

## GRM series / Hi-Cap <1uF and over>

### Features

1. TA chip capacitor replacement product lineup is available in **X7R (X7S, X7T, X7U), X6S(X6T) and X5R(X5S)** temperature characteristics with a capacitance of **1uF and larger**.
2. The line of high volumetric capacitance ceramic chip capacitors is available in 2.5V,4V, 6.3V, 10V, 16V, 25V, 35V,50V and 100V.
3. No polarity.
4. GRM series is offered with a Ni barrier termination plated with Matte Tin, and is RoHS compliant.
5. Stringent dimensional tolerances allow highly reliable, high-speed automatic chip placement on PCBs.

### Global Part Numbering

**GR M 18 8 R6 0J 105 K A01 D**  
**-1- -2- -3- -4- -5- -6- -7- -8- -9- -10-**

#### -1-:Product ID

Code	Product
GR	MLCC

#### -2-:Series

Code	Product
M	Tin Plated Termination

#### -3-:Dimension (LxW)

Code	Dimension (LxW)
15	1.0x0.5mm (EIA:0402)
18	1.6x0.8mm (EIA:0603)
21	2.0x1.25mm (EIA:0805)
31	3.2x1.6mm (EIA:1206)
32	3.2x2.5mm (EIA:1210)

#### -4-:Dimension (T)

Code	Dimension (T)
3	0.33mm
5	0.5mm
6	0.6mm
8	0.8mm
9	0.85mm
A	1.0mm
M	1.15mm
B	1.25mm
N	1.35mm
C	1.6mm
R	1.8mm
D	2.0mm
E	2.5mm

#### -5-:Temperature Characteristics

Code	TC	Temp. Range	Cap. Change	Operating Temp.
R7	X7R	-55 to 125 degC	+/-15%	-55 to 125 degC
C7	X7S		+/-22%	
D7	X7T		+22/-33%	
E7	X7U		+22/-56%	
C8	X6S	-55 to 105 degC	+/-22%	-55 to 105 degC
D8	X6T		+22/-33%	
R6	X5R	-55 to 85 degC	+/-15%	-55 to 85 degC
C6	X5S		+/-22%	

#### -6-:Rated Voltage

Code	Rated Voltage
0E	DC 2.5V
0G	DC 4V
0J	DC 6.3V
1A	DC 10V
1C	DC 16V
1E	DC 25V
YA	DC 35V
1H	DC 50V
2A	DC 100V

#### -7-:Capacitance

Code	Capacitance
105	1uF
106	10uF
107	100uF

#### -8-:Capacitance Tolerance

Code	Cap. Tol.	TC
K	+/-10%	X7_, X6_, X5_
M	+/-20%	X7_, X6_, X5_

#### -9-:Individual Specification Code

#### -10-:Packaging

Code	Packaging
D	Φ180mm Paper Taping
L	Φ180mm Embossed Taping
J	Φ330mm Paper Taping
K	Φ330mm Embossed Taping

## GRM series / Hi-Cap <1uF and over>

### Chip size and Capacitance range

#### < X7R (X7S, X7T, X7U) >

Type	Size	WV	Capacitance(uF)						
			1	2.2	4.7	10	22	47	100
GRM15	0402	6.3	X7R	X7S	NEW				
		4	X7R	NEW					
GRM18	0603	35	X7R						
		25	X7R	X7S	NEW				
		16	X7R	X7S		X7S			
		10	NEW	X7R					
GRM21	0805	6.3		X7S					
		50	X7R	X7R					
		25	X7R	X7R					
		16		X7R	X7R				
		10			X7R	X7R			
GRM31	1206	6.3				X7R			
		4		NEW			X7U		
		100	X7R	X7R					
		50	X7R	X7R	X7R				
		25			X7R	X7R			
		16			X7T	X7R			
GRM32	1210	10					X7R		
		6.3					X7R		
		4					X7S	X7U	
		100		X7R		NEW			
		50			X7R	X7R			
		35				X7R			
		25				X7R	X7R	X7R	
GRM32	1210	16					X7R		
		10						X7R	
		6.3						X7R	
		4						X7R	X7U

#### < X6S(X6T) >

Type	Size	WV	Capacitance(uF)							
			1	2.2	4.7	10	22	47	100	150
GRM15	0402	16	NEW	X6S	NEW					
		10	X6S	X6S	NEW					
GRM18	0603	35	X6S	X6S	NEW					
		25	X6S	X6S	X6S					
		16	NEW	X6S	X6S					
		10		X6S		X6S				
		6.3		X6S	X6S	X6S				
GRM21	0805	4			X6S	X6S	X6S	NEW		
		2.5				X6S				
		35	X6S	X6S	X6S	X6S				
		25			X6S	X6S				
		16			X6S	X6S				
GRM31	1206	10				X6S				
		6.3				X6S	X6S			
		4				X6S	X6S	X6S	X6S	
		25				X6S	X6S			
GRM32	1210	16					X6S			
		10					X6S			
		6.3					X6S	X6S	X6S	
		4						X6S	X6S	
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4							X6S	X6T
GRM32	1210	2.5								
		4								

