CERAMIC CHIP CAPACITORS

## 01005 (6.3 to 16 VDC)

- ULTRA Small chip size, 01005 (L: 0.4 x W: 0.2 x T: 0.2mm).
- Temperature characteristics: C0G, X7R and X5R
- No polarity
- GRM022 series is suited to only reflow soldering.
- GRM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- Stringent dimensional tolerances allow highly reliable, high-speed automatic chip placement on PCBs.
- GRM022 series is suited to miniature microwave module, portable equipment and high-frequency circuit.

### GRM02-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	01005/C0G/0.20pF/16V	GRM0225C1CR20BD05	40
2	01005/C0G/0.30pF/16V	GRM0225C1CR30BD05	40
3	01005/C0G/0.40pF/16V	GRM0225C1CR40BD05	40
4	01005/C0G/0.50pF/16V	GRM0225C1CR50BD05	40
5	01005/C0G/0.60pF/16V	GRM0225C1CR60BD05	40
6	01005/C0G/0.70pF/16V	GRM0225C1CR70BD05	40
7	01005/C0G/0.80pF/16V	GRM0225C1CR80BD05	40
8	01005/C0G/0.90pF/16V	GRM0225C1CR90BD05	40
9	01005/C0G/1.0pF/16V	GRM0225C1C1R0CD05	40
10	01005/C0G/1.2pF/16V	GRM0225C1C1R2CD05	40
11	01005/C0G/1.5pF/16V	GRM0225C1C1R5CD05	40
12	01005/C0G/1.8pF/16V	GRM0225C1C1R8CD05	40
13	01005/C0G/2.0pF/16V	GRM0225C1C2R0CD05	40
14	01005/C0G/2.2pF/16V	GRM0225C1C2R2CD05	40
15	01005/C0G/2.7pF/16V	GRM0225C1C2R7CD05	40
16	01005/C0G/3.0pF/16V	GRM0225C1C3R0CD05	40
17	01005/C0G/3.3pF/16V	GRM0225C1C3R3CD05	40
18	01005/C0G/3.9pF/16V	GRM0225C1C3R9CD05	40
19	01005/C0G/4.0pF/16V	GRM0225C1C4R0CD05	40
20	01005/C0G/4.7pF/16V	GRM0225C1C4R7CD05	40
21	01005/C0G/5.0pF/16V	GRM0225C1C5R0CD05	40
22	01005/C0G/5.6pF/16V	GRM0225C1C5R6DD05	40
23	01005/C0G/6.0pF/16V	GRM0225C1C6R0DD05	40
24	01005/C0G/6.8pF/16V	GRM0225C1C6R8DD05	40
25	01005/C0G/7.0pF/16V	GRM0225C1C7R0DD05	40
26	01005/C0G/8.0pF/16V	GRM0225C1C8R0DD05	40
27	01005/C0G/8.2pF/16V	GRM0225C1C8R2DD05	40
28	01005/C0G/9.0pF/16V	GRM0225C1C9R0DD05	40
29	01005/C0G/10pF/16V	GRM0225C1C100JD05	40
30	01005/C0G/12pF/16V	GRM0225C1C120JD05	40
31	01005/C0G/15pF/16V	GRM0225C1C150JD05	40
32	01005/C0G/18pF/16V	GRM0225C1C180JD05	40
33	01005/C0G/22pF/16V	GRM0225C1C220JD05	40
34	01005/C0G/27pF/16V	GRM0225C1C270JD05	40
35	01005/C0G/33pF/16V	GRM0225C1C330JD05	40
36	01005/C0G/39pF/16V	GRM0225C1C390JD05	40
37	01005/C0G/47pF/16V	GRM0225C1C470JD05	40
38	01005/C0G/56pF/6.3V	GRM0225C0J560JD05	40
39	01005/C0G/68pF/6.3V	GRM0225C0J680JD05	40
40	01005/C0G/82pF/6.3V	GRM0225C0J820JD05	40
41	01005/C0G/100pF/6.3V	GRM0225C0J101JD05	40
42	01005/X7R/101pF/10V	GRM022R71A101KA01	40
43	01005/X7R/151pF/10V	GRM022R71A151KA01	40
44	01005/X7R/221pF/10V	GRM022R71A221KA01	40
45	01005/X7R/331pF/10V	GRM022R71A331KA01	40
46	01005/X7R/471pF/10V	GRM022R71A471KA01	40
47	01005/X5R/680pF/6.3V	GRM022R60J681KE19	40
48	01005/X5R/1000pF/6.3V	GRM022R60J102KE19	40
49	01005/X5R/1500pF/6.3V	GRM022R60J152KE19	40
50	01005/X5R/2200pF/6.3V	GRM022R60J222KE19	40
51	01005/X5R/3300pF/6.3V	GRM022R60J332KE19	40
52	01005/X5R/4700pF/6.3V	GRM022R60J472KE19	40
53	01005/X5R/6800pF/6.3V	GRM022R60J682KE19	40
54	01005/X5R/10000pF/6.3V	GRM022R60J103KE19	40

## 0201 (4 to 25 VDC)

- VERY Small chip size, 0201 (L: 0.6 x W: 0.3 x T: 0.3mm).
- Temperature characteristics: C0G, U2J, X7R, X6S and X5R
- No polarity
- GRM033 series is suited to only reflow soldering.
- GRM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- Stringent dimensional tolerances allow highly reliable, high-speed automatic chip placement on PCBs.
- GRM033 series is suited to miniature microwave module, portable equipment and high-frequency circuit.

### GRM03-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	0201/C0G/0.50pF/25V	GRM0335C1ER50BZ01	40
2	0201/C0G/1.0pF/25V	GRM0335C1E1R0CD01	40
3	0201/C0G/1.2pF/25V	GRM0335C1E1R2CD01	40
4	0201/C0G/1.5pF/25V	GRM0335C1E1R5CD01	40
5	0201/C0G/1.8pF/25V	GRM0335C1E1R8CD01	40
6	0201/C0G/2.0pF/25V	GRM0335C1E2R0CD01	40
7	0201/C0G/2.2pF/25V	GRM0335C1E2R2CD01	40
8	0201/C0G/2.7pF/25V	GRM0335C1E2R7CD01	40
9	0201/C0G/3.0pF/25V	GRM0335C1E3R0CD01	40
10	0201/C0G/3.3pF/25V	GRM0335C1E3R3CD01	40
11	0201/C0G/3.9pF/25V	GRM0335C1E3R9CD01	40
12	0201/C0G/4.0pF/25V	GRM0335C1E4R0CD01	40
13	0201/C0G/4.7pF/25V	GRM0335C1E4R7CD01	40
14	0201/C0G/5.0pF/25V	GRM0335C1E5R0CD01	40
15	0201/C0G/5.6pF/25V	GRM0335C1E5R6DD01	40
16	0201/C0G/6.0pF/25V	GRM0335C1E6R0DD01	40
17	0201/C0G/6.8pF/25V	GRM0335C1E6R8DD01	40
18	0201/C0G/7.0pF/25V	GRM0335C1E7R0DD01	40
19	0201/C0G/8.0pF/25V	GRM0335C1E8R0DD01	40
20	0201/C0G/8.2pF/25V	GRM0335C1E8R2DD01	40
21	0201/C0G/9.0pF/25V	GRM0335C1E9R0DD01	40
22	0201/C0G/10pF/25V	GRM0335C1E100JD01	40
23	0201/C0G/12pF/25V	GRM0335C1E120JD01	40
24	0201/C0G/15pF/25V	GRM0335C1E150JD01	40
25	0201/C0G/18pF/25V	GRM0335C1E180JD01	40
26	0201/C0G/22pF/25V	GRM0335C1E220JD01	40
27	0201/C0G/27pF/25V	GRM0335C1E270JD01	40
28	0201/C0G/33pF/25V	GRM0335C1E330JD01	40
29	0201/C0G/39pF/25V	GRM0335C1E390JD01	40
30	0201/C0G/47pF/25V	GRM0335C1E470JD01	40
31	0201/C0G/56pF/25V	GRM0335C1E560JD01	40
32	0201/C0G/68pF/25V	GRM0335C1E680JD01	40
33	0201/C0G/82pF/25V	GRM0335C1E820JD01	40
34	0201/C0G/100pF/25V	GRM0335C1E101JD01	40
35	0201/X7R/100pF/25V	GRM033R71E101KA01	40
36	0201/X7R/150pF/25V	GRM033R71E151KA01	40
37	0201/X7R/220pF/25V	GRM033R71E221KA01	40
38	0201/X7R/330pF/25V	GRM033R71E331KA01	40
39	0201/X7R/470pF/25V	GRM033R71E471KA01	40
40	0201/X7R/680pF/25V	GRM033R71E681KA01	40
41	0201/X7R/1000pF/25V	GRM033R71E102KA01	40
42	0201/X5R/1500pF/10V	GRM033R61A152KA01	40
43	0201/X5R/2200pF/10V	GRM033R61A222KA01	40
44	0201/X5R/3300pF/10V	GRM033R61A332KA01	40
45	0201/X5R/4700pF/10V	GRM033R61A472KA01	40
46	0201/X5R/6800pF/10V	GRM033R61A682KA01	40
47	0201/X5R/10000pF/10V	GRM033R61A103KA01	40
48	0201/X5R/22000pF/6.3V	GRM033R60J223KE01	40
49	0201/X5R/33000pF/6.3V	GRM033R60J333KE01	40
50	0201/X5R/47000pF/6.3V	GRM033R60J473KE19	40
51	0201/X5R/0.1uF/6.3V	GRM033R60J104KE19	40
52	0201/X5R/0.22uF/4V	GRM033R60J224ME15	40

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

DESIGN ENGINEERING KITS

# GENERAL CERAMIC CHIP CAPACITORS

## 0201 (6.3 to 25 VDC)

- Better Q and low ESR at VHF, UHF and microwave frequencies.
- 0201 and 0402 sizes with Copper inner electrode.
- Tight tolerance available.  
[W] = +/-0.05pF for 5pF & under [B] = +/-0.1pF for under 10pF  
[C] = +/-0.25pF for under 10pF  
[F] = +/-1% for 10pF & over [G] = +/-2% for 10pF & over
- Low power consumption, yield ratio improvement due to the better Q or lower ESR.
- GJM series is suited to VCO or PA module applications.
- GJM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.

## 0201 (6.3 to 25 VDC)

- Better Q and low ESR at VHF, UHF and microwave frequencies.
- 0201 and 0402 sizes with Copper inner electrode.
- Tight tolerance available.  
[W] = +/-0.05pF for 5pF & under [B] = +/-0.1pF for under 10pF  
[C] = +/-0.25pF for under 10pF  
[F] = +/-1% for 10pF & over [G] = +/-2% for 10pF & over
- Low power consumption, yield ratio improvement due to the better Q or lower ESR.
- GJM series is suited to VCO or PA module applications.
- GJM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.

### GJM03-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	0201/C0G/0.20pF/25V	GJM0335C1ER20BB01	40
2	0201/C0G/0.30pF/25V	GJM0335C1ER30BB01	40
3	0201/C0G/0.40pF/25V	GJM0335C1ER40BB01	40
4	0201/C0G/0.50pF/25V	GJM0335C1ER50BB01	40
5	0201/C0G/0.60pF/25V	GJM0335C1ER60BB01	40
6	0201/C0G/0.70pF/25V	GJM0335C1ER70BB01	40
7	0201/C0G/0.80pF/25V	GJM0335C1ER80BB01	40
8	0201/C0G/0.90pF/25V	GJM0335C1ER90BB01	40
9	0201/C0G/1.0pF/25V	GJM0335C1E1R0CB01	40
10	0201/C0G/1.1pF/25V	GJM0335C1E1R1CB01	40
11	0201/C0G/1.2pF/25V	GJM0335C1E1R2CB01	40
12	0201/C0G/1.3pF/25V	GJM0335C1E1R3CB01	40
13	0201/C0G/1.5pF/25V	GJM0335C1E1R5CB01	40
14	0201/C0G/1.6pF/25V	GJM0335C1E1R6CB01	40
15	0201/C0G/1.8pF/25V	GJM0335C1E1R8CB01	40
16	0201/C0G/2.0pF/25V	GJM0335C1E2R0CB01	40
17	0201/C0G/2.2pF/25V	GJM0335C1E2R2CB01	40
18	0201/C0G/2.4pF/25V	GJM0335C1E2R4CB01	40
19	0201/C0G/2.7pF/25V	GJM0335C1E2R7CB01	40
20	0201/C0G/3.0pF/25V	GJM0335C1E3R0CB01	40
21	0201/C0G/3.3pF/25V	GJM0335C1E3R3CB01	40
22	0201/C0G/3.6pF/25V	GJM0335C1E3R6CB01	40
23	0201/C0G/3.9pF/25V	GJM0335C1E3R9CB01	40
24	0201/C0G/4.0pF/25V	GJM0335C1E4R0CB01	40
25	0201/C0G/4.3pF/25V	GJM0335C1E4R3CB01	40
26	0201/C0G/4.7pF/25V	GJM0335C1E4R7CB01	40
27	0201/C0G/5.0pF/25V	GJM0335C1E5R0CB01	40
28	0201/C0G/5.1pF/25V	GJM0335C1E5R1DB01	40
29	0201/C0G/5.6pF/25V	GJM0335C1E5R6DB01	40
30	0201/C0G/6.0pF/25V	GJM0335C1E6R0DB01	40
31	0201/C0G/6.2pF/25V	GJM0335C1E6R2DB01	40
32	0201/C0G/6.8pF/25V	GJM0335C1E6R8DB01	40
33	0201/C0H/7.0pF/25V	GJM0336C1E7R0DB01	40
34	0201/C0H/7.5pF/25V	GJM0336C1E7R5DB01	40
35	0201/C0H/8.0pF/25V	GJM0336C1E8R0DB01	40
36	0201/C0H/8.2pF/25V	GJM0336C1E8R2DB01	40
37	0201/C0H/9.0pF/25V	GJM0336C1E9R0DB01	40
38	0201/C0H/9.1pF/25V	GJM0336C1E9R1DB01	40
39	0201/C0H/10pF/25V	GJM0336C1E100JB01	40
40	0201/C0H/12pF/25V	GJM0336C1E120JB01	40
41	0201/C0H/15pF/25V	GJM0336C1E150JB01	40
42	0201/C0H/18pF/25V	GJM0336C1E180JB01	40
43	0201/C0H/20pF/25V	GJM0336C1E200JB01	40
44	0201/C0G/22pF/6.3V	GJM0335C0J220JB01	40
45	0201/C0G/27pF/6.3V	GJM0335C0J270JB01	40
46	0201/C0G/33pF/6.3V	GJM0335C0J330JB01	40

### GJM03-KIT-TTOL---E

No.	Description	Murata Global P/N	Qty.
1	0201/C0G/0.20pF/25V	GJM0335C1ER20WB01	40
2	0201/C0G/0.30pF/25V	GJM0335C1ER30WB01	40
3	0201/C0G/0.40pF/25V	GJM0335C1ER40WB01	40
4	0201/C0G/0.50pF/25V	GJM0335C1ER50WB01	40
5	0201/C0G/0.60pF/25V	GJM0335C1ER60WB01	40
6	0201/C0G/0.70pF/25V	GJM0335C1ER70WB01	40
7	0201/C0G/0.80pF/25V	GJM0335C1ER80WB01	40
8	0201/C0G/0.90pF/25V	GJM0335C1ER90WB01	40
9	0201/C0G/1.0pF/25V	GJM0335C1E1R0BB01	40
10	0201/C0G/1.1pF/25V	GJM0335C1E1R1BB01	40
11	0201/C0G/1.2pF/25V	GJM0335C1E1R2BB01	40
12	0201/C0G/1.3pF/25V	GJM0335C1E1R3BB01	40
13	0201/C0G/1.5pF/25V	GJM0335C1E1R5BB01	40
14	0201/C0G/1.6pF/25V	GJM0335C1E1R6BB01	40
15	0201/C0G/1.8pF/25V	GJM0335C1E1R8BB01	40
16	0201/C0G/2.0pF/25V	GJM0335C1E2R0BB01	40
17	0201/C0G/2.2pF/25V	GJM0335C1E2R2BB01	40
18	0201/C0G/2.4pF/25V	GJM0335C1E2R4BB01	40
19	0201/C0G/2.7pF/25V	GJM0335C1E2R7BB01	40
20	0201/C0G/3.0pF/25V	GJM0335C1E3R0BB01	40
21	0201/C0G/3.3pF/25V	GJM0335C1E3R3BB01	40
22	0201/C0G/3.6pF/25V	GJM0335C1E3R6BB01	40
23	0201/C0G/3.9pF/25V	GJM0335C1E3R9BB01	40
24	0201/C0G/4.0pF/25V	GJM0335C1E4R0BB01	40
25	0201/C0G/4.3pF/25V	GJM0335C1E4R3BB01	40
26	0201/C0G/4.7pF/25V	GJM0335C1E4R7BB01	40
27	0201/C0G/5.0pF/25V	GJM0335C1E5R0BB01	40
28	0201/C0G/5.1pF/25V	GJM0335C1E5R1CB01	40
29	0201/C0G/5.6pF/25V	GJM0335C1E5R6CB01	40
30	0201/C0G/6.0pF/25V	GJM0335C1E6R0CB01	40
31	0201/C0G/6.2pF/25V	GJM0335C1E6R2CB01	40
32	0201/C0G/6.8pF/25V	GJM0335C1E6R8CB01	40
33	0201/C0H/7.0pF/25V	GJM0336C1E7R0CB01	40
34	0201/C0H/7.5pF/25V	GJM0336C1E7R5CB01	40
35	0201/C0H/8.0pF/25V	GJM0336C1E8R0CB01	40
36	0201/C0H/8.2pF/25V	GJM0336C1E8R2CB01	40
37	0201/C0H/9.0pF/25V	GJM0336C1E9R0CB01	40
38	0201/C0H/9.1pF/25V	GJM0336C1E9R1CB01	40
39	0201/C0H/10pF/25V	GJM0336C1E100GB01	40
40	0201/C0H/12pF/25V	GJM0336C1E120GB01	40
41	0201/C0H/15pF/25V	GJM0336C1E150GB01	40
42	0201/C0H/18pF/25V	GJM0336C1E180GB01	40
43	0201/C0H/20pF/25V	GJM0336C1E200GB01	40
44	0201/C0G/22pF/6.3V	GJM0335C0J220GB01	40
45	0201/C0G/27pF/6.3V	GJM0335C0J270GB01	40
46	0201/C0G/33pF/6.3V	GJM0335C0J330GB01	40

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

# GENERAL CERAMIC CHIP CAPACITORS

## 0402 (50 VDC)

- Better Q and low ESR at VHF, UHF and microwave frequencies.
- 0201 and 0402 sizes with Copper inner electrode.
- Tight tolerance available.  
[W] = +/-0.05pF for 5pF & under [B] = +/-0.1pF for under 10pF  
[C] = +/-0.25pF for under 10pF  
[F] = +/-1% for 10pF & over [G] = +/-2% for 10pF & over
- Low power consumption, yield ratio improvement due to the better Q or lower ESR.
- GJM series is suited to VCO or PA module applications.
- GJM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.

## 0402 (50 VDC)

- Better Q and low ESR at VHF, UHF and microwave frequencies.
- 0201 and 0402 sizes with Copper inner electrode.
- Tight tolerance available.  
[W] = +/-0.05pF for 5pF & under [B] = +/-0.1pF for under 10pF  
[C] = +/-0.25pF for under 10pF  
[F] = +/-1% for 10pF & over [G] = +/-2% for 10pF & over
- Low power consumption, yield ratio improvement due to the better Q or lower ESR.
- GJM series is suited to VCO or PA module applications.
- GJM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.