## GRM series / Hi-Cap <1uF and over>

### Chip size and Capacitance range

<X5R(X5S)>

Mass Production      Development

Type	Size	WV	Capacitance(uF)								
			1	2.2	4.7	10	22	47	100	150	
GRM15	0402	25	X5R	X5R	NEW						
		16	X5R	X5R	NEW						
		10	X5R	X5R	X5R	NEW					
		6.3		X5R	X5R	NEW					
		4			X5R	X5R					
		2.5					X5R				
GRM18	0603	50	X5R	X5R	NEW						
		35	NEW	X5R	X5R	NEW					
		25	X5R	X5R	X5R	X5R	NEW				
		16	X5R	X5R	X5R	X5R	NEW				
		10	X5R	X5R	X5R	X5R					
		6.3			X5R	X5R	X5R				
GRM21	0805	50		X5R	X5R	X5R					
		25		X5R	X5R	X5R	X5R				
		16		X5R	X5R	X5R					
		10			X5R	X5R	X5R				
		6.3				X5R	X5R	X5R			
		4						X5R			
GRM31	1206	50		X5R	X5R	X5R					
		35				X5R					
		25				X5R	X5R				
		16				X5R	X5R				
		10					X5R	X5R			
		6.3						X5R	X5R		
GRM32	1210	50				X5R					
		25					X5R				
		16						X5R			
		10							X5R		
		6.3								X5R	
		4									X5S

< Low profile series >

GRM18 series: 0.5mm Max  
 GRM21 series: 0.70mm Max, 0.95mm Max  
 GRM31 series: 0.95mm Max

Type	Size	Chip T (mmMax)	WV	Capacitance(uF)							
				1	2.2	4.7	10	22	47	100	
GRM15	0402	0.33	10	X5R							
			6.3								
			4								
GRM18	0603	0.5	25	X5R							
			16	X5R							
			10	X6S   X7T							
GRM21	0805	0.7	6.3	X6S							
			25	X5R							
			16	X7T   X6S	X5R						
		0.95	10	X5R	X5R	NEW					
			50	X5R	X5R	X5R					
			35	X6S	X6S	X5R					
GRM31	1206	0.7	25	X7R	X5R	X6S	X5R	X5R	NEW		
			16		X6S	X7R	X5R	X6S	X5R		
			10			X6S	X7T	X5R	X5R		
		0.95	6.3				X6S	X7T	X5R	X5R	X5R
			4							X5R	NEW
			25				X5R				

Regarding detailed specifications, please check catalog or product specification. Information in this PDF are as of Apr.2012.