### GJM15-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/0.10pF/50V	GJM1555C1HR10BB01	40
2	0402/C0G/0.20pF/50V	GJM1555C1HR20BB01	40
3	0402/C0G/0.30pF/50V	GJM1555C1HR30BB01	40
4	0402/C0G/0.40pF/50V	GJM1555C1HR40BB01	40
5	0402/C0G/0.50pF/50V	GJM1555C1HR50BB01	40
6	0402/C0G/0.60pF/50V	GJM1555C1HR60BB01	40
7	0402/C0G/0.70pF/50V	GJM1555C1HR70BB01	40
8	0402/C0G/0.80pF/50V	GJM1555C1HR80BB01	40
9	0402/C0G/0.90pF/50V	GJM1555C1HR90BB01	40
10	0402/C0G/1.0pF/50V	GJM1555C1H1R0CB01	40
11	0402/C0G/1.1pF/50V	GJM1555C1H1R1CB01	40
12	0402/C0G/1.2pF/50V	GJM1555C1H1R2CB01	40
13	0402/C0G/1.3pF/50V	GJM1555C1H1R3CB01	40
14	0402/C0G/1.5pF/50V	GJM1555C1H1R5CB01	40
15	0402/C0G/1.6pF/50V	GJM1555C1H1R6CB01	40
16	0402/C0G/1.8pF/50V	GJM1555C1H1R8CB01	40
17	0402/C0G/2.0pF/50V	GJM1555C1H2R0CB01	40
18	0402/C0G/2.2pF/50V	GJM1555C1H2R2CB01	40
19	0402/C0G/2.4pF/50V	GJM1555C1H2R4CB01	40
20	0402/C0G/2.7pF/50V	GJM1555C1H2R7CB01	40
21	0402/C0G/3.0pF/50V	GJM1555C1H3R0CB01	40
22	0402/C0G/3.3pF/50V	GJM1555C1H3R3CB01	40
23	0402/C0G/3.6pF/50V	GJM1555C1H3R6CB01	40
24	0402/C0G/3.9pF/50V	GJM1555C1H3R9CB01	40
25	0402/C0G/4.0pF/50V	GJM1555C1H4R0CB01	40
26	0402/C0G/4.3pF/50V	GJM1555C1H4R3CB01	40
27	0402/C0G/4.7pF/50V	GJM1555C1H4R7CB01	40
28	0402/C0G/5.0pF/50V	GJM1555C1H5R0CB01	40
29	0402/C0G/5.1pF/50V	GJM1555C1H5R1DB01	40
30	0402/C0G/5.6pF/50V	GJM1555C1H5R6DB01	40
31	0402/C0G/6.0pF/50V	GJM1555C1H6R0DB01	40
32	0402/C0G/6.2pF/50V	GJM1555C1H6R2DB01	40
33	0402/C0G/6.8pF/50V	GJM1555C1H6R8DB01	40
34	0402/C0G/7.0pF/50V	GJM1555C1H7R0DB01	40
35	0402/C0G/7.5pF/50V	GJM1555C1H7R5DB01	40
36	0402/C0G/8.0pF/50V	GJM1555C1H8R0DB01	40
37	0402/C0G/8.2pF/50V	GJM1555C1H8R2DB01	40
38	0402/C0G/9.0pF/50V	GJM1555C1H9R0DB01	40
39	0402/C0G/9.1pF/50V	GJM1555C1H9R1DB01	40
40	0402/C0G/10pF/50V	GJM1555C1H100JB01	40
41	0402/C0G/12pF/50V	GJM1555C1H120JB01	40
42	0402/C0G/15pF/50V	GJM1555C1H150JB01	40
43	0402/C0G/18pF/50V	GJM1555C1H180JB01	40
44	0402/C0G/20pF/50V	GJM1555C1H200JB01	40

### GJM15-KIT-TTOL---E

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/0.10pF/50V	GJM1555C1HR10WB01	40
2	0402/C0G/0.20pF/50V	GJM1555C1HR20WB01	40
3	0402/C0G/0.30pF/50V	GJM1555C1HR30WB01	40
4	0402/C0G/0.40pF/50V	GJM1555C1HR40WB01	40
5	0402/C0G/0.50pF/50V	GJM1555C1HR50WB01	40
6	0402/C0G/0.60pF/50V	GJM1555C1HR60WB01	40
7	0402/C0G/0.70pF/50V	GJM1555C1HR70WB01	40
8	0402/C0G/0.80pF/50V	GJM1555C1HR80WB01	40
9	0402/C0G/0.90pF/50V	GJM1555C1HR90WB01	40
10	0402/C0G/1.0pF/50V	GJM1555C1H1R0BB01	40
11	0402/C0G/1.1pF/50V	GJM1555C1H1R1BB01	40
12	0402/C0G/1.2pF/50V	GJM1555C1H1R2BB01	40
13	0402/C0G/1.3pF/50V	GJM1555C1H1R3BB01	40
14	0402/C0G/1.5pF/50V	GJM1555C1H1R5BB01	40
15	0402/C0G/1.6pF/50V	GJM1555C1H1R6BB01	40
16	0402/C0G/1.8pF/50V	GJM1555C1H1R8BB01	40
17	0402/C0G/2.0pF/50V	GJM1555C1H2R0BB01	40
18	0402/C0G/2.2pF/50V	GJM1555C1H2R2BB01	40
19	0402/C0G/2.4pF/50V	GJM1555C1H2R4BB01	40
20	0402/C0G/2.7pF/50V	GJM1555C1H2R7BB01	40
21	0402/C0G/3.0pF/50V	GJM1555C1H3R0BB01	40
22	0402/C0G/3.3pF/50V	GJM1555C1H3R3BB01	40
23	0402/C0G/3.6pF/50V	GJM1555C1H3R6BB01	40
24	0402/C0G/3.9pF/50V	GJM1555C1H3R9BB01	40
25	0402/C0G/4.0pF/50V	GJM1555C1H4R0BB01	40
26	0402/C0G/4.3pF/50V	GJM1555C1H4R3BB01	40
27	0402/C0G/4.7pF/50V	GJM1555C1H4R7BB01	40
28	0402/C0G/5.0pF/50V	GJM1555C1H5R0BB01	40
29	0402/C0G/5.1pF/50V	GJM1555C1H5R1CB01	40
30	0402/C0G/5.6pF/50V	GJM1555C1H5R6CB01	40
31	0402/C0G/6.0pF/50V	GJM1555C1H6R0CB01	40
32	0402/C0G/6.2pF/50V	GJM1555C1H6R2CB01	40
33	0402/C0G/6.8pF/50V	GJM1555C1H6R8CB01	40
34	0402/C0G/7.0pF/50V	GJM1555C1H7R0CB01	40
35	0402/C0G/7.5pF/50V	GJM1555C1H7R5CB01	40
36	0402/C0G/8.0pF/50V	GJM1555C1H8R0CB01	40
37	0402/C0G/8.2pF/50V	GJM1555C1H8R2CB01	40
38	0402/C0G/9.0pF/50V	GJM1555C1H9R0CB01	40
39	0402/C0G/9.1pF/50V	GJM1555C1H9R1CB01	40
40	0402/C0G/10pF/50V	GJM1555C1H100GB01	40
41	0402/C0G/12pF/50V	GJM1555C1H120GB01	40
42	0402/C0G/15pF/50V	GJM1555C1H150GB01	40
43	0402/C0G/18pF/50V	GJM1555C1H180GB01	40
44	0402/C0G/20pF/50V	GJM1555C1H200GB01	40

DESIGN ENGINEERING KITS

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

# GENERAL CERAMIC CHIP CAPACITORS

## 0402 (6.3 to 50 VDC)

- Miniature chip size, 0402 (L:1.0 x W:0.5 x T:0.5mm).
- The GRM155 series is a complete line of chip ceramic capacitor in 6.3V, 10V, 16V, 25V and 50V.
- Temperature characteristics: C0G, U2J, X7R, X6S, X5R, Y5V
- No Polarity
- Nickel barrier with Tin layer termination.
- Suitable for reflow soldering.
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.
- Tape and reel packaging (10,000pcs/reel) and Bulk case packaging (50,000pcs/case) are available.

### GRM15-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/0.50pF/50V	GRM1555C1HR50CZ01	40
2	0402/C0G/1.0pF/50V	GRM1555C1H1R0CZ01	40
3	0402/C0G/1.2pF/50V	GRM1555C1H1R2CZ01	40
4	0402/C0G/1.5pF/50V	GRM1555C1H1R5CZ01	40
5	0402/C0G/1.8pF/50V	GRM1555C1H1R8CZ01	40
6	0402/C0G/2.2pF/50V	GRM1555C1H2R2CZ01	40
7	0402/C0G/2.7pF/50V	GRM1555C1H2R7CZ01	40
8	0402/C0G/3.3pF/50V	GRM1555C1H3R3CZ01	40
9	0402/C0G/3.9pF/50V	GRM1555C1H3R9CZ01	40
10	0402/C0G/4.7pF/50V	GRM1555C1H4R7CZ01	40
11	0402/C0G/5.6pF/50V	GRM1555C1H5R6DZ01	40
12	0402/C0G/6.8pF/50V	GRM1555C1H6R8DZ01	40
13	0402/C0G/8.2pF/50V	GRM1555C1H8R2DZ01	40
14	0402/C0G/10pF/50V	GRM1555C1H100JZ01	40
15	0402/C0G/12pF/50V	GRM1555C1H120JZ01	40
16	0402/C0G/15pF/50V	GRM1555C1H150JZ01	40
17	0402/C0G/18pF/50V	GRM1555C1H180JZ01	40
18	0402/C0G/22pF/50V	GRM1555C1H220JZ01	40
19	0402/C0G/27pF/50V	GRM1555C1H270JZ01	40
20	0402/C0G/33pF/50V	GRM1555C1H330JZ01	40
21	0402/C0G/39pF/50V	GRM1555C1H390JZ01	40
22	0402/C0G/47pF/50V	GRM1555C1H470JZ01	40
23	0402/C0G/56pF/50V	GRM1555C1H560JZ01	40
24	0402/C0G/68pF/50V	GRM1555C1H680JZ01	40
25	0402/C0G/82pF/50V	GRM1555C1H820JZ01	40
26	0402/C0G/100pF/50V	GRM1555C1H101JZ01	40
27	0402/C0G/120pF/50V	GRM1555C1H121JA01	40
28	0402/C0G/150pF/50V	GRM1555C1H151JA01	40
29	0402/C0G/180pF/50V	GRM1555C1H181JA01	40
30	0402/C0G/220pF/50V	GRM1555C1H221JA01	40
31	0402/C0G/270pF/50V	GRM1555C1H271JA01	40
32	0402/C0G/330pF/50V	GRM1555C1H331JA01	40
33	0402/C0G/390pF/50V	GRM1555C1H391JA01	40
34	0402/C0G/470pF/50V	GRM1555C1H471JA01	40
35	0402/C0G/560pF/50V	GRM1555C1H561JA01	40
36	0402/C0G/680pF/50V	GRM1555C1H681JA01	40
37	0402/C0G/820pF/50V	GRM1555C1H821JA01	40
38	0402/C0G/1000pF/50V	GRM1555C1H102JA01	40
39	0402/X7R/220pF/50V	GRM155R71H221KA01	40
40	0402/X7R/330pF/50V	GRM155R71H331KA01	40
41	0402/X7R/470pF/50V	GRM155R71H471KA01	40
42	0402/X7R/680pF/50V	GRM155R71H681KA01	40
43	0402/X7R/1000pF/50V	GRM155R71H102KA01	40
44	0402/X7R/1500pF/50V	GRM155R71H152KA01	40
45	0402/X7R/2200pF/50V	GRM155R71H222KA01	40
46	0402/X7R/3300pF/50V	GRM155R71H332KA01	40
47	0402/X7R/4700pF/50V	GRM155R71H472KA01	40
48	0402/X7R/6800pF/25V	GRM155R71H682KA88	40

### GRM15-KIT-----E *continued*

No.	Description	Murata Global P/N	Qty.
49	0402/X7R/10000pF/50V	GRM155R71H103KA88	40
50	0402/X7R/15000pF/25V	GRM155R71E153KA61	40
51	0402/X7R/22000pF/25V	GRM155R71E223KA61	40
52	0402/X7R/33000pF/25V	GRM155R71E333KA88	40
53	0402/X7R/47000pF/25V	GRM155R71E473KA88	40
54	0402/X7R/68000pF/16V	GRM155R71C683KA88	40
55	0402/X7R/0.1uF/16V	GRM155R71C104KA88	40
56	0402/X5R/0.22uF/10V	GRM155R61A224KE19	40
57	0402/X5R/0.47uF/10V	GRM155R61A474KE15	40
58	0402/X5R/1uF/10V	GRM155R61A105KE15	40
59	0402/X5R/0.22uF/6.3V	GRM155R60J224KE01	40
60	0402/X5R/0.47uF/6.3V	GRM155R60J474KE19	40
61	0402/X5R/1uF/6.3V	GRM155R60J105KE19	40
62	0402/X5R/2.2uF/4.0V	GRM155R60G225ME15	40

**NOTE:** For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.



# GENERAL CERAMIC CHIP CAPACITORS

## 0603 (6.3 to 50 VDC)

- Miniature chip size, 0603 (L:1.6 x W:0.8 x T:0.8mm).
- The GRM188 series is a complete line of chip ceramic capacitor in 6.3V, 10V, 16V, 25V and 50V.
- Temperature characteristics: C0G, U2J, X7R, X6S, X5R, Y5V
- No Polarity
- Nickel barrier with Tin layer termination.
- Suitable for reflow soldering.
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.
- Tape and reel packaging (10,000pcs/reel) and Bulk case packaging (50,000pcs/case) are available.

### GRM18-KIT-----E

No.	Description	Murata Global P/N	Qty.
1	0603/C0G/0.50pF/50V	GRM1885C1HR50BZ01	40
2	0603/C0G/1.0pF/50V	GRM1885C1H1R0CZ01	40
3	0603/C0G/1.2pF/50V	GRM1885C1H1R2CZ01	40
4	0603/C0G/1.5pF/50V	GRM1885C1H1R5CZ01	40
5	0603/C0G/1.8pF/50V	GRM1885C1H1R8CZ01	40
6	0603/C0G/2.2pF/50V	GRM1885C1H2R2CZ01	40
7	0603/C0G/2.7pF/50V	GRM1885C1H2R7CZ01	40
8	0603/C0G/3.3pF/50V	GRM1885C1H3R3CZ01	40
9	0603/C0G/3.9pF/50V	GRM1885C1H3R9CZ01	40
10	0603/C0G/4.7pF/50V	GRM1885C1H4R7CZ01	40
11	0603/C0G/5.6pF/50V	GRM1885C1H5R6DZ01	40
12	0603/C0G/6.8pF/50V	GRM1885C1H6R8DZ01	40
13	0603/C0G/8.2pF/50V	GRM1885C1H8R2DZ01	40
14	0603/C0G/10pF/50V	GRM1885C1H100JA01	40
15	0603/C0G/12pF/50V	GRM1885C1H120JA01	40
16	0603/C0G/15pF/50V	GRM1885C1H150JA01	40
17	0603/C0G/18pF/50V	GRM1885C1H180JA01	40
18	0603/C0G/22pF/50V	GRM1885C1H220JA01	40
19	0603/C0G/27pF/50V	GRM1885C1H270JA01	40
20	0603/C0G/33pF/50V	GRM1885C1H330JA01	40
21	0603/C0G/39pF/50V	GRM1885C1H390JA01	40
22	0603/C0G/47pF/50V	GRM1885C1H470JA01	40
23	0603/C0G/56pF/50V	GRM1885C1H560JA01	40
24	0603/C0G/68pF/50V	GRM1885C1H680JA01	40
25	0603/C0G/82pF/50V	GRM1885C1H820JA01	40
26	0603/C0G/100pF/50V	GRM1885C1H101JA01	40
27	0603/C0G/120pF/50V	GRM1885C1H121JA01	40
28	0603/C0G/150pF/50V	GRM1885C1H151JA01	40
29	0603/C0G/180pF/50V	GRM1885C1H181JA01	40
30	0603/C0G/220pF/50V	GRM1885C1H221JA01	40
31	0603/C0G/270pF/50V	GRM1885C1H271JA01	40
32	0603/C0G/330pF/50V	GRM1885C1H331JA01	40
33	0603/C0G/390pF/50V	GRM1885C1H391JA01	40
34	0603/C0G/470pF/50V	GRM1885C1H471JA01	40
35	0603/C0G/560pF/50V	GRM1885C1H561JA01	40
36	0603/C0G/680pF/50V	GRM1885C1H681JA01	40
37	0603/C0G/820pF/50V	GRM1885C1H821JA01	40
38	0603/C0G/1000pF/50V	GRM1885C1H102JA01	40
39	0603/C0G/1200pF/50V	GRM1885C1H122JA01	40
40	0603/C0G/1500pF/50V	GRM1885C1H152JA01	40
41	0603/C0G/1800pF/50V	GRM1885C1H182JA01	40
42	0603/C0G/2200pF/50V	GRM1885C1H222JA01	40
43	0603/C0G/2700pF/50V	GRM1885C1H272JA01	40
44	0603/X7R/1000pF/50V	GRM188R71H102KA01	40
45	0603/X7R/1500pF/50V	GRM188R71H152KA01	40
46	0603/X7R/2200pF/50V	GRM188R71H222KA01	40
47	0603/X7R/3300pF/50V	GRM188R71H332KA01	40
48	0603/X7R/4700pF/50V	GRM188R71H472KA01	40

### GRM18-KIT-----E *continued*

No.	Description	Murata Global P/N	Qty.
49	0603/X7R/6800pF/50V	GRM188R71H682KA01	40
50	0603/X7R/10000pF/50V	GRM188R71H103KA01	40
51	0603/X7R/15000pF/50V	GRM188R71H153KA01	40
52	0603/X7R/22000pF/50V	GRM188R71H223KA01	40
53	0603/X7R/33000pF/50V	GRM188R71H333KA61	40
54	0603/X7R/47000pF/50V	GRM188R71H473KA61	40
55	0603/X7R/68000pF/50V	GRM188R71H683KA93	40
56	0603/X7R/0.1uF/50V	GRM188R71H104KA93	40
57	0603/X7R/0.22uF/25V	GRM188R71E224KA88	40
58	0603/X7R/0.47uF/16V	GRM188R71C474KA88	40
59	0603/X5R/1uF/16V	GRM188R61C105KA93	40
60	0603/X5R/1uF/10V	GRM188R61A105KA61	40
61	0603/X5R/2.2uF/10V	GRM188R61A225KE34	40
62	0603/X5R/4.7uF/6.3V	GRM188R60J475KE19	40
63	0603/X5R/10uF/6.3V	GRM188R60J106ME47	40

**NOTE:** For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

DESIGN ENGINEERING KITS

## GENERAL CERAMIC CHIP CAPACITORS

0402 – 1210 (6.3 to 50 VDC)

- TA chip capacitor replacement product lineup is available in X7R (X7S, X7T, X7U), X6S(X6T) and X5R temperature characteristics with a capacitance of 1uF and larger.
- The line of high volumetric capacitance ceramic chip capacitors is available in 6.3V, 10V, 16V, 25V and 50V.
- No Polarity
- GRM series is offered with a Ni barrier termination plated with Matte Tin, and is RoHS compliant.
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.

## GRM---KIT-HICAP--E

No.	Description	Murata Global P/N	Qty.
1	0402/X5R/1uF/10V	GRM155R61A105KE15	20
2	0402/X5R/1uF/6.3V	GRM155R60J105KE19	20
3	0603/X5R/1uF/16V	GRM185R61C105KE44	20
4	0603/X5R/1uF/16V	GRM188R61E105KA12	20
5	0603/X5R/2.2uF/10V	GRM188R61A225KE34	20
6	0603/X5R/2.2uF/16V	GRM188R61C225KE15	20
7	0603/X5R/4.7uF/6.3V	GRM188R60J475KE19	20
8	0603/X5R/10uF/6.3V	GRM188R60J106ME47	20
9	0805/X7R/1uF/25V	GRM21BR71E105KA99	20
10	0805/X5R/1uF/25V	GRM216R61E105KA12	20
11	0805/X7R/1uF/16V	GRM21BR71C105KA01	20
12	0805/X5R/2.2uF/25V	GRM219R61E225KA12	20
13	0805/X7R/2.2uF/10V	GRM21BR71A225KA01	20
14	0805/X5R/4.7uF/25V	GRM21BR61E475KA12	20
15	0805/X5R/4.7uF/16V	GRM21BR61C475KA88	20
16	0805/X5R/4.7uF/10V	GRM21BR61A475KA73	20
17	0805/X5R/10uF/10V	GRM21BR61A106KE19	20
18	0805/X5R/10uF/16V	GRM21BR61C106KE15	20
19	0805/X5R/10uF/6.3V	GRM219R60J106KE19	20
20	0805/X5R/22uF/6.3V	GRM21BR60J226ME39	20
21	1206/X7R/1uF/50V	GRM31MR71H105KA88	20
22	1206/X7R/2.2uF/25V	GRM31MR71E225KA93	20
23	1206/X7R/2.2uF/16V	GRM31MR71C225KA35	20
24	1206/X5R/4.7uF/25V	GRM319R61E475KA12	20
25	1206/X5R/10uF/25V	GRM31CR61E106KA12	20
26	1206/X5R/10uF/10V	GRM319R61A106KE19	20
27	1206/X5R/22uF/16V	GRM31CR61C226ME15	20
28	1206/X5R/47uF/6.3V	GRM31CR60J476ME19	20
29	1206/X5R/100uF/6.3V	GRM31CR60J107ME39	20
30	1210/X7R/4.7uF/50V	GRM32ER71H475KA88	20
31	1210/X5R/22uF/25V	GRM32ER61E226ME15	20
32	1210/X7R/22uF/10V	GRM32ER71A226ME20	20
33	1210/X5R/47uF/16V	GRM32ER61C476ME15	20
34	1210/X5R/100uF/6.3V	GRM32ER60J107ME20	20

**NOTE:** For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

## GENERAL CERAMIC CHIP CAPACITORS

0402 – 1210 (6.3 to 50 VDC)

- Low distortion and low shock noise make these capacitors well suited for replacing film chip capacitors.
- No Polarity
- GRM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- Stringent dimensional tolerances allow highly reliable, high-speed automatic chip placement on PCBs.
- Temperature characteristics: C0G, U2J and X7R

## GRM---KIT-TCHIK--E

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/150pF/50V	GRM1555C1H151JA01	20
2	0402/C0G/330pF/50V	GRM1555C1H331JA01	20
3	0402/C0G/470pF/50V	GRM1555C1H471JA01	20
4	0402/C0G/680pF/50V	GRM1555C1H681JA01	20
5	0402/C0G/1000pF/50V	GRM1555C1H102JA01	20
6	0603/C0G/1500pF/50V	GRM1885C1H152JA01	20
7	0603/C0G/2200pF/50V	GRM1885C1H222JA01	20
8	0603/C0G/3300pF/50V	GRM1885C1H332JA01	20
9	0805/C0G/4700pF/50V	GRM2165C1H472JA01	20
10	0805/C0G/6800pF/50V	GRM2195C1H682JA01	20
11	0805/C0G/10000pF/50V	GRM2195C1H103JA01	20
12	0805/C0G/15000pF/50V	GRM2195C1H153JA01	20
13	0805/C0G/22000pF/50V	GRM21B5C1H223JA01	20
14	1206/C0G/33000pF/50V	GRM3195C1H333JA01	20
15	1206/C0G/47000pF/50V	GRM31M5C1H473JA01	20
16	1206/C0G/68000pF/50V	GRM31C5C1H683JA01	20
17	1206/C0G/0.1uF/50V	GRM31C5C1H104JA01	20
18	0603/U2J/1000pF/50V	GRM1887U1H102JA01	20
19	0603/U2J/2200pF/50V	GRM1887U1H222JA01	20
20	0603/U2J/3300pF/50V	GRM1887U1H332JA01	20
21	0603/U2J/4700pF/50V	GRM1887U1H472JA01	20
22	0603/U2J/6800pF/50V	GRM1887U1H682JA01	20
23	0603/U2J/10000pF/50V	GRM1887U1H103JA01	20
24	0805/U2J/15000pF/50V	GRM2167U1H153JA01	20
25	0805/U2J/22000pF/50V	GRM2197U1H223JA01	20
26	0805/U2J/33000pF/50V	GRM21A7U1H333JA39	20
27	0805/U2J/47000pF/50V	GRM21B7U1H473JA01	20
28	1206/U2J/68000pF/50V	GRM31M7U1H683JA01	20
29	1206/U2J/0.1uF/50V	GRM31M7U1H104JA01	20
30	0805/X7R/0.1uF/50V	GRM21BR71H104KA01	20
31	0805/X7R/0.15uF/25V	GRM21BR71E154KA01	20
32	0805/X7R/0.22uF/25V	GRM219B71E224KA01	20
33	0805/X7R/0.33uF/50V	GRM219R71H334KA88	20
34	0805/X7R/0.47uF/50V	GRM21BR71H474KA88	20
35	0805/X7R/1uF/25V	GRM21BR71E105KA99	20
36	0603/X5R/1uF/16V	GRM188R61C105KA93	20
37	0603/X5R/1uF/10V	GRM185R61A105KE36	20
38	0603/X5R/2.2uF/10V	GRM188R61A225KE34	20
39	0805/X5R/1uF/16V	GRM216R61C105KA88	20
40	0805/X5R/4.7uF/16V	GRM21BR61C475KA88	20
41	0805/X5R/10uF/10V	GRM21BR61A106KE19	20
42	1206/X5R/2.2uF/16V	GRM316R61C225KA88	20
43	1206/X5R/10uF/25V	GRM31CR61E106KA12	20
44	1206/X5R/22uF/16V	GRM31CR61C226ME15	20
45	1206/X5R/22uF/6.3V	GRM31CR60J226ME19	20
46	1206/X5R/100uF/6.3V	GRM31CR60J107ME39	20
47	1210/X5R/47uF/16V	GRM32ER61C476ME15	20

**NOTE:** For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

# GENERAL CERAMIC CHIP CAPACITORS

0402 – 1206 (25 to 50 VDC)

- Low distortion and low shock noise make these capacitors well suited for replacing film chip capacitors.
- No Polarity
- GRM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- Stringent dimensional tolerances allow highly reliable, high-speed automatic chip placement on PCBs.
- Temperature characteristics: C0G, and U2J

## GRM---KIT-TC-----E

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/120pF/50V	GRM1555C1H121JA01	20
2	0402/C0G/150pF/50V	GRM1555C1H151JA01	20
3	0402/C0G/180pF/50V	GRM1555C1H181JA01	20
4	0402/C0G/220pF/50V	GRM1555C1H221JA01	20
5	0402/C0G/270pF/50V	GRM1555C1H271JA01	20
6	0402/C0G/330pF/50V	GRM1555C1H331JA01	20
7	0402/C0G/390pF/50V	GRM1555C1H391JA01	20
8	0402/C0G/470pF/50V	GRM1555C1H471JA01	20
9	0402/C0G/560pF/50V	GRM1555C1H561JA01	20
10	0402/C0G/680pF/50V	GRM1555C1H681JA01	20
11	0402/C0G/820pF/50V	GRM1555C1H821JA01	20
12	0402/C0G/1000pF/50V	GRM1555C1H102JA01	20
13	0603/C0G/1200pF/50V	GRM1885C1H122JA01	20
14	0603/C0G/1500pF/50V	GRM1885C1H152JA01	20
15	0603/C0G/1800pF/50V	GRM1885C1H182JA01	20
16	0603/C0G/2200pF/50V	GRM1885C1H222JA01	20
17	0603/C0G/2700pF/50V	GRM1885C1H272JA01	20
18	0603/C0G/3300pF/50V	GRM1885C1H332JA01	20
19	0603/C0G/3900pF/50V	GRM1885C1H392JA01	20
20	0805/C0G/4700pF/50V	GRM2165C1H472JA01	20
21	0805/C0G/5600pF/50V	GRM2195C1H562JA01	20
22	0805/C0G/6800pF/50V	GRM2195C1H682JA01	20
23	0805/C0G/8200pF/50V	GRM2195C1H822JA01	20
24	0805/C0G/10000pF/50V	GRM2195C1H103JA01	20
25	0805/C0G/12000pF/50V	GRM2195C1H123JA01	20
26	0805/C0G/15000pF/50V	GRM2195C1H153JA01	20
27	0805/C0G/18000pF/50V	GRM21B5C1H183JA01	20
28	0805/C0G/22000pF/50V	GRM21B5C1H223JA01	20
29	1206/C0G/27000pF/50V	GRM3195C1H273JA01	20
30	1206/C0G/33000pF/50V	GRM3195C1H333JA01	20
31	1206/C0G/39000pF/50V	GRM31M5C1H393JA01	20
32	1206/C0G/47000pF/50V	GRM31C5C1H473JA01	20
33	1206/C0G/68000pF/50V	GRM31C5C1H683JA01	20
34	1206/C0G/82000pF/50V	GRM31C5C1H823JA01	20
35	1206/C0G/0.1uF/50V	GRM31C5C1H104JA01	20
36	0603/U2J/1000pF/50V	GRM1887U1H102JA01	20
37	0603/U2J/1200pF/50V	GRM1887U1H122JA01	20
38	0603/U2J/1500pF/50V	GRM1887U1H152JA01	20
39	0603/U2J/1800pF/50V	GRM1887U1H182JA01	20
40	0603/U2J/2200pF/50V	GRM1887U1H222JA01	20
41	0603/U2J/2700pF/50V	GRM1887U1H272JA01	20
42	0603/U2J/3300pF/50V	GRM1887U1H332JA01	20
43	0603/U2J/3900pF/50V	GRM1887U1H392JA01	20
44	0603/U2J/4700pF/50V	GRM1887U1H472JA01	20
45	0603/U2J/5600pF/50V	GRM1887U1H562JA01	20
46	0603/U2J/6800pF/50V	GRM1887U1H682JA01	20
47	0603/U2J/8200pF/50V	GRM1887U1H822JA01	20

## GRM---KIT-TC-----E *continued*

No.	Description	Murata Global P/N	Qty.
48	0603/U2J/10000pF/50V	GRM1887U1H103JA01	20
49	0805/U2J/12000pF/50V	GRM2167U1H123JA01	20
50	0805/U2J/15000pF/50V	GRM2167U1H153JA01	20
51	0805/U2J/18000pF/50V	GRM2167U1H183JA01	20
52	0805/U2J/22000pF/50V	GRM2197U1H223JA01	20
53	0805/U2J/27000pF/50V	GRM2197U1H273JA01	20
54	0805/U2J/33000pF/50V	GRM21A7U1H333JA39	20
55	0805/U2J/39000pF/50V	GRM21B7U1H393JA01	20
56	0805/U2J/47000pF/50V	GRM21B7U1H473JA01	20
57	1206/U2J/56000pF/50V	GRM3197U1H563JA01	20
58	1206/U2J/68000pF/50V	GRM31M7U1H683JA01	20
59	1206/U2J/82000pF/50V	GRM31M7U1H823JA01	20
60	1206/U2J/0.1uF/50V	GRM31M7U1H104JA01	20

**NOTE:** For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

# CERAMIC CHIP CAPACITORS

## ASCAP Hi-Frequency

### 0603 (50 to 100 VDC)

- High Q and Low ESR at VHF, UHF, and Microwave Frequencies
- 0603 and 0805 sizes with Copper Inner Electrode
- Tight Tolerance Available ([W]=+/-0.05pF for <=5pF, [C]=+/-0.25pF for 5 - 9pF, [F]=+/-1% for 10 - 20pF)
- Low Power Consumption for Mobile Telecommunication
- Base Stations, Broadcast Satellite and Special Radios

### 0603 (250 VDC)

- High Q and Low ESR at VHF, UHF, and Microwave Frequencies
- 0603 size with Copper Inner Electrode
- Tight Tolerance Available ([W]=+/-0.05pF for <=5pF, [F]=+/-1% for 10 - 20pF)
- Low Power Consumption for Mobile Telecommunication
- Base Stations, Broadcast Satellite and Special Radios

#### GQM18-HIQ0603KIT-E

No.	Description	Murata Global P/N	Qty.
1	0603/C0G/0.50pF/100V	GQM1885C2AR50CB01	20
2	0603/C0G/0.60pF/100V	GQM1885C2AR60CB01	20
3	0603/C0G/0.70pF/100V	GQM1885C2AR70CB01	20
4	0603/C0G/0.80pF/100V	GQM1885C2AR80CB01	20
5	0603/C0G/0.90pF/100V	GQM1885C2AR90CB01	20
6	0603/C0G/1.0pF/100V	GQM1885C2A1R0CB01	20
7	0603/C0G/1.1pF/100V	GQM1885C2A1R1CB01	20
8	0603/C0G/1.2pF/100V	GQM1885C2A1R2CB01	20
9	0603/C0G/1.3pF/100V	GQM1885C2A1R3CB01	20
10	0603/C0G/1.5pF/100V	GQM1885C2A1R5CB01	20
11	0603/C0G/1.6pF/100V	GQM1885C2A1R6CB01	20
12	0603/C0G/1.8pF/100V	GQM1885C2A1R8CB01	20
13	0603/C0G/2.0pF/100V	GQM1885C2A2R0CB01	20
14	0603/C0G/2.2pF/100V	GQM1885C2A2R2CB01	20
15	0603/C0G/2.4pF/100V	GQM1885C2A2R4CB01	20
16	0603/C0G/2.7pF/100V	GQM1885C2A2R7CB01	20
17	0603/C0G/3.0pF/100V	GQM1885C2A3R0CB01	20
18	0603/C0G/3.3pF/100V	GQM1885C2A3R3CB01	20
19	0603/C0G/3.6pF/100V	GQM1885C2A3R6CB01	20
20	0603/C0G/3.9pF/100V	GQM1885C2A3R9CB01	20
21	0603/C0G/4.3pF/100V	GQM1885C2A4R3CB01	20
22	0603/C0G/4.7pF/100V	GQM1885C2A4R7CB01	20
23	0603/C0G/5.1pF/100V	GQM1885C2A5R1DB01	20
24	0603/C0G/5.6pF/100V	GQM1885C2A5R6DB01	20
25	0603/C0G/6.2pF/100V	GQM1885C2A6R2DB01	20
26	0603/C0G/6.8pF/100V	GQM1885C2A6R8DB01	20
27	0603/C0G/7.5pF/50V	GQM1885C1H7R5DB01	20
28	0603/C0G/8.2pF/50V	GQM1885C1H8R2DB01	20
29	0603/C0G/9.1pF/50V	GQM1885C1H9R1DB01	20
30	0603/C0G/10pF/50V	GQM1885C1H100JB01	20
31	0603/C0G/12pF/50V	GQM1885C1H120JB01	20
32	0603/C0G/15pF/50V	GQM1885C1H150JB01	20
33	0603/C0G/18pF/50V	GQM1885C1H180JB01	20
34	0603/C0G/22pF/50V	GQM1885C1H220JB01	20
35	0603/C0G/27pF/50V	GQM1885C1H270JB01	20
36	0603/C0G/33pF/50V	GQM1885C1H330JB01	20
37	0603/C0G/39pF/50V	GQM1885C1H390JB01	20
38	0603/C0G/47pF/50V	GQM1885C1H470JB01	20
39	0603/C0G/68pF/50V	GQM1885C1H680JB01	20
40	0603/C0G/100pF/50V	GQM1885C1H101JB01	20

#### GQM18-HIQ250VKIT-E

No.	Description	Murata Global P/N	Qty.
1	0603/C0G/0.10pF/250V	GQM1875C2ER10BB12	20
2	0603/C0G/0.30pF/250V	GQM1875C2ER30BB12	20
3	0603/C0G/0.50pF/250V	GQM1875C2ER50BB12	20
4	0603/C0G/0.60pF/250V	GQM1875C2ER60BB12	20
5	0603/C0G/0.70pF/250V	GQM1875C2ER70BB12	20
6	0603/C0G/0.80pF/250V	GQM1875C2ER80BB12	20
7	0603/C0G/0.90pF/250V	GQM1875C2ER90BB12	20
8	0603/C0G/1.0pF/250V	GQM1875C2E1R0BB12	20
9	0603/C0G/1.1pF/250V	GQM1875C2E1R1BB12	20
10	0603/C0G/1.2pF/250V	GQM1875C2E1R2BB12	20
11	0603/C0G/1.3pF/250V	GQM1875C2E1R3BB12	20
12	0603/C0G/1.6pF/250V	GQM1875C2E1R6BB12	20
13	0603/C0G/1.8pF/250V	GQM1875C2E1R8BB12	20
14	0603/C0G/2.2pF/250V	GQM1875C2E2R2BB12	20
15	0603/C0G/2.4pF/250V	GQM1875C2E2R4BB12	20
16	0603/C0G/3.0pF/250V	GQM1875C2E3R0BB12	20
17	0603/C0G/3.3pF/250V	GQM1875C2E3R3BB12	20
18	0603/C0G/3.6pF/250V	GQM1875C2E3R6BB12	20
19	0603/C0G/3.9pF/250V	GQM1875C2E3R9BB12	20
20	0603/C0G/4.3pF/250V	GQM1875C2E4R3BB12	20
21	0603/C0G/4.7pF/250V	GQM1875C2E4R7BB12	20
22	0603/C0G/5.1pF/250V	GQM1875C2E5R1BB12	20
23	0603/C0G/5.6pF/250V	GQM1875C2E5R6BB12	20
24	0603/C0G/6.2pF/250V	GQM1875C2E6R2BB12	20
25	0603/C0G/6.8pF/250V	GQM1875C2E6R8BB12	20
26	0603/C0G/7.5pF/250V	GQM1875C2E7R5BB12	20
27	0603/C0G/9.1pF/250V	GQM1875C2E9R1BB12	20
28	0603/C0G/10pF/250V	GQM1875C2E100JB12	20
29	0603/C0G/12pF/250V	GQM1875C2E120JB12	20
30	0603/C0G/15pF/250V	GQM1875C2E150JB12	20
31	0603/C0G/22pF/250V	GQM1875C2E220JB12	20
32	0603/C0G/27pF/250V	GQM1875C2E270JB12	20
33	0603/C0G/33pF/250V	GQM1875C2E330JB12	20
34	0603/C0G/39pF/250V	GQM1875C2E390JB12	20
35	0603/C0G/47pF/250V	GQM1875C2E470JB12	20

DESIGN ENGINEERING KITS

## CERAMIC CHIP CAPACITORS

## ASCAP Hi-Frequency

## 0805 (50 to 100 VDC)

- High Q and Low ESR at VHF, UHF, and Microwave Frequencies
- 0603 and 0805 sizes with Copper Inner Electrode
- Tight Tolerance Available ([W]=+/-0.05pF for <=5pF, [C]=+/-0.25pF for 5 - 9pF, [F]=+/-1% for 10 - 20pF)
- Low Power Consumption for Mobile Telecommunication
- Base Stations, Broadcast Satellite and Special Radios

## GQM21-HIQ0805KIT-E

No.	Description	Murata Global P/N	Qty.
1	0805/C0G/0.50pF/100V	GQM2195C2AR50CB01	20
2	0805/C0G/0.60pF/100V	GQM2195C2AR60CB01	20
3	0805/C0G/0.70pF/100V	GQM2195C2AR70CB01	20
4	0805/C0G/0.80pF/100V	GQM2195C2AR80CB01	20
5	0805/C0G/0.90pF/100V	GQM2195C2AR90CB01	20
6	0805/C0G/1.0pF/100V	GQM2195C2A1R0CB01	20
7	0805/C0G/1.1pF/100V	GQM2195C2A1R1CB01	20
8	0805/C0G/1.2pF/100V	GQM2195C2A1R2CB01	20
9	0805/C0G/1.3pF/100V	GQM2195C2A1R3CB01	20
10	0805/C0G/1.5pF/100V	GQM2195C2A1R5CB01	20
11	0805/C0G/1.6pF/100V	GQM2195C2A1R6CB01	20
12	0805/C0G/1.8pF/100V	GQM2195C2A1R8CB01	20
13	0805/C0G/2.0pF/100V	GQM2195C2A2R0CB01	20
14	0805/C0G/2.2pF/100V	GQM2195C2A2R2CB01	20
15	0805/C0G/2.4pF/100V	GQM2195C2A2R4CB01	20
16	0805/C0G/2.7pF/100V	GQM2195C2A2R7CB01	20
17	0805/C0G/3.0pF/100V	GQM2195C2A3R0CB01	20
18	0805/C0G/3.3pF/100V	GQM2195C2A3R3CB01	20
19	0805/C0G/3.6pF/100V	GQM2195C2A3R6CB01	20
20	0805/C0G/3.9pF/100V	GQM2195C2A3R9CB01	20
21	0805/C0G/4.3pF/100V	GQM2195C2A4R3CB01	20
22	0805/C0G/4.7pF/100V	GQM2195C2A4R7CB01	20
23	0805/C0G/5.1pF/100V	GQM2195C2A5R1DB01	20
24	0805/C0G/5.6pF/100V	GQM2195C2A5R6DB01	20
25	0805/C0G/6.2pF/100V	GQM2195C2A6R2DB01	20
26	0805/C0G/6.8pF/100V	GQM2195C2A6R8DB01	20
27	0805/C0G/7.5pF/100V	GQM2195C2A7R5DB01	20
28	0805/C0G/8.2pF/100V	GQM2195C2A8R2DB01	20
29	0805/C0G/9.1pF/100V	GQM2195C2A9R1DB01	20
30	0805/C0G/10pF/100V	GQM2195C2A100JB01	20
31	0805/C0G/12pF/100V	GQM2195C2A120JB01	20
32	0805/C0G/15pF/100V	GQM2195C2A150JB01	20
33	0805/C0G/18pF/100V	GQM2195C2A180JB01	20
34	0805/C0G/22pF/50V	GQM2195C1H220JB01	20
35	0805/C0G/27pF/50V	GQM2195C1H270JB01	20
36	0805/C0G/33pF/50V	GQM2195C1H330JB01	20
37	0805/C0G/39pF/50V	GQM2195C1H390JB01	20
38	0805/C0G/47pF/50V	GQM2195C1H470JB01	20
39	0805/C0G/68pF/50V	GQM2195C1H680JB01	20
40	0805/C0G/100pF/50V	GQM2195C1H101JB01	20

# CERAMIC CHIP CAPACITORS

## ASCAP Hi-Frequency

- Miniature sizes & stable C0G temperature coefficient
- Very high Q at high frequencies
- 0603, 0805 and 1210 sizes
- Low Power Consumption for Mobile Telecommunication
- Base Station, Terminal applications, Wireless equipment and High frequency radio

- Miniature sizes & stable C0G temperature coefficient
- Very high Q at high frequencies
- 0603, 0805 and 1210 sizes
- Low Power Consumption for Mobile Telecommunication
- Base Station, Terminal applications, Wireless equipment and High frequency radio

### ERB18-HIQ0603KIT-E 0603 - (250 VDC)

No.	Description	Murata Global P/N	Qty.
1	0603/COG/1.0pF/250V	ERB1885C2E1R0BDX1	10
2	0603/COG/1.1pF/250V	ERB1885C2E1R1BDX1	10
3	0603/COG/1.2pF/250V	ERB1885C2E1R2BDX1	10
4	0603/COG/1.3pF/250V	ERB1885C2E1R3BDX1	10
5	0603/COG/1.5pF/250V	ERB1885C2E1R5BDX1	10
6	0603/COG/1.6pF/250V	ERB1885C2E1R6BDX1	10
7	0603/COG/1.8pF/250V	ERB1885C2E1R8BDX1	10
8	0603/COG/2.0pF/250V	ERB1885C2E2R0BDX1	10
9	0603/COG/2.4pF/250V	ERB1885C2E2R4BDX1	10
10	0603/COG/2.7pF/250V	ERB1885C2E2R7BDX1	10
11	0603/COG/3.0pF/250V	ERB1885C2E3R0CDX1	10
12	0603/COG/3.3pF/250V	ERB1885C2E3R3CDX1	10
13	0603/COG/3.6pF/250V	ERB1885C2E3R6CDX1	10
14	0603/COG/3.9pF/250V	ERB1885C2E3R9CDX1	10
15	0603/COG/4.3pF/250V	ERB1885C2E4R3CDX1	10
16	0603/COG/4.7pF/250V	ERB1885C2E4R7CDX1	10
17	0603/COG/5.1pF/250V	ERB1885C2E5R1CDX1	10
18	0603/COG/5.6pF/250V	ERB1885C2E5R6CDX1	10
19	0603/COG/6.2pF/250V	ERB1885C2E6R2CDX1	10
20	0603/COG/6.8pF/250V	ERB1885C2E6R8CDX1	10
21	0603/COG/7.5pF/250V	ERB1885C2E7R5CDX5	10
22	0603/COG/8.2pF/250V	ERB1885C2E8R2CDX5	10
23	0603/COG/9.1pF/250V	ERB1885C2E9R1CDX5	10
24	0603/COG/10pF/250V	ERB1885C2E100JDX5	10
25	0603/COG/12pF/250V	ERB1885C2E120JDX5	10
26	0603/COG/15pF/250V	ERB1885C2E150JDX5	10
27	0603/COG/18pF/250V	ERB1885C2E180JDX5	10
28	0603/COG/22pF/250V	ERB1885C2E220JDX5	10
29	0603/COG/27pF/250V	ERB1885C2E270JDX5	10
30	0603/COG/33pF/250V	ERB1885C2E330JDX5	10
31	0603/COG/39pF/250V	ERB1885C2E390JDX5	10
32	0603/COG/47pF/250V	ERB1885C2E470JDX5	10
33	0603/COG/56pF/250V	ERB1885C2E560JDX5	10
34	0603/COG/68pF/250V	ERB1885C2E680JDX5	10
35	0603/COG/82pF/250V	ERB1885C2E820JDX5	10
36	0603/COG/100pF/250V	ERB1885C2E101JDX5	10