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <X7R (X7S, X7T, X7U)>

Cap.	Size	WV	Chip T(mm)	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	M.P.	
1uF	0402	6.3	0.5+/-0.05	X7R	+/-10%	GRM155R70J105KA12D	100%	Available	Mass Production	NEW
		4	0.5+/-0.05	X7R	+/-10%	GRM155R70G105KA12D	150%	Available	Mass Production	NEW
	0603	35	0.8+/-0.1	X7R	+/-10%	GRM188R7YA105KA12D	100%	Available	Mass Production	
		25	0.8+/-0.1	X7R	+/-10%	GRM188R71E105KA12D	150%	Available	Mass Production	
		16	0.8+/-0.1	X7R	+/-10%	GRM188R71C105KA12D	150%	Available	Mass Production	
		10	0.5+0/-0.1	X7T	+/-10%	GRM185D71A105KE36D	150%	Available	Mass Production	
	0805	50	1.25+/-0.1	X7R	+/-10%	GRM21BR71H105KA12L	150%	Available	Mass Production	
		25	0.85+/-0.1	X7R	+/-10%	GRM219R71E105KA88D	200%	Available	Mass Production	
		16	0.6+/-0.1	X7T	+/-10%	GRM216D71C105KA12D	100%	Available	Mass Production	
	1206	100	1.6+/-0.2	X7R	+/-10%	GRM31CR72A105KA01L	200%	Available	Mass Production	
50		1.15+/-0.1	X7R	+/-10%	GRM31MR71H105KA88L	200%	Available	Mass Production		
2.2uF	0402	6.3	0.5+/-0.2	X7S	+/-10%	GRM155C70J225ME11D	150%	Available	Mass Production	NEW
		25	0.8+/-0.2	X7S	+/-10%	GRM188C71E225KE11D	150%	Available	Mass Production	NEW
	0603	16	0.8+/-0.2	X7S	+/-10%	GRM188C71C225KE11D	150%	Available	Mass Production	NEW
		10	0.8+/-0.1	X7R	+/-10%	GRM188R71A225KE15D	150%	Available	Mass Production	
		6.3	0.8+/-0.1	X7S	+/-10%	GRM188C70J225KE20D	150%	Available	Mass Production	
	0805	50	1.25+/-0.15	X7R	+/-10%	GRM21BR71H225K****	150%	Available	2012Q2	
		25	1.25+/-0.15	X7R	+/-10%	GRM21BR71E225KA73L	150%	Available	Mass Production	
		16	0.85+/-0.1	X7R	+/-10%	GRM219R71C225KE15D	150%	Available	Mass Production	NEW
	1206	16	1.25+/-0.1	X7R	+/-10%	GRM21BR71C225KA12L	150%	Available	Mass Production	
		100	1.6+/-0.3	X7R	+/-10%	GRM31CR72A225KA73L	150%	Available	Mass Production	NEW
50		1.6+/-0.2	X7R	+/-10%	GRM31CR71H225KA88L	200%	Available	Mass Production		
1210	100	2.5+/-0.2	X7R	+/-10%	GRM32ER72A225KA35L	200%	Available	Mass Production		
4.7uF	0603	16	0.8+/-0.2	X7S	+/-10%	GRM188C71C475K****	150%	Available	2012Q2	
		16	1.25+/-0.15	X7R	+/-10%	GRM21BR71C475KA73L	150%	Available	Mass Production	
	0805	10	0.85+/-0.1	X7T	+/-10%	GRM219D71A475KE15D	100%	Available	Mass Production	
		10	1.25+/-0.15	X7R	+/-10%	GRM21BR71A475KA73L	150%	Available	Mass Production	
		50	1.6+/-0.2	X7R	+/-10%	GRM31CR71H475KA12L	150%	Available	Mass Production	
	1206	25	1.6+/-0.2	X7R	+/-10%	GRM31CR71E475KA88L	200%	Available	Mass Production	
		16	0.85+/-0.1	X7T	+/-10%	GRM319D71C475KA12D	100%	Available	Mass Production	
		50	2.5+/-0.2	X7R	+/-10%	GRM32ER71H475KA88L	200%	Available	Mass Production	
10uF	0805	10	1.25+/-0.15	X7R	+/-10%	GRM21BR71A106KE51L	150%	Available	Mass Production	
		6.3	1.25+/-0.15	X7R	+/-10%	GRM21BR70J106KE76L	150%	Available	Mass Production	
	1206	25	1.6+/-0.2	X7R	+/-10%	GRM31CR71E106KA12L	150%	Available	Mass Production	
		16	1.6+/-0.2	X7R	+/-10%	GRM31CR71C106KAC7L	150%	Available	Mass Production	
	1210	50	2.5+/-0.2	X7R	+/-10%	GRM32ER71H106KA12L	150%	Available	Mass Production	NEW
		35	2.5+/-0.2	X7R	+/-10%	GRM32ER7YA106KA12L	150%	Available	Mass Production	
22uF	0805	4	1.25+/-0.15	X7U	+/-20%	GRM32DR71E106KA12L	200%	Available	Mass Production	
		10	1.6+/-0.2	X7R	+/-10%	GRM31CR71A226KE15L	150%	Available	Mass Production	
	1206	6.3	1.6+/-0.2	X7R	+/-10%	GRM31CR70J226KE19L	150%	Available	Mass Production	
		4	1.6+/-0.2	X7S	+/-10%	GRM31CC70G226KE01L	150%	Available	Mass Production	
	1210	25	2.5+/-0.2	X7R	+/-10%	GRM32ER71E226KE15L	150%	Available	Mass Production	
		16	2.5+/-0.2	X7R	+/-10%	GRM32ER71C226KEA8L	150%	Available	Mass Production	
47uF	1206	4	1.6+/-0.2	X7U	+/-20%	GRM31CE70G476ME15L	150%	Available	Mass Production	
		10	2.5+/-0.2	X7R	+/-10%	GRM32ER71A476KE15L	150%	Available	Mass Production	
	6.3	2.5+/-0.2	X7R	+/-10%	GRM32ER70J476KE20L	150%	Available	Mass Production		
100uF	1210	4	2.5+/-0.2	X7U	+/-20%	GRM32EE70G107ME19L	150%	Available	Mass Production	

- 1) “\*\*” of under development P/N have not fixed yet.
- 2) Q1 = January to March, Q2 = April to June, Q3 = July to September, Q4 = October to December
- 3) This is muRata’s development schedule, which may change due to progress of each development works.
- 4) Above individual specification code and packaging code were decided with muRata standard specification, and it may change due to the special requirement by customer’s drawing.
- 5) Sample marked “-” in Sample column are built upon your request. Lead time will be around 4wks (might be extended depending on production schedule). Please contact Murata Sales or Product Engineer directly.