### ERB21-HIQ0805KIT-E 0805 - (250VDC)

No.	Description	Murata Global P/N	Qty.
1	0805/COG/1.2pF/250V	ERB21 B5C2E1R2CDX1	10
2	0805/COG/1.5pF/250V	ERB21 B5C2E1R5CDX1	10
3	0805/COG/1.8pF/250V	ERB21 B5C2E1R8CDX1	10
4	0805/COG/2.2pF/250V	ERB21B5C2E2R2CDX1	10
5	0805/COG/2.7pF/250V	ERB21B5C2E2R7CDX1	10
6	0805/COG/3.3pF/250V	ERB21B5C2E3R3CDX1	10
7	0805/COG/3.9pF/250V	ERB21B5C2E3R9CDX1	10
8	0805/COG/4.7pF/250V	ERB21B5C2E4R7CDX1	10
9	0805/COG/5.6pF/250V	ERB21B5C2E5R6DDX1	10
10	0805/COG/6.8pF/250V	ERB21B5C2E6R8DDX1	10
11	0805/COG/8.2pF/250V	ERB82185C2E8R2DDX1	10
12	0805/COG/10pF/250V	ERB21B5C2E100JDX1	10
13	0805/COG/12pF/250V	ERB21B5C2E120JDX1	10
14	0805/COG/15pF/250V	ERB21B5C2E150JDX1	10
15	0805/COG/18pF/250V	ERB21B5C2E180JDX1	10
16	0805/COG/22pF/250V	ERB21B5C2E220JDX1	10
17	0805/COG/27pF/250V	ERB21B5C2E270JDX1	10
18	0805/COG/33pF/250V	ERB21B5C2E330JDX1	10
19	0805/COG/39pF/250V	ERB21B5C2E390JDX1	10
20	0805/COG/47pF/250V	ERB21B5C2E470JDX1	10
21	0805/COG/56pF/250V	ERB21B5C2E560JDX1	10
22	0805/COG/68pF/250V	ERB21B5C2E680JDX1	10
23	0805/COG/82pF/250V	ERB21B5C2E820JDX1	10
24	0805/COG/100pF/250V	ERB21B5C2E101JDX1	10

### ERB32-HIQ1210KIT-E 1210 - (500VDC)

No.	Description	Murata Global P/N	Qty.
1	1210/COG/3.3pF/500V	ERB32Q5C2H3R3CDX1	10
2	1210/COG/3.9pF/500V	ERB32Q5C2H3R9CDX1	10
3	1210/COG/4.7pF/500V	ERB32Q5C2H4R7CDX1	10
4	1210/COG/5.6pF/500V	ERB32Q5C2H5R6DDX1	10
5	1210/COG/6.8pF/500V	ERB32Q5C2H6R8DDX1	10
6	1210/COG/8.2pF/500V	ERB32Q5C2H8R2DDX1	10
7	1210/COG/10pF/500V	ERB32Q5C2H100JDX1	10
8	1210/COG/12pF/500V	ERB32Q5C2H120JDX1	10
9	1210/COG/15pF/500V	ERB32Q5C2H150JDX1	10
10	1210/COG/18pF/500V	ERB32Q5C2H180JDX1	10
11	1210/COG/22pF/500V	ERB32Q5C2H220JDX1	10
12	1210/COG/27pF/500V	ERB32Q5C2H270JDX1	10
13	1210/COG/33pF/500V	ERB32Q5C2H330JDX1	10
14	1210/COG/39pF/500V	ERB32Q5C2H390JDX1	10
15	1210/COG/47pF/500V	ERB32Q5C2H470JDX1	10
16	1210/COG/56pF/500V	ERB32Q5C2H560JDX1	10
17	1210/COG/68pF/500V	ERB32Q5C2H680JDX1	10
18	1210/COG/82pF/500V	ERB32Q5C2H820JDX1	10
19	1210/COG/100pF/500V	ERB32Q5C2H101JDX1	10

DESIGN ENGINEERING KITS

## CERAMIC CHIP CAPACITORS

### ASCAP Hi-Frequency 0505 (150 VDC)

- Miniature sizes (0505 and 1111)
- Very high Q at high frequency
- High RF power capabilities
- Impervious to environmental conditions
- Low noise
- Base stations and RF power supplies

#### MA19-HIQ0505KIT- E-

No.	Description	Murata Global P/N	Qty.
1	0505/P090/0.3pF/150V	MA190R3BAB	5
2	0505/P090/0.5pF/150V	MA190R5BAB	5
3	0505/P090/0.7pF/150V	MA190R7BAB	5
4	0505/P090/1.0pF/150V	MA191R0BAB	5
5	0505/P090/1.2pF/150V	MA191R2CAB	5
6	0505/P090/1.5pF/150V	MA191R5CAB	5
7	0505/P090/1.8pF/150V	MA191R8CAB	5
8	0505/P090/2.2pF/150V	MA192R2CAB	5
9	0505/P090/2.7pF/150V	MA192R7CAB	5
10	0505/P090/3.3pF/150V	MA193R3CAB	5
11	0505/P090/3.9pF/150V	MA193R9CAB	5
12	0505/P090/4.7pF/150V	MA194R7CAB	5
13	0505/P090/5.6pF/150V	MA195R6DAB	5
14	0505/P090/6.8pF/150V	MA196R8DAB	5
15	0505/P090/8.2pF/150V	MA198R2DAB	5
16	0505/P090/10pF/150V	MA19100JAB	5
17	0505/P090/12pF/150V	MA19120JAB	5
18	0505/P090/15pF/150V	MA19150JAB	5
19	0505/P090/18pF/150V	MA19180JAB	5
20	0505/P090/22pF/150V	MA19220JAB	5
21	0505/P090/27pF/150V	MA19270JAB	5
22	0505/P090/33pF/150V	MA19330JAB	5
23	0505/P090/39pF/150V	MA19390JAB	5
24	0505/P090/47pF/150V	MA19470JAB	5
25	0505/P090/56pF/150V	MA19560JAB	5
26	0505/P090/68pF/150V	MA19680JAB	5
27	0505/P090/82pF/150V	MA19820JAB	5

### 1111 (50 to 500 VDC)

- Miniature sizes (0505 and 1111)
- Very high Q at high frequency
- High RF power capabilities
- Impervious to environmental conditions
- Low noise
- Base stations and RF power supplies

#### MA29-HIQ1111KIT- E-

No.	Description	Murata Global P/N	Qty.
1	1111/P090/0.3pF/500V	MA290R3BAB	5
2	1111/P090/0.5pF/500V	MA290R5BAB	5
3	1111/P090/0.7pF/500V	MA290R7BAB	5
4	1111/P090/1.0pF/500V	MA291R0BAB	5
5	1111/P090/1.2pF/500V	MA291R2CAB	5
6	1111/P090/1.5pF/500V	MA291R5CAB	5
7	1111/P090/1.8pF/500V	MA291R8CAB	5
8	1111/P090/2.2pF/500V	MA292R2CAB	5
9	1111/P090/2.7pF/500V	MA292R7CAB	5
10	1111/P090/3.3pF/500V	MA293R3CAB	5
11	1111/P090/3.9pF/500V	MA293R9CAB	5
12	1111/P090/4.7pF/500V	MA294R7CAB	5
13	1111/P090/5.6pF/500V	MA295R6DAB	5
14	1111/P090/6.8pF/500V	MA296R8DAB	5
15	1111/P090/8.2pF/500V	MA298R2DAB	5
16	1111/P090/10pF/500V	MA29100JAB	5
17	1111/P090/12pF/500V	MA29120JAB	5
18	1111/P090/15pF/500V	MA29150JAB	5
19	1111/P090/18pF/500V	MA29180JAB	5
20	1111/P090/22pF/500V	MA29220JAB	5
21	1111/P090/27pF/500V	MA29270JAB	5
22	1111/P090/33pF/500V	MA29330JAB	5
23	1111/P090/39pF/500V	MA29390JAB	5
24	1111/P090/47pF/500V	MA29470JAB	5
25	1111/P090/56pF/500V	MA29560JAB	5
26	1111/P090/68pF/500V	MA29680JAB	5
27	1111/P090/82pF/500V	MA29820JAB	5
28	1111/P090/100pF/500V	MA29101JAB	5
29	1111/P090/150pF/300V	MA29151JAB	5
30	1111/P090/220pF/200V	MA29221JAB	5
31	1111/P090/330pF/200V	MA29331JAB	5
32	1111/P090/470pF/200V	MA29471JAB	5
33	1111/P090/680pF/50V	MA29681JAB	5
34	1111/P090/1000pF/50V	MA29102JAB	5

NOTE: Custom MA20 (non-magnetic) kits are available for MRI and other Medical applications. For availability, check with your Murata Sales Contact.



## CERAMIC CHIP CAPACITORS

### ASCAP Hi-Frequency 0505 (150 VDC)

- Miniature sizes (0505 and 1111)
- Very high Q at high frequency
- High RF power capabilities
- Impervious to environmental conditions
- Low noise
- Base stations, MRI systems and RF power supplies

#### MA59-HIQ0505KIT- E-

No.	Description	Murata Global P/N	Qty.
1	0505/C0G/1pF/150V	MA591R0BAB	5
2	0505/C0G/1.5pF/150V	MA591R5CAB	5
3	0505/C0G/2.2pF/150V	MA592R2CAB	5
4	0505/C0G/3.3pF/150V	MA593R3CAB	5
5	0505/C0G/4.7pF/150V	MA594R7CAB	5
6	0505/C0G/6.8pF/150V	MA596R8DAB	5
7	0505/C0G/10pF/150V	MA59100JAB	5
8	0505/C0G/15pF/150V	MA59150JAB	5
9	0505/C0G/22pF/150V	MA59220JAB	5
10	0505/C0G/33pF/150V	MA59330JAB	5
11	0505/C0G/47pF/150V	MA59470JAB	5
12	0505/C0G/68pF/150V	MA59680JAB	5
13	0505/C0G/100pF/150V	MA59101JAB	5

### 1111 (50 to 500 VDC)

- Miniature sizes (0505 and 1111)
- Very high Q at high frequency
- High RF power capabilities
- Impervious to environmental conditions
- Low noise
- Base stations, MRI systems and RF power supplies

#### MA69-HIQ1111KIT- E-

No.	Description	Murata Global P/N	Qty.
1	1111/C0G/1.5pF/500V	MA691R5CAB	5
2	1111/C0G/2.2pF/500V	MA692R2CAB	5
3	1111/C0G/3.3pF/500V	MA693R3CAB	5
4	1111/C0G/4.7pF/500V	MA694R7CAB	5
5	1111/C0G/6.8pF/500V	MA696R8DAB	5
6	1111/C0G/10pF/500V	MA69100JAB	5
7	1111/C0G/15pF/500V	MA69150JAB	5
8	1111/C0G/22pF/500V	MA69220JAB	5
9	1111/C0G/33pF/500V	MA69330JAB	5
10	1111/C0G/47pF/500V	MA69470JAB	5
11	1111/C0G/68pF/500V	MA69680JAB	5
12	1111/C0G/100pF/500V	MA69101JAB	5
13	1111/C0G/220pF/200V	MA69221JAB	5
14	1111/C0G/470pF/200V	MA69471JAB	5
15	1111/C0G/1000pF/50V	MA69102JAB	5

# CERAMIC CHIP CAPACITORS

Low ESL 0402 – 1206 (4.0 to 25 VDC)

- Low ESL. Good for noise reduction for high frequency equipment.
- Suitable for high speed IC decoupling.
- Small and high capacitance. Low profile type is available.
- 0402, 0603, 0805 and 1206 sizes

## LL-LOWESL-KIT-B -- E

No.	Description	Murata Global P/N	Qty.
1	0402/X6S/0.1uF/6.3V/T=0.3mm	LLL153C80J104ME01	20
2	0402/X6S/0.22uF/6.3V/T=0.3mm	LLL153C80J224ME14	20
3	0603/X7R/10000pF/25V/T=0.6mm	LLL185R71E103MA01	20
4	0603/X7R/22000pF/25V/T=0.6mm	LLL185R71E223MA01	20
5	0603/X7R/47000pF/16V/T=0.6mm	LLL185R71C473MA01	20
6	0603/X7R/0.1uF/10V/T=0.6mm	LLL185R71A104MA01	20
7	0603/X7R/0.22uF/6.3V/T=0.6mm	LLL185R70J224MA01	20
8	0603/X7S/0.47uF/4V/T=0.6mm	LLL185C70G474MA01	20
9	0603/X7S/1uF/4V/T=0.55mm	LLL185C70G105ME01	20
10	0603/X7S/2.2uF/4V/T=0.55mm	LLL185C70G225ME01	20
11	0805/X7R/47000pF/25V/T=0.7mm	LLL216R71E473MA01	20
12	0805/X7R/0.1uF/25V/T=0.7mm	LLL216R71E104MA01	20
13	0805/X7R/0.22uF/16V/T=0.95mm	LLL219R71C224MA01	20
14	0805/X7R/0.47uF/10V/T=0.95mm	LLL219R71A474MA01	20
15	0805/X7R/1uF/6.3V/T=0.95mm	LLL219R70J105MA01	20
16	0805/X7R/22000pF/25V/T=0.5mm	LLL215R71E223MA11	20
17	0805/X7R/47000pF/16V/T=0.5mm	LLL215R71C473MA11	20
18	0805/X7R/0.1uF/16V/T=0.5mm	LLL215R71C104MA11	20
19	0805/X7R/0.22uF/10V/T=0.5mm	LLL215R71A224MA11	20
20	1206/X7R/0.22uF/25V/T=1.25mm	LLL31MR71E224MA01	20
21	1206/X7R/0.47uF/16V/T=0.75mm	LLL317R71C474MA01	20
22	1206/X7R/1uF/16V/T=1.25mm	LLL31MR71C105MA01	20
23	1206/X7R/2.2uF/10V/T=1.25mm	LLL31MR71A225MA01	20
24	1206/X7S/10uF/4V/T=1.4mm	LLL31BC70G106MA01	20
25	1206/X7R/47000pF/25V/T=0.5mm	LLL315R71E473MA11	20
26	1206/X7R/0.1uF/25V/T=0.5mm	LLL315R71E104MA11	20
27	1206/X7R/0.22uF/16V/T=0.5mm	LLL315R71C224MA11	20
28	1206/X7R/0.47uF/10V/T=0.5mm	LLL315R71A474MA11	20
29	0603/X7S/0.47uF/4V/T=0.55mm	LLA185C70G474MA01	20
30	0603/X7S/1uF/4V/T=0.55mm	LLA185C70G105ME01	20
31	0603/X7S/2.2uF/4V/T=0.55mm	LLA185C70G225ME16	20
32	0805/X7R/1uF/6.3V/T=0.95mm	LLA219R70J105MA01	20
33	0805/X7R/10000pF/25V/T=0.55mm	LLA215R71E103MA14	20
34	0805/X7R/0.1uF/16V/T=0.55mm	LLA215R71C104MA14	20
35	0805/X7R/0.22uF/6.3V/T=0.55mm	LLA215R70J224MA14	20
36	0805/X7R/0.47uF/6.3V/T=0.55mm	LLA215R70J474MA14	20
37	0805/X7S/1uF/4V/T=0.55mm	LLA215C70G105MA14	20
38	0805/X7S/2.2uF/4V/T=0.55mm	LLA215C70G225ME11	20
39	0805/X7S/4.7uF/4V/T=0.55mm	LLA215C70G475ME19	20
40	1206/X7R/0.47uF/16V/T=0.95mm	LLA319R71C474MA01	20
41	1206/X7R/1uF/16V/T=1.25mm	LLA31MR71C105MA01	20
42	1206/X7R/2.2uF/10V/T=1.25mm	LLA31MR71A225MA01	20
43	1206/X7R/0.22uF/16V/T=0.55mm	LLA315R71C224MA14	20
44	1206/X7R/0.47uF/10V/T=0.55mm	LLA315R71A474MA14	20
45	1206/X7R/1uF/6.3V/T=0.55mm	LLA315R70J105MA14	20
46	1206/X7R/2.2uF/6.3V/T=0.55mm	LLA315R70J225MA14	20
47	0805/X7S/1uF/4V/T=0.55mm	LLM215C70G105MA11	20
48	0805/X7S/2.2uF/4V/T=0.55mm	LLM215C70G225ME11	20
49	1206/X7R/2.2uF/6.3V/T=0.55mm	LLM315R70J225MA11	20

## LLL Standard 2 Terminal (Reversed Geometry Low ESL Type)

1. Low ESL: 150 to 250pH. Suitable for noise reduction at high frequencies (> 200MHz)
2. Operating Temperature:
  - X7R -55°C to 125°C with a ±15% cap change over temp range
  - X7S -55°C to 125°C with a ±22% cap change over temp range

## LLA Eight Terminal (Low ESL Type)

1. Lower ESL: 80 to 120pH. Suitable for high speed (800MHz to 4GHz) IC decoupling
2. Operating Temperature:
  - X7R -55°C to 125°C with a ±15% cap change over temp range
  - X7S -55°C to 125°C with a ±22% cap change over temp range

## LLM Ten Terminal (Low ESL Type)

1. Lowest ESL: 35 to 45pH. Suitable for high speed (1GHz to 4GHz) IC decoupling
2. Operating Temperature:
  - X7R -55°C to 125°C with a ±15% cap change over temp range
  - X7S -55°C to 125°C with a ±22% cap change over temp range

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

## CERAMIC CHIP CAPACITORS

## ASCAP Cap Arrays 0504 – 1206 (10 to 50 VDC)

- Mounting cost saving (one placement instead of four or two).
- High density mounting due to mounting space saving.
- Four or two element capacitors in one chip.
- 0504, 0805 and 1206 sizes

## GNM-CARRAY-KIT-B-E

No.	Description	Murata Global P/N	Qty.
1	0302/X5R/0.1pF/16V	GNM0M2R61C104ME18	40
2	0504/X7R/1000pF/50V	GNM1M2R71H102MA01	40
3	0504/X7R/10000pF/25V	GNM1M2R71E103MA01	40
4	0504/X5R/0.1uF/10V	GNM1M2R61A104MA01	40
5	0504/X5R/1uF/16V	GNM1M2R61C105ME18	40
6	0504/X5R/1uF/10V	GNM1M2R61A105ME17	40
7	0805/X5R/1uF/16V	GNM212R61C105MA16	40
8	0805/X5R/2.2uF/10V	GNM212R61A225ME16	40
9	0805/X7R/1000pF/50V	GNM214R71H102MA01	40
10	0805/X7R/10000pF/25V	GNM214R71E103MA01	40
11	0805/X7R/0.1uF/16V	GNM214R71C104MA01	40
12	0805/X5R/1uF/10V	GNM214R61A105ME17	40
13	0504/COG/10pF/50V	GNM1 M25C1H100KD01	40
14	0504/COG/15pF/50V	GNM1M25C1H150KD01	40
15	0504/COG/22pF/50V	GNM1M25C1H220KD01	40
16	0504/COG/33pF/50V	GNM1M25C1H330KD01	40
17	0504/COG/47pF/50V	GNM1M25C1H470KD01	40
18	0504/COG/68p/50V	GNM1M25C1H680KD01	40
19	0504/COG/100pF/50V	GNM1M25C1H101KD01	40
20	0504/COG/150pF50V	GNM1M25C1H151KD01	40
21	0504/COG/220pF/50V	GNM1M25C1H221KD01	40
22	0805/COG/10pF/50V	GNM2145C1H100KD01	40
23	0805/COG/15pF/50V	GNM2145C1H150KD01	40
24	0805/COG/22pF/50V	GNM2145C1H220KD01	40
25	0805/COG/33pF/50V	GNM2145C1H330KD01	40
26	0805/COG/47pF/50V	GNM2145C1H470KD01	40
27	0805/COG/68pF/50V	GNM2145C1H680KD01	40
28	0805/COG/100pF/50V	GNM2145C1H101KD01	40
29	0805/COG/150pF/50V	GNM2145C1H151KD01	40
30	0805/COG/220pF/50V	GNM2145C1H221KD01	40

# CERAMIC CHIP CAPACITORS

## Automotive Grade 0402 (16 to 50 VDC)

- GCM series is for power-train and automotive safety equipment. GRM series is available for other automotive equipment such as comfort, security, information and entertainment.
- GCM series meets AEC-Q200 requirements.
- GCM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- No polarity
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.
- GCM ultra small series is suitable for TPMS or RKE applications.

### GCM15-KIT- - - - - A

No.	Description	Murata Global P/N	Qty.
1	0402/C0G/1.0pF/50V	GCM1555C1H1R0CZ13	40
2	0402/C0G/1.2pF/50V	GCM1555C1H1R2CZ13	40
3	0402/C0G/1.5pF/50V	GCM1555C1H1R5CZ13	40
4	0402/C0G/1.8pF/50V	GCM1555C1H1R8CZ13	40
5	0402/C0G/2.0pF/50V	GCM1555C1H2R0CZ13	40
6	0402/C0G/2.2pF/50V	GCM1555C1H2R2CZ13	40
7	0402/C0G/2.7pF/50V	GCM1555C1H2R7CZ13	40
8	0402/C0G/3.0pF/50V	GCM1555C1H3R0CZ13	40
9	0402/C0G/3.3pF/50V	GCM1555C1H3R3CZ13	40
10	0402/C0G/3.9pF/50V	GCM1555C1H3R9CZ13	40
11	0402/C0G/4.0pF/50V	GCM1555C1H4R0CZ13	40
12	0402/C0G/4.7pF/50V	GCM1555C1H4R7CZ13	40
13	0402/C0G/5.0pF/50V	GCM1555C1H5R0CZ13	40
14	0402/C0G/5.6pF/50V	GCM1555C1H5R6DZ13	40
15	0402/C0G/6.0pF/50V	GCM1555C1H6R0DZ13	40
16	0402/C0G/6.8pF/50V	GCM1555C1H6R8DZ13	40
17	0402/C0G/7.0pF/50V	GCM1555C1H7R0DZ13	40
18	0402/C0G/8.0pF/50V	GCM1555C1H8R0DZ13	40
19	0402/C0G/8.2pF/50V	GCM1555C1H8R2DZ13	40
20	0402/C0G/9.0pF/50V	GCM1555C1H9R0DZ13	40
21	0402/C0G/10pF/50V	GCM1555C1H100JZ13	40
22	0402/C0G/12pF/50V	GCM1555C1H120JZ13	40
23	0402/C0G/15pF/50V	GCM1555C1H150JZ13	40
24	0402/C0G/18pF/50V	GCM1555C1H180JZ13	40
25	0402/C0G/22pF/50V	GCM1555C1H220JZ13	40
26	0402/C0G/27pF/50V	GCM1555C1H270JZ13	40
27	0402/C0G/33pF/50V	GCM1555C1H330JZ13	40
28	0402/C0G/39pF/50V	GCM1555C1H390JZ13	40
29	0402/C0G/47pF/50V	GCM1555C1H470JZ13	40
30	0402/C0G/56pF/50V	GCM1555C1H560JZ13	40
31	0402/C0G/68pF/50V	GCM1555C1H680JZ13	40
32	0402/C0G/82pF/50V	GCM1555C1H820JZ13	40
33	0402/C0G/100pF/50V	GCM1555C1H101JZ13	40
34	0402/C0G/120pF/50V	GCM1555C1H121JA16	40
35	0402/C0G/150pF/50V	GCM1555C1H151JA16	40
36	0402/C0G/180pF/50V	GCM1555C1H181JA16	40
37	0402/C0G/220pF/50V	GCM1555C1H221JA16	40
38	0402/C0G/270pF/50V	GCM1555C1H271JA16	40
39	0402/C0G/330pF/50V	GCM1555C1H331JA16	40
40	0402/C0G/390pF/50V	GCM1555C1H391JA16	40
41	0402/C0G/470pF/50V	GCM1555C1H471JA16	40
42	0402/X7R/220pF/50V	GCM155R71H221KA37	40
43	0402/X7R/330pF/50V	GCM155R71H331KA37	40
44	0402/X7R/470pF/50V	GCM155R71H471KA37	40
45	0402/X7R/680pF/50V	GCM155R71H681KA37	40
46	0402/X7R/1000pF/50V	GCM155R71H102KA37	40
47	0402/X7R/1500pF/50V	GCM155R71H152KA37	40
48	0402/X7R/2200pF/50V	GCM155R71H222KA37	40

### GCM15-KIT- - - - - A continued

No.	Description	Murata Global P/N	Qty.
49	0402/X7R/3300pF/50V	GCM155R71H332KA37	40
50	0402/X7R/4700pF/50V	GCM155R71H472KA37	40
51	0402/X7R/6800pF/50V	GCM155R71H682KA55	40
52	0402/X7R/10000pF/50V	GCM155R71H103KA55	40
53	0402/X7R/15000pF/50V	GCM155R71H153KA55	40
54	0402/X7R/22000pF/50V	GCM155R71H223KA55	40
55	0402/X7R/10000pF/25V	GCM155R71E103KA37	40
56	0402/X7R/15000pF/25V	GCM155R71E153KA55	40
57	0402/X7R/22000pF/25V	GCM155R71E223KA55	40
58	0402/X7R/33000pF/25V	GCM155R71E333KA55	40
59	0402/X7R/47000pF/25V	GCM155R71E473KA55	40
60	0402/X7R/68000pF/16V	GCM155R71C683KA55	40
61	0402/X7R/0.1uF/16V	GCM155R71C104KA55	40

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

# CERAMIC CHIP CAPACITORS

Automotive Grade 0603 – 1206 (50 VDC)

- GCM series is for power-train and automotive safety equipment. GRM series is available for other automotive equipment such as comfort, security, information and entertainment.
- GCM series meets AEC-Q200 requirements.
- GCM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- No polarity
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.

## GCM- - -KIT-C0G- - - -A

No.	Description	Murata Global P/N	Qty.
1	0603/C0G/1.0pF/50V	GCM1885C1H1R0CZ13	20
2	0603/C0G/1.2pF/50V	GCM1885C1H1R2CZ13	20
3	0603/C0G/1.5pF/50V	GCM1885C1H1R5CZ13	20
4	0603/C0G/1.8pF/50V	GCM1885C1H1R8CZ13	20
5	0603/C0G/2.0pF/50V	GCM1885C1H2R0CZ13	20
6	0603/C0G/2.2pF/50V	GCM1885C1H2R2CZ13	20
7	0603/C0G/2.7pF/50V	GCM1885C1H2R7CZ13	20
8	0603/C0G/3.0pF/50V	GCM1885C1H3R0CZ13	20
9	0603/C0G/3.3pF/50V	GCM1885C1H3R3CZ13	20
10	0603/C0G/3.9pF/50V	GCM1885C1H3R9CZ13	20
11	0603/C0G/4.0pF/50V	GCM1885C1H4R0CZ13	20
12	0603/C0G/4.7pF/50V	GCM1885C1H4R7CZ13	20
13	0603/C0G/5.0pF/50V	GCM1885C1H5R0CZ13	20
14	0603/C0G/5.6pF/50V	GCM1885C1H5R6DZ13	20
15	0603/C0G/6.0pF/50V	GCM1885C1H6R0DZ13	20
16	0603/C0G/6.8pF/50V	GCM1885C1H6R8DZ13	20
17	0603/C0G/7.0pF/50V	GCM1885C1H7R0DZ13	20
18	0603/C0G/8.0pF/50V	GCM1885C1H8R0DZ13	20
19	0603/C0G/8.2pF/50V	GCM1885C1H8R2DZ13	20
20	0603/C0G/9.0pF/50V	GCM1885C1H9R0DZ13	20
21	0603/C0G/10pF/50V	GCM1885C1H100JA16	20
22	0603/C0G/12pF/50V	GCM1885C1H120JA16	20
23	0603/C0G/15pF/50V	GCM1885C1H150JA16	20
24	0603/C0G/18pF/50V	GCM1885C1H180JA16	20
25	0603/C0G/22pF/50V	GCM1885C1H220JA16	20
26	0603/C0G/27pF/50V	GCM1885C1H270JA16	20
27	0603/C0G/33pF/50V	GCM1885C1H330JA16	20
28	0603/C0G/39pF/50V	GCM1885C1H390JA16	20
29	0603/C0G/47pF/50V	GCM1885C1H470JA16	20
30	0603/C0G/56pF/50V	GCM1885C1H560JA16	20
31	0603/C0G/68pF/50V	GCM1885C1H680JA16	20
32	0603/C0G/82pF/50V	GCM1885C1H820JA16	20
33	0603/C0G/100pF/50V	GCM1885C1H101JA16	20
34	0603/C0G/120pF/50V	GCM1885C1H121JA16	20
35	0603/C0G/150pF/50V	GCM1885C1H151JA16	20
36	0603/C0G/180pF/50V	GCM1885C1H181JA16	20
37	0603/C0G/220pF/50V	GCM1885C1H221JA16	20
38	0603/C0G/270pF/50V	GCM1885C1H271JA16	20
39	0603/C0G/330pF/50V	GCM1885C1H331JA16	20
40	0603/C0G/390pF/50V	GCM1885C1H391JA16	20
41	0603/C0G/470pF/50V	GCM1885C1H471JA16	20
42	0603/C0G/560pF/50V	GCM1885C1H561JA16	20
43	0603/C0G/680pF/50V	GCM1885C1H681JA16	20
44	0603/C0G/820pF/50V	GCM1885C1H821JA16	20
45	0603/C0G/1000pF/50V	GCM1885C1H102JA16	20
46	0603/C0G/1200pF/50V	GCM1885C1H122JA16	20
47	0603/C0G/1500pF/50V	GCM1885C1H152JA16	20
48	0603/C0G/1800pF/50V	GCM1885C1H182JA16	20

## GCM- - -KIT-C0G- - - -A continued

No.	Description	Murata Global P/N	Qty.
49	0603/C0G/2200pF/50V	GCM1885C1H222JA16	20
50	0603/C0G/2700pF/50V	GCM1885C1H272JA16	20
51	0805/C0G/3300pF/50V	GCM2165C1H332JA16	20
52	0805/C0G/3900pF/50V	GCM2165C1H392JA16	20
53	0805/C0G/4700pF/50V	GCM2165C1H472JA16	20
54	0805/C0G/5600pF/50V	GCM2195C1H562JA16	20
55	0805/C0G/6800pF/50V	GCM2195C1H682JA16	20
56	0805/C0G/8200pF/50V	GCM2195C1H822JA16	20
57	0805/C0G/10000pF/50V	GCM2195C1H103JA16	20
58	1206/C0G/12000pF/50V	GCM3195C1H123JA16	20
59	1206/C0G/15000pF/50V	GCM3195C1H153JA16	20
60	1206/C0G/18000pF/50V	GCM3195C1H183JA16	20
61	1206/C0G/22000pF/50V	GCM3195C1H223JA16	20

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

DESIGN ENGINEERING KITS

# CERAMIC CHIP CAPACITORS

Automotive Grade 0603 – 1210 (10 to 50 VDC)

- GCM series is for power-train and automotive safety equipment. GRM series is available for other automotive equipment such as comfort, security, information and entertainment.
- GCM series meets AEC-Q200 requirements.
- GCM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- TA chip capacitor replacement product lineup is available in X7R (X7S) temperature characteristics.
- No polarity
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.

## GCM – – –KIT-X7R – – – –A

No.	Description	Murata Global P/N	Qty.
1	0603/X7R/1000pF/50V	GCM188R71H102KA37	20
2	0603/X7R/1500pF/50V	GCM188R71H152KA37	20
3	0603/X7R/2200pF/50V	GCM188R71H222KA37	20
4	0603/X7R/3300pF/50V	GCM188R71H332KA37	20
5	0603/X7R/4700pF/50V	GCM188R71H472KA37	20
6	0603/X7R/6800pF/50V	GCM188R71H682KA37	20
7	0603/X7R/10000pF/50V	GCM188R71H103KA37	20
8	0603/X7R/15000pF/50V	GCM188R71H153KA37	20
9	0603/X7R/22000pF/50V	GCM188R71H223KA37	20
10	0603/X7R/33000pF/50V	GCM188R71H333KA55	20
11	0603/X7R/47000pF/50V	GCM188R71H473KA55	20
12	0603/X7R/68000pF/50V	GCM188R71H683KA57	20
13	0603/X7R/0.1uF/50V	GCM188R71H104KA57	20
14	0603/X7R/33000pF/25V	GCM188R71E333KA37	20
15	0603/X7R/47000pF/25V	GCM188R71E473KA37	20
16	0603/X7R/0.15uF/25V	GCM188R71E154KA37	20
17	0603/X7R/0.22uF/25V	GCM188R71E224KA55	20
18	0603/X7R/0.47uF/25V	GCM188R71E474KA64	20
19	0603/X7R/68000pF/16V	GCM188R71C683KA37	20
20	0603/X7R/0.1uF/16V	GCM188R71C104KA37	20
21	0603/X7R/0.33uF/16V	GCM188R71C334KA37	20
22	0603/X7R/0.47uF/16V	GCM188R71C474KA55	20
23	0603/X7S/1uF/16V	GCM188C71C105KA64	20
24	0805/X7R/0.15uF/50V	GCM21BR71H154KA37	20
25	0805/X7R/0.22uF/50V	GCM21BR71H224KA37	20
26	0805/X7R/0.33uF/50V	GCM219R71H334KA55	20
27	0805/X7R/0.47uF/50V	GCM21BR71H474KA55	20
28	0805/X7R/0.47uF/25V	GCM219R71E474KA55	20
29	0805/X7R/0.68uF/25V	GCM21BR71E684KA55	20
30	0805/X7R/1uF/25V	GCM21BR71E105KA56	20
31	0805/X7R/2.2uF/25V	GCM21BR71E225KA73	20
32	0805/X7R/0.68uF/16V	GCM219R71C684KA37	20
33	0805/X7R/1uF/16V	GCM219R71C105KA37	20
34	0805/X7R/1.5uF/16V	GCM21BR71C155KA37	20
35	0805/X7R/2.2uF/16V	GCM21BR71C225KA64	20
36	0805/X7R/3.3uF/16V	GCM21BR71C335KA73	20
37	0805/X7S/4.7uF/10V	GCM21BC71A475KA73	20
38	1206/X7R/1uF/50V	GCM31MR71H105KA55	20
39	1206/X7R/2.2uF/50V	GCM31CR71H225KA55	20
40	1206/X7R/2.2uF/25V	GCM31MR71E225KA57	20
41	1206/X7R/3.3uF/25V	GCM31MR71E335KA57	20
42	1206/X7R/4.7uF/25V	GCM31CR71E475KA55	20
43	1206/X7R/10uF/10V	GCM31CR71A106KA64	20
44	1206/X7R/22uF/6.3V	GCM31CR70J226KE23	20
45	1210/X7R/3.3uF/50V	GCM32DR71H335KA55	20
46	1210/X7R/4.7uF/50V	GCM32ER71H475KA55	20

## GCM – – –KIT-X7R – – – –A continued

No.	Description	Murata Global P/N	Qty.
47	1210/X7R/10uF/25V	GCM32ER71E106KA57	20
48	1210/X7R/10uF/16V	GCM32DR71C106KA37	20
49	1210/X7R/22uF/10V	GCM32ER71A226KE12	20
50	1210/X7R/47uF/6.3V	GCM32ER70J476KE19	20

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

## CERAMIC CHIP CAPACITORS

Automotive Grade 0603 – 1206 (100 VDC)

- GCM series is for power-train and automotive safety equipment. GRM series is available for other automotive equipment such as comfort, security, information and entertainment.
- GCM series meets AEC-Q200 requirements.
- GCM series is offered with a Ni barrier termination plated with Matte Tin (Sn), and is RoHS compliant.
- No polarity
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.

### GCM — — — KIT-100V — — — A

No.	Description	Murata Global P/N	Qty.
1	0603/C0G/10pF/100V	GCM1885C2A100JA16	20
2	0603/C0G/12pF/100V	GCM1885C2A120JA16	20
3	0603/C0G/15pF/100V	GCM1885C2A150JA16	20
4	0603/C0G/18pF/100V	GCM1885C2A180JA16	20
5	0603/C0G/22pF/100V	GCM1885C2A220JA16	20
6	0603/C0G/27pF/100V	GCM1885C2A270JA16	20
7	0603/C0G/33pF/100V	GCM1885C2A330JA16	20
8	0603/C0G/39pF/100V	GCM1885C2A390JA16	20
9	0603/C0G/47pF/100V	GCM1885C2A470JA16	20
10	0603/C0G/56pF/100V	GCM1885C2A560JA16	20
11	0603/C0G/68pF/100V	GCM1885C2A680JA16	20
12	0603/C0G/82pF/100V	GCM1885C2A820JA16	20
13	0603/C0G/100pF/100V	GCM1885C2A101JA16	20
14	0603/C0G/120pF/100V	GCM1885C2A121JA16	20
15	0603/C0G/150pF/100V	GCM1885C2A151JA16	20
16	0603/C0G/180pF/100V	GCM1885C2A181JA16	20
17	0603/C0G/220pF/100V	GCM1885C2A221JA16	20
18	0603/C0G/270pF/100V	GCM1885C2A271JA16	20
19	0603/C0G/330pF/100V	GCM1885C2A331JA16	20
20	0603/C0G/390pF/100V	GCM1885C2A391JA16	20
21	0603/C0G/470pF/100V	GCM1885C2A471JA16	20
22	0603/C0G/560pF/100V	GCM1885C2A561JA16	20
23	0603/C0G/680pF/100V	GCM1885C2A681JA16	20
24	0603/C0G/820pF/100V	GCM1885C2A821JA16	20
25	0603/C0G/1000pF/100V	GCM1885C2A102JA16	20
26	0603/C0G/1200pF/100V	GCM1885C2A122JA16	20
27	0603/C0G/1500pF/100V	GCM1885C2A152JA16	20
28	0805/C0G/1800pF/100V	GCM2165C2A182JA16	20
29	0805/C0G/2200pF/100V	GCM2165C2A222JA16	20
30	0805/C0G/2700pF/100V	GCM2165C2A272JA16	20
31	0805/C0G/3300pF/100V	GCM2165C2A332JA16	20
32	1206/C0G/3900pF/100V	GCM3195C2A392JA16	20
33	1206/C0G/4700pF/100V	GCM3195C2A472JA16	20
34	1206/C0G/5600pF/100V	GCM3195C2A562JA16	20
35	0603/X7R/1000pF/100V	GCM188R72A102KA37	20
36	1206/C0G/8200pF/100V	GCM3195C2A822JA16	20
37	1206/C0G/10000pF/100V	GCM3195C2A103JA16	20
38	1206/C0G/6800pF/100V	GCM3195C2A682JA16	20
39	0603/X7R/1500pF/100V	GCM188R72A152KA37	20
40	0603/X7R/2200pF/100V	GCM188R72A222KA37	20
41	0603/X7R/3300pF/100V	GCM188R72A332KA37	20
42	0603/X7R/4700pF/100V	GCM188R72A472KA37	20
43	0603/X7R/6800pF/100V	GCM188R72A682KA37	20
44	0603/X7R/10000pF/100V	GCM188R72A103KA37	20
45	0603/X7R/15000pF/100V	GCM188R72A153KA37	20
46	0603/X7R/22000pF/100V	GCM188R72A223KA37	20
47	0603/X7R/0.1uF/100V	GCM188R72A104KA64	20
48	0805/X7R/33000pF/100V	GCM219R72A333KA37	20

### GCM — — — KIT-100V — — — A continued

No.	Description	Murata Global P/N	Qty.
49	0805/X7R/47000pF/100V	GCM21BR72A473KA37	20
50	0805/X7R/68000pF/100V	GCM21BR72A683KA37	20
51	0805/X7R/0.1uF/100V	GCM21BR72A104KA37	20
52	1206/X7R/0.15uF/100V	GCM31MR72A154KA37	20
53	1206/X7R/0.22uF/100V	GCM31MR72A224KA37	20

NOTE: For Ceramic Chip Capacitors, dashes are part of the part number and must be included when placing an order.

## RADIAL LEADED MONOLITHIC CERAMIC CHIP CAPACITORS (50 to 630 VDC)

### RPE 100 VDC and less

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Small dimensions, large capacitance, and a capacity volume ratio of 10 $\mu$ F/cm cube, close to that of electrolytic capacitors. These do not have polarity.
- Excellent frequency characteristics and due to these small internal inductance are suitable for high frequency.
- Epoxy coated type which are not highly flammable, having characteristics equivalent to the UL94V-0 standard.
- No polarity
- Stringent dimensional tolerances allow highly reliable, high speed automatic chip placement on PCBs.

### RDE 250 and 630 VDC

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Small size and large capacitance
- Low ESR characteristics for high frequency
- Epoxy coated type which are not highly flammable, having characteristics equivalent to the UL94V-0 standard.
- No polarity
- Application only for consumer electronics equipment.

## MEDIUM VOLTAGE MONOLITHIC CERAMIC CHIP CAPACITORS (250 to 3.15 KV)

### U2J, 250V, 630V, 1KV, 2KV, 3.15KV

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Murata's original internal electrode structure realizes high flash-over voltage.
- A new monolithic structure for small, surface-mountable devices capable of operating at high voltage levels.
- Sn-plated external electrodes realize good solderability.
- Use the GRM21/31 type with flow or reflow soldering, and other types with reflow soldering only.
- Low-loss and suitable for high frequency circuits
- Working VDC: 250V, 630V, 1kV, 2kV, 3.15kV

### X7R, 250V, 630V

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- A new monolithic structure for small, high capacitance capable of operating at high voltage levels.
- Sn-plated external electrodes realizes good solderability.
- Use the GRM18/21/31 types with flow or reflow soldering, and other types with reflow soldering only.
- Working VDC: 250V, 630V

### GR4, X7R, 2KV

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- These items are designed specifically for telecommunication devices (IEEE802.3) in Ethernet LAN.
- A new monolithic structure for small, high capacitance components capable of operating at high voltage levels.
- Sn-plated external electrodes realizes good solderability.
- Only for reflow soldering
- The low-profile type (thickness: 1.5mm max.) is available. Fit for use on thinner type equipment.
- Working Voltage: 2000V

## RADIAL LEADED MEDIUM VOLTAGE DISC CAPACITORS (500 to 6.3 KV)

### DES, DEA, DEB, DEH and DEC Series

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Operating temperature range is guaranteed up to 125 degree C.
- Coated with flame-retardant epoxy resin (equivalent to UL94V-0 standard).
- Taping available for automatic insertion.
- Available product for RoHS Restriction (EU Directive 2002/95/EC).
- Working Voltages: DES series: 500 & 1KVDC; DEA, DEB, and DEH series: 1KV, 2KV, 3.15KV; DEC Series: 6.3 KVDC



## CERAMIC CHIP SAFETY CAPACITORS (250 VDC)

### GD Series SMD

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- A new monolithic structure for small, high capacitance capable of operating at high voltage levels.
- The type GD can be used as a Y3-class capacitor.
- Available for equipment based on IEC/EN60950 and UL1950.
- +125 degree C guaranteed
- Only for reflow soldering
- The low-profile type (thickness: 1.5mm max.) is available. Fit for use on thinner type equipment.
- Working Voltage: 250 VAC

### GF Series SMD

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- A new monolithic structure for small, high capacitance capable of operating at high voltage levels.
- The type GF can be used as a Y2-class capacitor.
- Available for equipment based on IEC/EN60950 and UL1950. The GA352/355 types are available for equipment based on IEC/EN60065, UL1492, and UL6500.
- +125 degree C guaranteed
- Only for reflow soldering
- The low-profile type (thickness: 1.5mm max.) is available. Fit for use on thinner type equipment.
- Working Voltage: 250 VAC

## RADIAL LEADED DISC SAFETY CAPACITORS (250 VAC)

### KX Series Leaded Safety Kit

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Operating temperature range guaranteed up to 125 degrees (UL: 85 deg.)
- Dielectric strength: AC4000V
- Class X1/Y1 capacitors which are recognized by UL/CSA/BSI/SEMKO/SEV/VDE/FIMKO/NEMKO/DEMKO/IMQ.
- Possible to use with a component in appliance requiring reinforced insulation and double insulation based on UL1492, IEC60065 and IEC60950.
- Coated with flame-retardant epoxy resin (conforming to UL94V-0 standard).
- Cost-saving automatic insertion available.
- Available product for RoHS Restriction (EU Directive 2002/95/EC)
- Working Voltage: 250 VAC

### KY Series Leaded Safety Kit

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Operating temperature range guaranteed up to 125 degrees (UL: 85 deg.)
- Dielectric strength: AC2000V (In case of lead spacing F=5mm), AC2600V (In case of lead spacing F=7.5mm)
- Class X1/Y2 capacitors which are recognized by UL/CSA/BSI/SEMKO/SEV/VDE/FIMKO/NEMKO/DEMKO/NSW.
- Coated with flame-retardant epoxy resin (conforming to UL94V-0 standard).
- Cost-saving automatic insertion available.
- Available product for RoHS Restriction (EU Directive 2002/95/EC)
- Working Voltage: 250 VAC

## HIGH RF POWER LOW LOSS CERAMIC CHIP CAPACITORS

(up to 300MHz)

---

### **HPPB5 Series SMD**

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Size: 4642
- Temperature Coefficient: P90
- Voltage: 1000, 2500, 3600, 5000, and 5400VDC
- Cap Range: 1pF to 3000pF
- Frequency Range: Up to 300MHz.
- Excellent frequency characteristics and due to small internal inductance.  
These parts are suitable for high RF power applications.
- Nonmagnetic (SMD and Axial [flush mount] Ribbon Leaded)
- HPPB5 Series SMD or Ribbon Leaded

### **HPPAH Series SMD**

For availability check with your Murata Sales Contact. Part numbers in kits depend on application.

- Size: 2622
- Temperature Coefficient: P90
- Voltage: 300, 500, 1000, 1500, 2500VDC
- Cap Range: 1pF to 2700pF
- Frequency Range: Up to 300MHz.
- Excellent frequency characteristics and due to small internal inductance.  
These parts are suitable for high RF power applications.
- Nonmagnetic (SMD)

## MICROWAVE COAXIAL CONNECTORS

- The Microwave Switch Connectors provide an easy and reliable test point allowing for handsfree operation when verifying the designs functionality or when doing circuit modification.
- Popular applications include cell phones, GPS, WiMax, UWB, Bluetooth, Zigbee and WLAN products.
- Small size: SWF - 2.5 x 2.4 x 1.4mm (L x W x H)  
SWD - 3.0 x 3.0 x 1.75mm (L x W x H)
- Wide Operating Frequency Ranges - DC to 6GHz
- Low insertion loss - 0.1dB from DC to 3GHz and 0.2 max from 3 to 6GHz
- High engagement count: SWF - 100 cycles  
SWD - 500 cycles
- Reflow compatible with today's automated production processes
- RoHS compliant

### SWF SERIES KIT M1KMM8130-SWF01

No.	Description	Murata Global P/N	Qty.
1	Board Mounted Switch Connectors	MM8130-2600B	25
2	Manual Test Probe	MXHS83QE3000	1
3	Evaluation Board with Receptacle	MM8130-2600B with PCB	1
4	Instructional Guide	n/a	1

### SWD SERIES KIT M1KMM8430-SWD01

No.	Description	Murata Global P/N	Qty.
1	Board Mounted Switch Connectors	MM8430-2610B	25
2	Manual Test Probe	MXHS83QE3000	1
3	Evaluation Board with Receptacle	MM8430-2610B with PCB	1
4	Instructional Guide	n/a	1

- The HSC series of Ultra Small Cable Connectors allows design engineers an easy method of interconnecting two points for microwave signals.
- Typical applications include cellular phones, WLAN products, wireless modules, notebook computers and measuring equipment
- Small size - 2.0 x 2.0 x 0.6mm (L x W x H)
- Maximum mating height - 1.2mm
- High durability for engagements: 30 cycles
- Wide selection of cable options available
- RoHS compliant

### HSC SERIES KIT M1KMM4829-HSC01

No.	Description	Murata Global P/N	Qty.
1	Board Mounted Receptacle	MM4829-2702B	25
2	MW Coaxial Cable - 100mm	MXHP32HP1000	3
3	MW Coaxial Cable - 200mm	MXHP32XX2000	3
4	MW Coaxial Cable - 300mm	MXHP32HP3000	3
5	Engage/Disengage Tool	M19100	1
6	Evaluation Board with Receptacle	MM4829-2702B with PCB	1
7	Instructional Guide	n/a	1

## SURFACE MOUNT EMI FILTERS

### EKEMBL03D

■ CHIP FERRITE BEADS  
01005 / 0201 SIZE

No.	Part Number	Qty.
1	BLM02AG100SN1	10
2	BLM02AG700SN1	10
3	BLM02AG121SN1	10
4	BLM03AG100SN1	10
5	BLM03AG700SN1	10
6	BLM03AG800SN1	10
7	BLM03AG121SN1	10
8	BLM03AG241SN1	10
9	BLM03AG601SN1	10
10	BLM03AG102SN1	10
11	BLM03BB100SN1	10
12	BLM03BB220SN1	10
13	BLM03BB470SN1	10
14	BLM03BB750SN1	10
15	BLM03BB121SN1	10
16	BLM03BD750SN1	10
17	BLM03BD121SN1	10
18	BLM03BD241SN1	10
19	BLM03PG220SN1	10
20	BLM03PG330SN1	10

### EKEMBL15J

■ CHIP FERRITE BEADS  
0402 SIZE

No.	Part Number	Qty.
1	BLM15AG100SN1	10
2	BLM15AG700SN1	10
3	BLM15AG121SN1	10
4	BLM15AG221SN1	10
5	BLM15AG601SN1	10
6	BLM15AG102SN1	10
7	BLM15BA050SN1	10
8	BLM15BA100SN1	10
9	BLM15BA220SN1	10
10	BLM15BA330SN1	10
11	BLM15BA470SN1	10
12	BLM15BA750SN1	10
13	BLM15BB050SN1	10
14	BLM15BB100SN1	10
15	BLM15BB220SN1	10
16	BLM15BB470SN1	10
17	BLM15BB750SN1	10
18	BLM15BB121SN1	10
19	BLM15BB221SN1	10
20	BLM15BD750SN1	10
21	BLM15BD121SN1	10
22	BLM15BD221SN1	10
23	BLM15BD471SN1	10
24	BLM15BD601SN1	10
25	BLM15BD102SN1	10
26	BLM15BD182SN1	10
27	BLM15HD601SN1	10
28	BLM15HD102SN1	10
29	BLM15HD182SN1	10
30	BLM15HG601SN1	10
31	BLM15HG102SN1	10
32	BLM15HB121SN1	10
33	BLM15HB221SN1	10
34	BLM15EG121SN1	10
35	BLM15EG221SN1	10
36	BLM15GG221SN1	10
37	BLM15GG471SN1	10
38	BLM15GA750SN1	10
39	BLM15PG100SN1	10
40	BLM15PD300SN1	10
41	BLM15PD600SN1	10
42	BLM15PD800SN1	10
43	BLM15PD121SN1	10

### EKEMBL18G

■ CHIP FERRITE BEADS  
0603 SIZE

No.	Part Number	Qty.
1	BLM18AG121SN1	10
2	BLM18AG151SN1	10
3	BLM18AG221SN1	10
4	BLM18AG331SN1	10
5	BLM18AG471SN1	10
6	BLM18AG601SN1	10
7	BLM18AG102SN1	10
8	BLM18BA050SN1	10
9	BLM18BA100SN1	10
10	BLM18BA470SN1	10
11	BLM18BA750SN1	10
12	BLM18BA121SN1	10
13	BLM18BB050SN1	10
14	BLM18BB100SN1	10
15	BLM18BB220SN1	10
16	BLM18BB470SN1	10
17	BLM18BB600SN1	10
18	BLM18BB750SN1	10
19	BLM18BB121SN1	10
20	BLM18BB151SN1	10
21	BLM18BB221SN1	10
22	BLM18BB331SN1	10
23	BLM18BB471SN1	10
24	BLM18BD470SN1	10
25	BLM18BD121SN1	10
26	BLM18BD151SN1	10
27	BLM18BD221SN1	10
28	BLM18BD331SN1	10
29	BLM18BD421SN1	10
30	BLM18BD471SN1	10
31	BLM18BD601SN1	10
32	BLM18BD102SN1	10
33	BLM18BD152SN1	10
34	BLM18BD182SN1	10
35	BLM18BD222SN1	10
36	BLM18BD252SN1	10
37	BLM18PG300SN1	10
38	BLM18PG330SN1	10
39	BLM18PG600SN1	10
40	BLM18PG121SN1	10
41	BLM18PG181SN1	10
42	BLM18PG221SN1	10
43	BLM18PG331SN1	10
44	BLM18PG471SN1	10
45	BLM18KG260TN1	10
46	BLM18KG700TN1	10
47	BLM18KG121TN1	10
48	BLM18KG221SN1	10
49	BLM18KG331SN1	10
50	BLM18KG471SN1	10
51	BLM18KG601SN1	10
52	BLM18SG260TN1	10
53	BLM18SG700TN1	10
54	BLM18SG121TN1	10
55	BLM18SG221TN1	10
56	BLM18SG331TN1	10
57	BLM18RK121SN1	10
58	BLM18RK471SN1	10
59	BLM18RK601SN1	10
60	BLM18RK102SN1	10

## SURFACE MOUNT EMI FILTERS

### EKEMBL8GA

■ CHIP FERRITE BEADS 0603  
FOR HIGH FREQUENCY TYPE

No.	Part Number	Qty.
1	BLM18HG471SN1	10
2	BLM18HG601SN1	10
3	BLM18HG102SN1	10
4	BLM18HB121SN1	10
5	BLM18HB221SN1	10
6	BLM18HB331SN1	10
7	BLM18HD471SN1	10
8	BLM18HD601SN1	10
9	BLM18HD102SN1	10
10	BLM18HE601SN1	10
11	BLM18HE102SN1	10
12	BLM18HE152SN1	10
13	BLM18HK331SN1	10
14	BLM18HK471SN1	10
15	BLM18HK601SN1	10
16	BLM18HK102SN1	10
17	BLM18EG101TN1	10
18	BLM18EG121SN1	10
19	BLM18EG221TN1	10
20	BLM18EG221SN1	10
21	BLM18EG331TN1	10
22	BLM18EG391TN1	10
23	BLM18EG471SN1	10
24	BLM18EG601SN1	10
25	BLM18GG471SN1	10

### EKEMBL21D

■ CHIP FERRITE BEADS 0805, 1206, 1806  
FOR LARGE CURRENT P TYPE

No.	Part Number	Qty.
1	BLM21AG121SN1	10
2	BLM21AG151SN1	10
3	BLM21AG221SN1	10
4	BLM21AG331SN1	10
5	BLM21AG471SN1	10
6	BLM21AG601SN1	10
7	BLM21AG102SN1	10
8	BLM21BB050SN1	10
9	BLM21BB600SN1	10
10	BLM21BB750SN1	10
11	BLM21BB121SN1	10
12	BLM21BB221SN1	10
13	BLM21BB331SN1	10
14	BLM21BB471SN1	10
15	BLM21BD121SN1	10
16	BLM21BD221SN1	10
17	BLM21BD421SN1	10
18	BLM21BD471SN1	10
19	BLM21BD601SN1	10
20	BLM21BD102SN1	10
21	BLM21BD152SN1	10
22	BLM21BD182SN1	10
23	BLM21BD222SN1	10
24	BLM21BD222TN1	10
25	BLM21BD272SN1	10
26	BLM21PG220SN1	10
27	BLM21PG300SN1	10
28	BLM21PG600SN1	10
29	BLM21PG221SN1	10
30	BLM21PG331SN1	10
31	BLM31PG330SN1	10
32	BLM31PG500SN1	10
33	BLM31PG121SN1	10
34	BLM31PG391SN1	10
35	BLM31PG601SN1	10
36	BLM41PG600SN1	10
37	BLM41PG750SN1	10
38	BLM41PG181SN1	10
39	BLM41PG471SN1	10
40	BLM41PG102SN1	10

### EKEMNFMCB

■ CHIP EMIFIL® 0603, 0805 CAPACITOR  
TYPE FOR SIGNAL LINES

No.	Part Number	Qty.
1	NFM18CC220U1C3	10
2	NFM18CC470U1C3	10
3	NFM18CC101R1C3	10
4	NFM18CC221R1C3	10
5	NFM18CC471R1C3	10
6	NFM18CC102R1C3	10
7	NFM18CC222R1C3	10
8	NFM18CC223R1C3	10
9	NFM21CC220U1H3	10
10	NFM21CC470U1H3	10
11	NFM21CC101U1H3	10
12	NFM21CC221R1H3	10
13	NFM21CC471R1H3	10
14	NFM21CC102R1H3	10
15	NFM21CC222R1H3	10
16	NFM21CC223R1H3	10

### EKEMFA31D

■ CHIP EMIFIL® 1206 CAPACITOR ARRAY  
TYPE, RC COMBINED ARRAY TYPE

No.	Part Number	Qty.
1	NFA31CC220S1E4	10
2	NFA31CC470S1E4	10
3	NFA31CC101S1E4	10
4	NFA31CC221S1E4	10
5	NFA31CC471R1E4	10
6	NFA31CC102R1E4	10
7	NFA31CC222R1E4	10
8	NFA31CC223R1C4	10
9	NFA31GD1006R84	10
10	NFA31GD1004704	10
11	NFA31GD1001014	10
12	NFA31GD4706R84	10
13	NFA31GD4703304	10
14	NFA31GD4704704	10
15	NFA31GD4701014	10
16	NFA31GD1016R84	10
17	NFA31GD1014704	10

## SURFACE MOUNT EMI FILTERS

### EKEMFL18E

■ CHIP EMIFIL® 0603, 0805, 1206  
LC COMBINED TYPE

No.	Part Number	Qty.
1	NFL18ST207X1C3	10
2	NFL18ST307X1C3	10
3	NFL18ST507X1C3	10
4	NFL18SP157X1A3	10
5	NFL18SP207X1A3	10
6	NFL18SP307X1A3	10
7	NFL18SP507X1A3	10
8	NFL21SP106X1C3	10
9	NFL21SP206X1C7	10
10	NFL21SP506X1C3	10
11	NFL21SP706X1C3	10
12	NFL21SP107X1C3	10
13	NFL21SP157X1C3	10
14	NFL21SP207X1C3	10
15	NFL21SP307X1C3	10
16	NFL21SP407X1C3	10
17	NFL21SP507X1C3	10
18	NFW31SP106X1E4	10
19	NFW31SP206X1E4	10
20	NFW31SP506X1E4	10
21	NFW31SP107X1E4	10
22	NFW31SP157X1E4	10
23	NFW31SP207X1E4	10
24	NFW31SP307X1E4	10
25	NFW31SP407X1E4	10
26	NFW31SP507X1E4	10

### EKEMNFMPH

■ CHIP EMIFIL® 0603, 0805, 1206, 1806  
FOR LARGE CURRENT

No.	Part Number	Qty.
1	NFM18PC104R1C3	10
2	NFM18PC224R0J3	10
3	NFM18PC474R0J3	10
4	NFM18PC105R0J3	10
5	NFM18PC225B0J3	10
6	NFM18PC225B1A3	10
7	NFM18PS474R0J3	10
8	NFM18PS105R0J3	10
9	NFM21PC104R1E3	10
10	NFM21PC224R1C3	10
11	NFM21PC474R1C3	10
12	NFM21PC105B1A3	10
13	NFM21PC105B1C3	10
14	NFM21PC225B0J3	10
15	NFM21PC475B1A3	10
16	NFE31PC276B0J3	10
17	NFE31PT152Z1E9	10
18	NFE31PT222Z1E9	10
19	NFE61PT102E1H9	10
20	NFE61PT472C1H9	10
21	NFM41PC204F1H3	10
22	NFM41PC155B1E3	10

### EKEMDL21J

■ CHIP COMMON MODE 0805, 1206  
CHOKE COILS

No.	Part Number	Qty.
1	DLW21HN670SQ2	10
2	DLW21HN900SQ2	10
3	DLW21HN121SQ2	10
4	DLW21HN181SQ2	10
5	DLW21SN670SQ2	10
6	DLW21SN900SQ2	10
7	DLW21SN121SQ2	10
8	DLW21SN181SQ2	10
9	DLW21SN261SQ2	10
10	DLW21SN371SQ2	10
11	DLW21SN670HQ2	10
12	DLW21SN900HQ2	10
13	DLW21SN121HQ2	10
14	DLW21SR670HQ2	10
15	DLP0NSN670HL2	10
16	DLP0NSN900HL2	10
17	DLP0NSN121HL2	10
18	DLP11SN670SL2	10
19	DLP11SN121SL2	10
20	DLP11SN161SL2	10
21	DLP11SN900HL2	10
22	DLP11SN201HL2	10
23	DLP11SN241HL2	10
24	DLP11SN281HL2	10
25	DLP11SN331HL2	10
26	DLP11SA350HL2	10
27	DLP11SA670HL2	10
28	DLP11SA900HL2	10
29	DLP2ADN670HL4	10
30	DLP2ADN900HL4	10
31	DLP2ADN121HL4	10
32	DLP2ADN161HL4	10
33	DLP2ADN201HL4	10
34	DLP2ADN241HL4	10
35	DLP2ADN281HL4	10

### EKEMFA20E

■ CHIP EMIFIL® LC COMBINED ARRAY  
TYPE

No.	Part Number	Qty.
1	NFA18SL137V1A45	10
2	NFA18SL187V1A45	10
3	NFA18SL207V1A45	10
4	NFA18SL307V1A45	10
5	NFA18SL407V1A45	10
6	NFA18SL487V1A45	10
7	NFA21SL506X1A48	10
8	NFA21SL806X1A48	10
9	NFA21SL207X1A45	10
10	NFA21SL207X1A48	10
11	NFA21SL307X1A45	10
12	NFA21SL307X1A48	10
13	NFA21SL287V1A45	10
14	NFA21SL287V1A48	10
15	NFA21SL317V1A45	10
16	NFA21SL317V1A48	10
17	NFA21SL337V1A45	10
18	NFA21SL337V1A48	10

### EKEMDCC5B

■ CHIP COMMON MODE CHOKE COILS  
5.0 x 5.0mm, 5.0 x 3.6mm FOR  
DC POWER LINE / SMD BLOCK TYPE  
EMIFIL® FOR POWER LINE

No.	Part Number	Qty.
1	DLW5AHN402SQ2	5
2	DLW5BSN191SQ2	5
3	DLW5BSN351SQ2	5
4	DLW5BSN102SQ2	5
5	DLW5BSN152SQ2	5
6	DLW5BSN302SQ2	5
7	DLW5BTN101SQ2	5
8	DLW5BTN251SQ2	5
9	DLW5BTN501SQ2	5
10	DLW5BTN102SQ2	5
11	DLW5BTN142SQ2	5
12	BNX022-01	5
13	BNX023-01	5

## SURFACE MOUNT INDUCTORS

### EKLMQ15SC

■ SURFACE MOUNT 0402  
HIGH FREQUENCY MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQG15HS1N0S02	10
2	LQG15HS1N1S02	10
3	LQG15HS1N2S02	10
4	LQG15HS1N3S02	10
5	LQG15HS1N5S02	10
6	LQG15HS1N6S02	10
7	LQG15HS1N8S02	10
8	LQG15HS2N0S02	10
9	LQG15HS2N2S02	10
10	LQG15HS2N4S02	10
11	LQG15HS2N7S02	10
12	LQG15HS3N0S02	10
13	LQG15HS3N3S02	10
14	LQG15HS3N6S02	10
15	LQG15HS3N9S02	10
16	LQG15HS4N3S02	10
17	LQG15HS4N7S02	10
18	LQG15HS5N1S02	10
19	LQG15HS5N6S02	10
20	LQG15HS6N2S02	10
21	LQG15HS6N8J02	10
22	LQG15HS7N5J02	10
23	LQG15HS8N2J02	10
24	LQG15HS9N1J02	10
25	LQG15HS10NJ02	10
26	LQG15HS12NJ02	10
27	LQG15HS15NJ02	10
28	LQG15HS18NJ02	10
29	LQG15HS22NJ02	10
30	LQG15HS27NJ02	10
31	LQG15HS33NJ02	10
32	LQG15HS39NJ02	10
33	LQG15HS47NJ02	10
34	LQG15HS56NJ02	10
35	LQG15HS68NJ02	10
36	LQG15HS82NJ02	10
37	LQG15HSR10J02	10
38	LQG15HSR12J02	10
39	LQG15HSR15J02	10
40	LQG15HSR18J02	10
41	LQG15HSR22J02	10
42	LQG15HSR27J02	10

### EKLMQG18B

■ SURFACE MOUNT 0603  
HIGH FREQUENCY MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQG18HN1N2S00	10
2	LQG18HN1N5S00	10
3	LQG18HN1N8S00	10
4	LQG18HN2N2S00	10
5	LQG18HN2N7S00	10
6	LQG18HN3N3S00	10
7	LQG18HN3N9S00	10
8	LQG18HN4N7S00	10
9	LQG18HN5N6S00	10
10	LQG18HN6N8J00	10
11	LQG18HN8N2J00	10
12	LQG18HN10NJ00	10
13	LQG18HN12NJ00	10
14	LQG18HN15NJ00	10
15	LQG18HN18NJ00	10
16	LQG18HN22NJ00	10
17	LQG18HN27NJ00	10
18	LQG18HN33NJ00	10
19	LQG18HN39NJ00	10
20	LQG18HN47NJ00	10
21	LQG18HN56NJ00	10
22	LQG18HN68NJ00	10
23	LQG18HN82NJ00	10
24	LQG18HNR10J00	10

### EKLMQP02B

■ SURFACE MOUNT 01005  
HIGH FREQUENCY FILM TYPE

No.	Part Number	Qty.
1	LQP02TN0N4S02	10
2	LQP02TN0N5S02	10
3	LQP02TN0N6S02	10
4	LQP02TN0N7S02	10
5	LQP02TN0N8S02	10
6	LQP02TN0N9S02	10
7	LQP02TN1N0S02	10
8	LQP02TN1N1S02	10
9	LQP02TN1N2S02	10
10	LQP02TN1N3S02	10
11	LQP02TN1N5S02	10
12	LQP02TN1N6S02	10
13	LQP02TN1N8S02	10
14	LQP02TN2N0S02	10
15	LQP02TN2N2S02	10
16	LQP02TN2N4S02	10
17	LQP02TN2N7S02	10
18	LQP02TN3N0S02	10
19	LQP02TN3N3S02	10
20	LQP02TN3N6S02	10
21	LQP02TN3N9S02	10
22	LQP02TN4N3S02	10
23	LQP02TN4N7S02	10
24	LQP02TN5N1S02	10
25	LQP02TN5N6S02	10
26	LQP02TN6N2J02	10
27	LQP02TN6N8J02	10
28	LQP02TN7N5J02	10
29	LQP02TN8N2J02	10
30	LQP02TN9N1J02	10
31	LQP02TN10NJ02	10

## SURFACE MOUNT INDUCTORS

### EKLMQP03J

■ SURFACE MOUNT 0201  
HIGH FREQUENCY FILM TYPE

No.	Part Number	Qty.
1	LQP03TN0N6B00	10
2	LQP03TN1N0B00	10
3	LQP03TN1N1B00	10
4	LQP03TN1N2B00	10
5	LQP03TN1N3B00	10
6	LQP03TN1N4B00	10
7	LQP03TN1N5B00	10
8	LQP03TN1N6B00	10
9	LQP03TN1N7B00	10
10	LQP03TN1N8B00	10
11	LQP03TN1N9B00	10
12	LQP03TN2N0B00	10
13	LQP03TN2N1B00	10
14	LQP03TN2N2B00	10
15	LQP03TN2N3B00	10
16	LQP03TN2N4B00	10
17	LQP03TN2N5B00	10
18	LQP03TN2N6B00	10
19	LQP03TN2N7B00	10
20	LQP03TN2N8B00	10
21	LQP03TN2N9B00	10
22	LQP03TN3N0B00	10
23	LQP03TN3N1B00	10
24	LQP03TN3N2B00	10
25	LQP03TN3N3B00	10
26	LQP03TN3N4B00	10
27	LQP03TN3N5B00	10
28	LQP03TN3N6B00	10
29	LQP03TN3N7B00	10
30	LQP03TN3N8B00	10
31	LQP03TN3N9B00	10
32	LQP03TN4N3H00	10
33	LQP03TN4N7H00	10
34	LQP03TN5N1H00	10
35	LQP03TN5N6H00	10
36	LQP03TN6N2H00	10
37	LQP03TN6N8H00	10
38	LQP03TN7N5H00	10
39	LQP03TN8N2H00	10
40	LQP03TN9N1H00	10
41	LQP03TN10NH00	10
42	LQP03TN12NH00	10
43	LQP03TN15NH00	10
44	LQP03TN18NH00	10
45	LQP03TN22NH00	10
46	LQP03TN27NH00	10
47	LQP03TN33NJ00	10
48	LQP03TN39NJ00	10
49	LQP03TN47NJ00	10
50	LQP03TN56NJ00	10
51	LQP03TN68NJ02	10
52	LQP03TN82NJ02	10
53	LQP03TNR10J02	10
54	LQP03TNR12J02	10

### EKLMQP15B

■ SURFACE MOUNT 0402  
HIGH FREQUENCY FILM TYPE

No.	Part Number	Qty.
1	LQP15MN1N0B02	10
2	LQP15MN1N1B02	10
3	LQP15MN1N2B02	10
4	LQP15MN1N3B02	10
5	LQP15MN1N5B02	10
6	LQP15MN1N6B02	10
7	LQP15MN1N8B02	10
8	LQP15MN2N0B02	10
9	LQP15MN2N2B02	10
10	LQP15MN2N4B02	10
11	LQP15MN2N7B02	10
12	LQP15MN3N0B02	10
13	LQP15MN3N3B02	10
14	LQP15MN3N6B02	10
15	LQP15MN3N9B02	10
16	LQP15MN4N3B02	10
17	LQP15MN4N7B02	10
18	LQP15MN5N1B02	10
19	LQP15MN5N6B02	10
20	LQP15MN6N2B02	10
21	LQP15MN6N8B02	10
22	LQP15MN7N5B02	10
23	LQP15MN8N2B02	10
24	LQP15MN9N1B02	10
25	LQP15MN10NG02	10
26	LQP15MN12NG02	10
27	LQP15MN15NG02	10
28	LQP15MN18NG02	10
29	LQP15MN22NG02	10
30	LQP15MN27NG02	10
31	LQP15MN33NG02	10

### EKLMQW04C

■ SURFACE MOUNT 03015  
HIGH FREQUENCY WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQW04AN1N1C00	10
2	LQW04AN1N8C00	10
3	LQW04AN2N7C00	10
4	LQW04AN3N0C00	10
5	LQW04AN3N6C00	10
6	LQW04AN3N9C00	10
7	LQW04AN4N3C00	10
8	LQW04AN4N7C00	10
9	LQW04AN5N1C00	10
10	LQW04AN5N6C00	10
11	LQW04AN6N2C00	10
12	LQW04AN6N8C00	10
13	LQW04AN7N5C00	10
14	LQW04AN8N2C00	10
15	LQW04AN9N1C00	10
16	LQW04AN10NH00	10
17	LQW04AN11NH00	10
18	LQW04AN12NH00	10
19	LQW04AN13NH00	10
20	LQW04AN15NH00	10
21	LQW04AN16NH00	10
22	LQW04AN18NH00	10
23	LQW04AN19NH00	10
24	LQW04AN20NH00	10
25	LQW04AN22NH00	10
26	LQW04AN23NH00	10
27	LQW04AN24NH00	10
28	LQW04AN25NH00	10
29	LQW04AN27NH00	10
30	LQW04AN33NH00	10



## SURFACE MOUNT INDUCTORS

### EKLMQW15H

■ SURFACE MOUNT 0402  
HIGH FREQUENCY WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQW15AN1N3C10	10
2	LQW15AN1N5B00	10
3	LQW15AN2N2C10	10
4	LQW15AN2N4B00	10
5	LQW15AN2N5B00	10
6	LQW15AN2N7B00	10
7	LQW15AN2N9B00	10
8	LQW15AN3N3D10	10
9	LQW15AN3N4C10	10
10	LQW15AN3N6C10	10
11	LQW15AN3N9B00	10
12	LQW15AN4N1B00	10
13	LQW15AN4N3B00	10
14	LQW15AN4N7B00	10
15	LQW15AN5N1B00	10
16	LQW15AN5N6C10	10
17	LQW15AN5N8B00	10
18	LQW15AN6N2B00	10
19	LQW15AN6N8G00	10
20	LQW15AN7N3G00	10
21	LQW15AN7N5G00	10
22	LQW15AN8N2G00	10
23	LQW15AN8N7G00	10
24	LQW15AN9N1G00	10
25	LQW15AN9N5G00	10
26	LQW15AN10NG00	10
27	LQW15AN11NG00	10
28	LQW15AN12NG00	10
29	LQW15AN13NG00	10
30	LQW15AN15NG00	10
31	LQW15AN16NG00	10
32	LQW15AN18NG00	10
33	LQW15AN19NG00	10
34	LQW15AN20NG00	10
35	LQW15AN22NG00	10
36	LQW15AN23NG00	10
37	LQW15AN24NG00	10
38	LQW15AN27NG00	10
39	LQW15AN30NG00	10
40	LQW15AN33NG00	10
41	LQW15AN36NG00	10
42	LQW15AN39NG00	10
43	LQW15AN40NG00	10
44	LQW15AN43NG00	10
45	LQW15AN47NG00	10
46	LQW15AN51NG00	10
47	LQW15AN56NG00	10
48	LQW15AN62NG00	10
49	LQW15AN68NG00	10
50	LQW15AN75NG00	10
51	LQW15AN82NG00	10
52	LQW15AN91NG00	10
53	LQW15ANR10J00	10
54	LQW15ANR12J00	10

### EKLMQ18GB

■ SURFACE MOUNT 0603 TIGHT  
TOLERANCE HIGH FREQUENCY WIRE  
WOUND TYPE

No.	Part Number	Qty.
1	LQW18AN3N6C00	10
2	LQW18AN3N9C00	10
3	LQW18AN4N3C00	10
4	LQW18AN5N6C00	10
5	LQW18AN6N2C00	10
6	LQW18AN6N8C00	10
7	LQW18AN10NG00	10
8	LQW18AN11NG00	10
9	LQW18AN12NG00	10
10	LQW18AN13NG00	10
11	LQW18AN15NG00	10
12	LQW18AN16NG00	10
13	LQW18AN18NG00	10
14	LQW18AN20NG00	10
15	LQW18AN22NG00	10
16	LQW18AN24NG00	10
17	LQW18AN27NG00	10
18	LQW18AN30NG00	10
19	LQW18AN33NG00	10
20	LQW18AN36NG00	10
21	LQW18AN39NG00	10
22	LQW18AN43NG00	10
23	LQW18AN47NG00	10
24	LQW18AN51NG00	10
25	LQW18AN56NG00	10
26	LQW18AN62NG00	10
27	LQW18AN68NG00	10
28	LQW18AN72NG00	10
29	LQW18AN75NG00	10
30	LQW18AN82NG00	10
31	LQW18AN91NG00	10
32	LQW18ANR10G00	10
33	LQW18ANR11G00	10
34	LQW18ANR12G00	10
35	LQW18ANR13G00	10
36	LQW18ANR15G00	10
37	LQW18ANR16G00	10
38	LQW18ANR18G00	10
39	LQW18ANR20G00	10
40	LQW18ANR22G00	10
41	LQW18ANR27G00	10
42	LQW18ANR33G00	10
43	LQW18ANR39G00	10
44	LQW18ANR47G00	10
45	LQW18AN3N9C10	10
46	LQW18AN6N8C10	10
47	LQW18AN10NG10	10
48	LQW18AN12NG10	10
49	LQW18AN18NG10	10
50	LQW18AN22NG10	10
51	LQW18AN27NG10	10

### EKLMQ18JB

■ SURFACE MOUNT 0603  
HIGH FREQUENCY WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQW18AN2N2D10	10
2	LQW18AN3N6D00	10
3	LQW18AN3N9D10	10
4	LQW18AN4N3D00	10
5	LQW18AN4N7D00	10
6	LQW18AN5N6D10	10
7	LQW18AN6N2D00	10
8	LQW18AN6N8D10	10
9	LQW18AN7N5D00	10
10	LQW18AN8N2D10	10
11	LQW18AN8N7D00	10
12	LQW18AN9N1D00	10
13	LQW18AN9N5D00	10
14	LQW18AN10NJ10	10
15	LQW18AN11NJ00	10
16	LQW18AN12NJ10	10
17	LQW18AN13NJ00	10
18	LQW18AN15NJ10	10
19	LQW18AN16NJ00	10
20	LQW18AN18NJ10	10
21	LQW18AN20NJ00	10
22	LQW18AN22NJ10	10
23	LQW18AN24NJ00	10
24	LQW18AN27NJ10	10
25	LQW18AN30NJ00	10
26	LQW18AN33NJ10	10
27	LQW18AN36NJ00	10
28	LQW18AN39NJ00	10
29	LQW18AN43NJ00	10
30	LQW18AN47NJ00	10
31	LQW18AN51NJ00	10
32	LQW18AN56NJ00	10
33	LQW18AN62NJ00	10
34	LQW18AN68NJ00	10
35	LQW18AN72NJ00	10
36	LQW18AN75NJ00	10
37	LQW18AN82NJ00	10
38	LQW18AN91NJ00	10
39	LQW18ANR10J00	10
40	LQW18ANR11J00	10
41	LQW18ANR12J00	10
42	LQW18ANR13J00	10
43	LQW18ANR15J00	10
44	LQW18ANR16J00	10
45	LQW18ANR18J00	10
46	LQW18ANR20J00	10
47	LQW18ANR22J00	10
48	LQW18ANR27J00	10
49	LQW18ANR33J00	10
50	LQW18ANR39J00	10
51	LQW18ANR47J00	10

## SURFACE MOUNT INDUCTORS

### EKLMQW21A

■ SURFACE MOUNT 0805 HIGH  
FREQUENCY WIRE WOUND FERRITE TYPE

No.	Part Number	Qty.
1	LQW21HNR47J00	10
2	LQW21HNR56J00	10
3	LQW21HNR68J00	10
4	LQW21HNR82J00	10
5	LQW21HN1R0J00	10
6	LQW21HN1R2J00	10
7	LQW21HN1R5J00	10
8	LQW21HN1R8J00	10
9	LQW21HN2R2J00	10

### EKLMQW2BB

■ SURFACE MOUNT 0805 HIGH  
FREQUENCY WIRE WOUND AIR CORE  
TYPE

No.	Part Number	Qty.
1	LQW2BHN2N7D13	10
2	LQW2BHN3N1D13	10
3	LQW2BHN3N3D13	10
4	LQW2BHN5N6D13	10
5	LQW2BHN6N8D13	10
6	LQW2BHN8N6D13	10
7	LQW2BHN10NJ13	10
8	LQW2BHN12NK13	10
9	LQW2BHN15NK13	10
10	LQW2BHN18NK13	10
11	LQW2BHN21NK13	10
12	LQW2BHN27NK13	10
13	LQW2BHN33NJ03	10
14	LQW2BHN39NJ03	10
15	LQW2BHN47NJ03	10
16	LQW2BHN56NJ03	10
17	LQW2BHN68NJ03	10
18	LQW2BHN82NJ03	10
19	LQW2BHNR10J03	10
20	LQW2BHNR12J03	10
21	LQW2BHNR15J03	10
22	LQW2BHNR18J03	10
23	LQW2BHNR22J03	10
24	LQW2BHNR27K03	10
25	LQW2BHNR33K03	10
26	LQW2BHNR39K03	10
27	LQW2BHNR47K03	10

### EKLMQM18B

■ SURFACE MOUNT 0603 GENERAL USE  
MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQM18NN47NM00	10
2	LQM18NN68NM00	10
3	LQM18NN82NM00	10
4	LQM18NNR10K00	10
5	LQM18NNR12K00	10
6	LQM18NNR15K00	10
7	LQM18NNR18K00	10
8	LQM18NNR22K00	10
9	LQM18NNR27K00	10
10	LQM18NNR33K00	10
11	LQM18NNR39K00	10
12	LQM18NNR47K00	10
13	LQM18NNR56K00	10
14	LQM18NNR68K00	10
15	LQM18NNR82K00	10
16	LQM18NN1R0K00	10
17	LQM18NN1R2K00	10
18	LQM18NN1R5K00	10
19	LQM18NN1R8K00	10
20	LQM18NN2R2K00	10

### EKLMM21NB

■ SURFACE MOUNT 0805 GENERAL USE  
MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQM21NNR10K10	10
2	LQM21NNR12K10	10
3	LQM21NNR15K10	10
4	LQM21NNR18K10	10
5	LQM21NNR22K10	10
6	LQM21NNR27K10	10
7	LQM21NNR33K10	10
8	LQM21NNR39K10	10
9	LQM21NNR47K10	10
10	LQM21NNR56K10	10
11	LQM21NNR68K10	10
12	LQM21NNR82K10	10
13	LQM21NN1R0K10	10
14	LQM21NN1R2K10	10
15	LQM21NN1R5K10	10
16	LQM21NN1R8K10	10
17	LQM21NN2R2K10	10
18	LQM21NN2R7K10	10
19	LQM21NN3R3K10	10
20	LQM21NN3R9K10	10
21	LQM21NN4R7K10	10

### EKLMH32MC

■ SURFACE MOUNT 1210 GENERAL USE  
WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH32MN1R0M23	10
2	LQH32MN1R2M23	10
3	LQH32MN1R5K23	10
4	LQH32MN1R8K23	10
5	LQH32MN2R2K23	10
6	LQH32MN2R7K23	10
7	LQH32MN3R3K23	10
8	LQH32MN3R9K23	10
9	LQH32MN4R7K23	10
10	LQH32MN5R6K23	10
11	LQH32MN6R8K23	10
12	LQH32MN8R2K23	10
13	LQH32MN100K23	10
14	LQH32MN120K23	10
15	LQH32MN150K23	10
16	LQH32MN180K23	10
17	LQH32MN220K23	10
18	LQH32MN270K23	10
19	LQH32MN330K23	10
20	LQH32MN390K23	10
21	LQH32MN470K23	10
22	LQH32MN560K23	10
23	LQH32MN680K23	10
24	LQH32MN820K23	10
25	LQH32MN101K23	10
26	LQH32MN121K23	10
27	LQH32MN151K23	10
28	LQH32MN181K23	10
29	LQH32MN221K23	10
30	LQH32MN271K23	10
31	LQH32MN331K23	10
32	LQH32MN391K23	10
33	LQH32MN471K23	10
34	LQH32MN561K23	10

## SURFACE MOUNT INDUCTORS

### EKLMH43MB

■ SURFACE MOUNT 1812 GENERAL USE WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH43MN1R0M03	10
2	LQH43MN1R2M03	10
3	LQH43MN1R5M03	10
4	LQH43MN1R8M03	10
5	LQJ43MN2R2M03	10
6	LQH43MN2R7M03	10
7	LQH43MN3R3M03	10
8	LQH43MN3R9M03	10
9	LQH43MN4R7K03	10
10	LQH43MN5R6K03	10
11	LQH43MN6R8K03	10
12	LQH43MN8R2K03	10
13	LQH43MN100K03	10
14	LQH43MN120K03	10
15	LQH43MN150K03	10
16	LQH43MN180K03	10
17	LQH43MN220K03	10
18	LQH43MN270K03	10
19	LQH43MN330K03	10
20	LQH43MN390K03	10
21	LQH43MN470K03	10
22	LQH43MN560K03	10
23	LQH43MN680K03	10
24	LQH43MN820K03	10
25	LQH43MN101K03	10
26	LQH43MN121K03	10
27	LQH43MN151K03	10
28	LQH43MN181K03	10
29	LQH43MN221K03	10
30	LQH43MN271K03	10
31	LQH43MN331K03	10
32	LQH43MN391K03	10
33	LQH43MN471K03	10
34	LQH43MN561K03	10
35	LQH43MN681K03	10
36	LQH43MN821K03	10
37	LQH43MN102K03	10
38	LQH43MN122K03	10
39	LQH43MN152K03	10
40	LQH43NN182K03	10
41	LQH43NN222K03	10

### EKLMQ2PC

■ SURFACE MOUNT 0805, 0806, 1008, 1206 FOR DC-DC CONVERTER MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQM21PNR47MC0	10
2	LQM21PN1R0MC0	10
3	LQM21PN1R5MC0	10
4	LQM21PN2R2MC0	10
5	LQM2MPNR47NG0	10
6	LQM2MPN1R0NG0	10
7	LQM2MPN1R5NG0	10
8	LQM2MPN2R2NG0	10
9	LQM2MPN3R3NG0	10
10	LQM2MPN4R7NG0	10
11	LQM2HPNR56ME0	10
12	LQM2HPNR47MG0	10
13	LQM2HPN1R0MG0	10
14	LQM2HPN1R5MG0	10
15	LQM2HPN2R2MG0	10
16	LQM2HPN3R3MG0	10
17	LQM2HPN4R7MG0	10
18	LQM2HPN1R0MJ0	10
19	LQM2HPN2R2MJ0	10
20	LQM2HPN3R3MJ0	10
21	LQM31PNR47MC0	10
22	LQM31PN1R0MC0	10
23	LQM31PN1R5MC0	10
24	LQM31PN2R2MC0	10
25	LQM31PNR47M00	10
26	LQM31PN1R0M00	10
27	LQM31PN1R5M00	10
28	LQM31PN2R2M00	10
29	LQM31PN3R3M00	10
30	LQM31PN4R7M00	10

### EKLMH2MCE

■ SURFACE MOUNT 0806 FOR DC-DC CONVERTER WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH2MCN1R0M02	10
2	LQH2MCN1R5M02	10
3	LQH2MCN2R2M02	10
4	LQH2MCN3R3M02	10
5	LQH2MCN4R7M02	10
6	LQH2MCN5R6M02	10
7	LQH2MCN6R8M02	10
8	LQH2MCN8R2M02	10
9	LQH2MCN100K02	10
10	LQH2MCN120K02	10
11	LQH2MCN150K02	10
12	LQH2MCN180K02	10
13	LQH2MCN220K02	10
14	LQH2MCN270K02	10
15	LQH2MCN330K02	10
16	LQH2MCN390K02	10
17	LQH2MCN470K02	10
18	LQH2MCN560K02	10
19	LQH2MCN680K02	10
20	LQH2MCN820K02	10
21	LQH2MCN1R0M52	10
22	LQH2MCN1R5M52	10
23	LQH2MCN2R2M52	10
24	LQH2MCN3R3M52	10
25	LQH2MCN4R7M52	10
26	LQH2MCN6R8M52	10
27	LQH2MCN100M52	10

## SURFACE MOUNT INDUCTORS

### EKLMQH3PA

■ SURFACE MOUNT 1210, 1212 FOR DC-DC CONVERTER WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH3NPN1R0NG0	10
2	LQH3NPN1R5NG0	10
3	LQH3NPN2R2NG0	10
4	LQH3NPN3R3NG0	10
5	LQH3NPN4R7NG0	10
6	LQH3NPN6R8NG0	10
7	LQH3NPN100NG0	10
8	LQH3NPN150NG0	10
9	LQH3NPN220MG0	10
10	LQH3NPN330MG0	10
11	LQH3NPN470MG0	10
12	LQH3NPN680MG0	10
13	LQH3NPN101MG0	10
14	LQH3NPN151MG0	10
15	LQH3NPN221MG0	10
16	LQH3NPN251MG0	10
17	LQH3NPN1R0NM0	10
18	LQH3NPN2R2NM0	10
19	LQH3NPN3R3NM0	10
20	LQH3NPN4R7NM0	10
21	LQH3NPN6R8NM0	10
22	LQH3NPN100NM0	10
23	LQH3NPN220MM0	10
24	LQH3NPN330MM0	10
25	LQH3NPN470MM0	10
26	LQH3NPN101MM0	10
27	LQH32PNR47NNO	10
28	LQH32PN1R0NNO	10
29	LQH32PN1R5NNO	10
30	LQH32PN2R2NNO	10
31	LQH32PN3R3NNO	10
32	LQH32PN4R7NNO	10
33	LQH32PN6R8NNO	10
34	LQH32PN100MNO	10
35	LQH32PN220MNO	10

### EKLMH32CC

■ SURFACE MOUNT 1210 FOR CHOKE WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH32CNR15M33	10
2	LQH32CNR27M33	10
3	LQH32CNR47M33	10
4	LQH32CN1R0M33	10
5	LQH32CN2R2M33	10
6	LQH32CN4R7M33	10
7	LQH32CN100K33	10
8	LQH32CN1R0M23	10
9	LQH32CN2R2M23	10
10	LQH32CN4R7M23	10
11	LQH32CN100K23	10
12	LQH32CN220K23	10
13	LQH32CN470K23	10
14	LQH32CN101K23	10
15	LQH32CN221K23	10
16	LQH32CN331K23	10
17	LQH32CN391K23	10
18	LQH32CN471K23	10
19	LQH32CN561K23	10
20	LQH32CN1R0M53	10
21	LQH32CN2R2M53	10
22	LQH32CN4R7M53	10
23	LQH32CN100K53	10
24	LQH32CN150K53	10
25	LQH32CN220K53	10
26	LQH32CN330K53	10
27	LQH32CN470K53	10
28	LQH32CN680K53	10
29	LQH32CN101K53	10

### EKLMH43CC

■ SURFACE MOUNT 1812 FOR CHOKE WIRE WOUND TYPE

No.	Part Number	Qty.
1	LQH43CN1R0M03	10
2	LQH43CN1R5M03	10
3	LQH43CN2R2M03	10
4	LQH43CN3R3M03	10
5	LQH43CN4R7M03	10
6	LQH43CN6R8M03	10
7	LQH43CN100K03	10
8	LQH43CN150K03	10
9	LQH43CN220K03	10
10	LQH43CN330K03	10
11	LQH43CN470K03	10
12	LQH43CN680K03	10
13	LQH43CN101K03	10
14	LQH43CN151K03	10
15	LQH43CN221K03	10
16	LQH43CN331K03	10
17	LQH43CN471K03	10

### EKLMM18FB

■ SURFACE MOUNT 0603 AND 0805 CHOKE MONOLITHIC TYPE

No.	Part Number	Qty.
1	LQM18FN1R0M00	10
2	LQM18FN2R2M00	10
3	LQM18FN4R7M00	10
4	LQM18FN100M00	10
5	LQM21FN1R0N00	10
6	LQM21FN2R2N00	10
7	LQM21FN4R7M70	10
8	LQM21FN4R7M80	10
9	LQM21FN100M70	10
10	LQM21FN100M80	10
11	LQM21FN220N00	10
12	LQM21FN470N00	10
13	LQM31FN100M00	10

## CHIP THERMISTORS

### NCKIT001

■ 0201, 0402 CHIP  
NTC THERMISTORS

No.	Part Number	Qty.
1	NCP15XC220J03RC	20
2	NCP15XC470J03RC	20
3	NCP15XF101J03RC	20
4	NCP15XM221J03RC	20
5	NCP15XQ471J03RC	20
6	NCP15XQ102J03RC	20
7	NCP15XW222J03RC	20
8	NCP15XM472J03RC	20
9	NCP15XW682J03RC	20
10	NCP15XH103J03RC	20
11	NCP15XV103J03RC	20
12	NCP15XW153J03RC	20
13	NCP15XW223J03RC	20
14	NCP15WL223J03RC	20
15	NCP15WB333J03RC	20
16	NCP15WL333J03RC	20
17	NCP15WB473J03RC	20
18	NCP15WL473J03RC	20
19	NCP15WD683J03RC	20
20	NCP15WL683J03RC	20
21	NCP15WF104J03RC	20
22	NCP15WL104J03RC	20
23	NCP15WM154J03RC	20
24	NCP15WM224J03RC	20
25	NCP15WM474J03RC	20
26	NCP15XH103F03RC	20
27	NCP15WB473F03RC	20
28	NCP15WF104F03RC	20
29	NCP03YS220J05RL	20
30	NCP03XH103J05RL	20
31	NCP03WB473J05RL	20
32	NCP03WF104F05RL	20

### NCKIT002

■ 0603 CHIP NTC THERMISTORS

No.	Part Number	Qty.
1	NCP18XM221J03RB	20
2	NCP18XM331J03RB	20
3	NCP18XQ471J03RB	20
4	NCP18XQ681J03RB	20
5	NCP18XQ102J03RB	20
6	NCP18XW152J03RB	20
7	NCP18XW222J03RB	20
8	NCP18XW332J03RB	20
9	NCP18XM472J03RB	20
10	NCP18XW682J03RB	20
11	NCP18XH103J03RB	20
12	NCP18XW153J03RB	20
13	NCP18XW223J03RB	20
14	NCP18WB333J03RB	20
15	NCP18WB473J03RB	20
16	NCP18WD683J03RB	20
17	NCP18WF104J03RB	20
18	NCP18WM154J03RB	20
19	NCP18WM224J03RB	20
20	NCP18WM474J03RB	20
21	NCP18XH103F03RB	20

### NCKIT003

■ 0201, 0402, 0603 CHIP  
NTC THERMISTORS

No.	Part Number	Qty.
1	NCP18XM472J03RB	20
2	NCP18XH103J03RB	20
3	NCP18XH103F03RB	20
4	NCP18WB473J03RB	20
5	NCP18WB473F10RB	20
6	NCP18WF104J03RB	20
7	NCP18WF104F12RB	20
8	NCP15XM472J03RC	20
9	NCP15XH103J03RC	20
10	NCP15XH103F03RC	20
11	NCP15WB473J03RC	20
12	NCP15WB473F03RC	20
13	NCP15WF104J03RC	20
14	NCP15WF104F03RC	20
15	NCP03XH103J05RL	20
16	NCP03WB473J05RL	20

### NCKIT051

■ 0402, 0603, 0805 CHIP  
NTC THERMISTORS FOR  
AUTOMOTIVE APPLICATIONS

No.	Part Number	Qty.
1	NCP15XF101J0SRC	20
2	NCP15XQ102J0SRC	20
3	NCP15XM472J0SRC	20
4	NCP15XH103F0SRC	20
5	NCP15XW223J0SRC	20
6	NCP15WB473F0SRC	20
7	NCP15WF104F0SRC	20
8	NCP15WM474J0SRC	20
9	NCP18XF101J0SRB	20
10	NCP18XQ102J0SRB	20
11	NCP18XM472J0SRB	20
12	NCP18XH103F0SRB	20
13	NCP18XW223J0SRB	20
14	NCP18WB473F1SRB	20
15	NCP18WF104F3SRB	20
16	NCP18WM474J0SRB	20

### PRKIT001

■ 0603 OVER CURRENT AND  
OVERHEAT PROTECTION

No.	Part Number	Qty.
1	PRG18BB471MB1RB	20
2	PRG18BB221MB1RB	20
3	PRG18BB101MB1RB	20
4	PRG18BB470MB1RB	20
5	PRG18BB330MB1RB	20
6	PRG21BB220MB1RK	20
7	PRG21BB150MB1RK	20
8	PRG18BC6R8MM1RB	20
9	PRG18BC4R7MM1RB	20
10	PRG21BC6R8MM1RA	20
11	PRG21BC4R7MM1RA	20
12	PRG21BC3R3MM1RA	20
13	PRG21BC2R2MM1RA	20
14	PRG21BC1R0MM1RA	20
15	PRG21BC0R6MM1RA	20
16	PRG21BC0R2MM1RA	20
17	PRF18BG471QB5RB	20
18	PRF18BF471QB5RB	20
19	PRF18BE471QB5RB	20
20	PRF18BD471QB5RB	20
21	PRF18BC471QB5RB	20
22	PRF18BB471QB5RB	20
23	PRF18BA471QB5RB	20
24	PRF18AR471QB5RB	20
25	PRF18AS471QB5RB	20
26	PRF15BC471QB1RC	20
27	PRF15BB471QB1RC	20
28	PRF15BA471QB1RC	20
29	PRF18BE471RB5RB	20
30	PRF18BD471RB5RB	20
31	PRF18BC471RB5RB	20
32	PRF18BB471RB5RB	20

## CHIP THERMISTORS

### PRKIT0S1

■ 0603, 0805 OVER CURRENT &  
OVER HEAT PROTECTION FOR  
AUTOMOTIVE APPLICATIONS

No.	Part Number	Qty.
1	PRF18AS471QS2RB	20
2	PRF18AR471QS2RB	20
3	PRF18BA471QS2RB	20
4	PRF18BB471QS2RB	20
5	PRF18BC471QS2RB	20
6	PRF18BD471QS2RB	20
7	PRF18BE471QS2RB	20
8	PRF18BF471QS2RB	20
9	PRF18BG471QS2RB	20
10	PRF18BB471RS2RB	20
11	PRF18BC471RS2RB	20
12	PRF18BD471RS2RB	20
13	PRF18BE471RS2RB	20
14	PRG21AR420MS1RA	20
15	PRG21AR220MS1RK	20

### NCPRKIT001

■ 0603, 0805 OVER CURRENT AND  
OVERHEAT PROTECTION

No.	Part Number	Qty.
1	NCP15XH103F03RC	20
2	NCP15WB473F03RC	20
3	NCP15WF104F03RC	20
4	NCP15XM472J03RC	20
5	NCP15XW223J03RC	20
6	NCP15WD683J03RC	20
7	NCP15WM224J03RC	20
8	NCP15WM474J03RC	20
9	NCP18XH103F03RB	20
10	NCP18WB473F10RB	20
11	NCP18WF104F12RB	20
12	NCP18XM472J03RB	20
13	NCP18XW223J03RB	20
14	NCP18WD683J03RB	20
15	NCP18WM224J03RB	20
16	NCP18WM474J03RB	20
17	PRG18BB101MB1RB	20
18	PRG18BB330MB1RB	20
19	PRG18BC6R8MM1RB	20
20	PRG18BC4R7MM1RB	20
21	PRG21BC3R3MM1RA	20
22	PRG21BC2R2MM1RA	20
23	PRG21BC1R0MM1RA	20
24	PRG21BC0R6MM1RA	20
25	PRG21BC0R2MM1RA	20
26	PRF18BE471QB5RB	20
27	PRF18BD471QB5RB	20
28	PRF18BC471QB5RB	20
29	PRF18BB471QB5RB	20
30	PRF18BA471QB5RB	20
31	PRF18AR471QB5RB	20
32	PRF18AS471QB5RB	20

## CHIP TRIMMING CAPACITORS

### 3MM LEADED TRIMMER CAPACITOR

- Sealed Construction
- Designed for auto-placement
- Available in 4 adjustment types

#### TZ03KT□1

No.	Global Part Number	Qty.
1	TZ03Z070□169B00	8
2	TZ03Z100□169B00	8
3	TZ03R121□169B00	8
4	TZ03R200□169B00	8
5	TZ03R300□169B00	8
6	TZ03P450□169B00	8
7	TZ03Z500□169B00	8
8	TZ03P600□169B00	8

B: Rear Adjustment  
E.: Top Adjustment  
F: Top Adjustment  
N: Rear Adjustment

Note: Please fill in the 1-letter code for type of adjustment into the □ when ordering.

### 4MM CHIP TRIMMER CAPACITOR

- Rectangular shape
- Designed for auto-placement
- Flow and reflow available

#### TZB4KT□□

No.	Global Part Number	Qty.
1	TZB4Z030□□10B00	20
2	TZB4Z060□□10B00	20
3	TZB4Z100□□10B00	20
4	TZB4R200□□10B00	20
5	TZB4P300□□10B00	20
6	TZB4P400□□10B00	20
7	TZB4Z250□□10B00	20
8	TZB4R500□□10B00	20

Note: Please fill in the 2-letter code for terminal shape and cover film into the □□ when ordering. See chart below for letter codes.  
Ex. AA = Top Adjust, Without Cover Film

First Letter	Terminal Type
A	Top Adjust
B	Top Adjust, Gull Wing
E	Leaded Read Adjust, Gull
Second Letter	Cover Film
A	Without Cover Film

### 3MM LOW PROFILE CHIP TRIMMER CAPACITOR

- Small Package
- Designed for auto-placement
- High resistance resin

#### TZC3KT11

No.	Global Part Number	Qty.
1	TZC3Z030A110B00	20
2	TZC3Z060A110B00	20
3	TZC3R100A110B00	20
4	TZC3P200A110B00	20
5	TZC3P300A110B00	20

### 2MM ULTRA SMALL SMD TRIMMER CAPACITOR

- Small and thin
- Designed for auto-placement
- Unique construction with no plastic

#### TZV2KT01

No.	Global Part Number	Qty.
1	TZV2Z2R5A110B00	20
2	TZV2Z030A110B00	20
3	TZV2Z060A110B00	20
4	TZV2Z100A110B00	20
5	TZV2R200A110B00	20

### 2MM ULTRA SMALL SMD TRIMMER CAPACITOR

- Small and thin
- Designed for auto-placement
- Unique construction with no plastic

#### TZY2KT01

No.	Global Part Number	Qty.
1	TZY2Z010A001B00	20
2	TZY2Z2R5A001B00	20
3	TZY2Z030A001B00	20
4	TZY2Z060A001B00	20
5	TZY2Z100A001B00	20
6	TZY2R200A001B00	20
7	TZY2R250A001B00	20
8	TZY2K450A001B00	20
9	KMDR060B00	1

### 2MM ULTRA SMALL SMD TRIMMER CAPACITOR

- Small and thin
- Designed for auto-placement
- Unique construction with no plastic

#### TZS2KT01

No.	Global Part Number	Qty.
1	TZS2Z060A001B00	20
2	TZS2Z100A001B00	20
3	TZS2R200A001B00	20
4	KMDR050B00	1

KMDR\*\*\* : Driver for adjustment

### 1MM ULTRA SMALL CHIP TRIMMER CAPACITOR

- Smallest package available for trimmer capacitor
- Excellent soldering heat resistance
- No plastic construction
- Pb/Lead free construction

#### TZR1KT01

No.	Global Part Number	Qty.
1	TZR1Z010A001B00	20
2	TZR1Z1R5A001B00	20
3	TZR1Z040A001B00	20
4	TZR1R080A001B00	20
5	KMDR160B00	1

KMDR\*\*\* : Driver for adjustment

## TRIMMER POTENTIOMETERS

### SINGLE-TURN CARBON CHIP 3.0MM PACKAGE

- Funnel shaped adjustment slot
- Miniature package
- High resistance to solder leaching

#### PVZ3KTA1

No.	Part Number	Qty.
1	PVZ3A471C01B00	20
2	PVZ3A102C01B00	20
3	PVZ3A472C01B00	20
4	PVZ3A103C01B00	20
5	PVZ3A473C01B00	20
6	PVZ3A104C01B00	20
7	PVZ3A474C01B00	20
8	PVZ3A105C01B00	20
9	KMDR080	1

### SINGLE-TURN CARBON CHIP 3.0MM PACKAGE

- Funnel shaped adjustment slot
- Miniature package
- High resistance to solder leaching

#### PVZ3KTK1

No.	Part Number	Qty.
1	PVZ3K471E01B00	20
2	PVZ3K102E01B00	20
3	PVZ3K472E01B00	20
4	PVZ3K103E01B00	20
5	PVZ3K473E01B00	20
6	PVZ3K104E01B00	20
7	PVZ3K474E01B00	20
8	PVZ3K105E01B00	20
9	KMDR080	1

### SINGLE-TURN CARBON CHIP 2.0MM PACKAGE

- Funnel shaped adjustment slot
- Miniature package
- High resistance to solder leaching

#### PVZ2KTA1

No.	Part Number	Qty.
1	PVZ2A471C04B00	20
2	PVZ2A102C04B00	20
3	PVZ2A472C04B00	20
4	PVZ2A103C04B00	20
5	PVZ2A473C04B00	20
6	PVZ2A104C04B00	20
7	PVZ2A474C04B00	20
8	PVZ2A105C04B00	20
9	KMDR190	1

KMDR\*\*\*\_Driver for adjustment

### SINGLE-TURN CARBON CHIP 3.0MM PACKAGE

- Low profile
- Funnel shaped adjustment slot
- Miniature package
- High resistance to solder leaching

#### PVZ3KTG1

No.	Part Number	Qty.
1	PVZ3G471C01 B00	20
2	PVZ3G102C01 B00	20
3	PVZ3G472C01 B00	20
4	PVZ3G103C01 B00	20
5	PVZ3G473C01 B00	20
6	PVZ3G104C01 B00	20
7	PVZ3G474C01 B00	20
8	PVZ3G105C01 B00	20
9	KMDR080B00	1

### SINGLE-TURN CERMET CHIP 2.0MM PACKAGE

- Available for flow and reflow soldering
- High reliability
- Unique sealed construction
- High resistance to solder leaching

#### PVA2KT01

No.	Part Number	Qty.
1	PVA2A471A01 B00	20
2	PVA2A102A01 B00	20
3	PVA2A472A01 B00	20
4	PVA2A103A01 B00	20
5	PVA2A473A01 B00	20
6	PVA2A104A01 B00	20
7	PVA2A474A01 B00	20
8	PVA2A105A01 B00	20
9	KMDR190B00	1

### MULTI-TURN CERMET CHIP 5.0MM PACKAGE

- 11 turns
- Compatible with VPS reflow soldering method
- Compatible with ultrasonic cleaning
- Clutch mechanism prevents excessive wiper rotation

#### PVG5KTA1

No.	Part Number	Qty.
1	PVG5A500C01B00	10
2	PVG5A101C01B00	10
3	PVG5A102C01B00	10
4	PVG5A502C01B00	10
5	PVG5A103C01B00	10
6	PVG5A503C01B00	10
7	PVG5A104C01B00	10
8	PVG5A105C01B00	10

### MULTI-TURN CERMET CHIP 5.0MM PACKAGE

- 11 turns
- Compatible with VPS reflow soldering method
- Compatible with ultrasonic cleaning
- Clutch mechanism prevents excessive wiper rotation

#### PVG5KTH1

No.	Part Number	Qty.
1	PVG5H500C03B00	10
2	PVG5H101C03B00	10
3	PVG5H102C03B00	10
4	PVG5H502C03B00	10
5	PVG5H103C03B00	10
6	PVG5H503C03B00	10
7	PVG5H104C03B00	10
8	PVG5H105C03B00	10

### SINGLE-TURN CERMET CHIP 3.0MM GULL WING LEAD PACKAGE

- Ultra small
- Withstands high temperature reflow soldering
- High resistance to solder leaching

#### PVG3KTA1

No.	Part Number	Qty.
1	PVG3A500C01B00	20
2	PVG3A101C01B00	20
3	PVG3A102C01B00	20
4	PVG3A502C01B00	20
5	PVG3A103C01B00	20
6	PVG3A503C01B00	20
7	PVG3A104C01B00	20
8	PVG3A105C01B00	20



## TRIMMER POTENTIOMETERS

### SINGLE-TURN CERMET CHIP 3.0MM J LEAD PACKAGE

- Ultra small
- Withstands high temperature reflow soldering
- High resistance to solder leaching
- Sealed construction

#### PVG3KTG1

No.	Part Number	Qty.
1	PVG3G500C01B00	20
2	PVG3G101C01B00	20
3	PVG3G102C01B00	20
4	PVG3G502C01B00	20
5	PVG3G103C01B00	20
6	PVG3G503C01B00	20
7	PVG3G104C01B00	20
8	PVG3G105C01B00	20

### SINGLE-TURN CERMET CHIP 4.0MM PACKAGE

- Available for flow and reflow soldering
- High reliability
- Unique sealed construction
- High resistance to soldering leaching

#### PVM4KTC1

No.	Part Number	Qty.
1	PVM4A500C01B00	20
2	PVM4A101C01B00	20
3	PVM4A102C01B00	20
4	PVM4A502C01B00	20
5	PVM4A103C01B00	20
6	PVM4A503C01B00	20
7	PVM4A104C01B00	20
8	PVM4A105C01B00	20

### SINGLE-TURN CERMET CHIP 4.0MM PACKAGE

- Available for flow and reflow soldering
- High reliability
- Unique sealed construction
- High resistance to soldering leaching

#### PVM4KTD1

No.	Part Number	Qty.
1	PVM4A500D01B00	20
2	PVM4A101D01B00	20
3	PVM4A102D01B00	20
4	PVM4A502D01B00	20
5	PVM4A103D01B00	20
6	PVM4A503D01B00	20
7	PVM4A104D01B00	20
8	PVM4A105D01B00	20

**⚠ Note:**

1. Export Control

⟨For customers outside Japan⟩

Murata products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.

⟨For customers in Japan⟩

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

2. Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.

- |                             |  |
|-----------------------------|--|
| ① Aircraft equipment        | ② Aerospace equipment  |
| ③ Undersea equipment        | ④ Power plant equipment  |
| ⑤ Medical equipment         | ⑥ Transportation equipment (vehicles, trains, ships, etc.)   |
| ⑦ Traffic signal equipment  | ⑧ Disaster prevention / crime prevention equipment   |
| ⑨ Data-processing equipment | ⑩ Application of similar complexity and/or reliability requirements to the applications listed above |

3. Product specifications are subject to change or our products may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.

4. Please read rating and ⚠ CAUTION (for storage, operating, rating, soldering, mounting and handling) to prevent smoking and/or burning, etc.

5. Please approve our product specifications or complete the approval sheet for product specifications before ordering.

6. Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.

7. No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

8. For status of ROHS compliance of our products, please consult our website.



*Innovator in Electronics*

2200 Lake Park Drive  
Smyrna, GA 30080

Phone: 770-436-1300

Fax: 770-436-3030

[www.murata-northamerica.com](http://www.murata-northamerica.com)

*For website information on:*

**Design Engineering Kits:**

[www.murata.com/kits](http://www.murata.com/kits)

**Design Tools:**

[www.murata.com/designlib/index.html](http://www.murata.com/designlib/index.html)

**Capacitors:**

[www.murata.com/cap/index.html](http://www.murata.com/cap/index.html)

**Connectors:**

[www.murata.com/catalog/o30e8.pdf](http://www.murata.com/catalog/o30e8.pdf)

**EMI Filters:**

[www.murata.com/emc/index.html](http://www.murata.com/emc/index.html)

**Inductors:**

[www.murata.com/coil/index.html](http://www.murata.com/coil/index.html)

**Thermistors/Trimmer Potentiometers:**

[www.murata.com/thermis/index.html](http://www.murata.com/thermis/index.html)

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)  
Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)