Regarding detailed specifications, please check catalog or product specification.

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <X6S (X6T)>

Cap.	Size	WV	Chip T(mm)	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	M.P.	
1uF	0402	10	0.5+/-0.05	X6S	+/-10%	GRM155C81A105KA12D	150%	Available	Mass Production	NEW
		35	0.8+/-0.1	X6S	+/-10%	GRM188C8YA105KAALD	150%	Available	Mass Production	
	0603	25	0.8+/-0.1	X6S	+/-10%	GRM188C81E105KA12D	150%	Available	Mass Production	
		10	0.5+0/-0.1	X6S	+/-10%	GRM185C81A105KE36D	150%	Available	Mass Production	
	0805	35	0.85+/-0.1	X6S	+/-10%	GRM219C8YA105KA73D	150%	Available	Mass Production	
		16	0.6+/-0.1	X6S	+/-10%	GRM216C81C105KA12D	150%	Available	Mass Production	
2.2uF	0402	16	0.5+/-0.2	X6S	+/-10%	GRM155C81C225KE11D	150%	Available	Mass Production	NEW
		10	0.5+/-0.2	X6S	+/-10%	GRM155C81A225KE11D	150%	Available	Mass Production	
		6.3	0.5+/-0.05	X6S	+/-10%	GRM155C80J225KE95D	100%	Available	Mass Production	
	0603	35	0.8+/-0.2	X6S	+/-10%	GRM188C8YA225KE11D	150%	Available	Mass Production	NEW
		25	0.8+/-0.2	X6S	+/-10%	GRM188C81E225KE11D	150%	Available	Mass Production	
		16	0.8+/-0.1	X6S	+/-10%	GRM188C81C225KA12D	150%	Available	Mass Production	
		10	0.8+/-0.1	X6S	+/-10%	GRM188C81A225KE34D	150%	Available	Mass Production	
		6.3	0.8+/-0.1	X6S	+/-10%	GRM188C80J225KE19D	150%	Available	Mass Production	
	0805	35	0.85+/-0.1	X6S	+/-10%	GRM219C8YA225KE15D	150%	Available	Mass Production	
		35	1.25+/-0.15	X6S	+/-10%	GRM21BC8YA225KA73L	150%	Available	Mass Production	
		25	0.85+/-0.1	X6S	+/-10%	GRM219C81E225KE15D	150%	Available	Mass Production	NEW
	1206	35	0.85+/-0.1	X6S	+/-10%	GRM319C8YA225KA12D	150%	Available	Mass Production	
4.7uF	0603	25	0.8+/-0.2	X6S	+/-10%	GRM188C81E475K****	100%	Available	2012Q2	
		16	0.8+/-0.2	X6S	+/-10%	GRM188C81C475K****	100%	Available	2012Q2	
		6.3	0.8+/-0.1	X6S	+/-10%	GRM188C80J475KE15D	100%	Available	Mass Production	
		4	0.8+/-0.1	X6S	+/-10%	GRM188C80G475KE19D	150%	Available	Mass Production	
	0805	35	1.25+/-0.15	X6S	+/-10%	GRM21BC8YA475KE51L	150%	Available	Mass Production	
		25	1.25+/-0.1	X6S	+/-10%	GRM21BC81E475KA12L	150%	Available	Mass Production	
		16	0.85+/-0.1	X6S	+/-10%	GRM219C81C475KA73D	150%	Available	Mass Production	
		16	1.25+/-0.1	X6S	+/-10%	GRM21BC81C475KA88L	150%	Available	Mass Production	
	16	0.85+/-0.1	X6S	+/-10%	GRM219C81A475KE34D	150%	Available	Mass Production		

- 1) “\*\*” of under development P/N have not fixed yet.
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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <X6S (X6T)>

Cap.	Size	WV	Chip T(mm)	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	M.P.	
10uF	0603	10	0.8+/-0.2	X6S	+/-20%	GRM188C81A106M****	150%	Available	2012Q2	
		6.3	0.8+/-0.2	X6S	+/-20%	GRM188C80J106M****	150%	Available	2012Q2	
		4	0.8+/-0.1	X6S	+/-20%	GRM188C80G106ME47D	100%	Available	Mass Production	
		2.5	0.8+/-0.1	X6S	+/-20%	GRM188C80E106ME47D	150%	Available	Mass Production	
	0805	35	1.25+/-0.2	X6S	+/-10%	GRM21BC8YA106K****	150%	Available	2012Q2	
		25	1.25+/-0.15	X6S	+/-10%	GRM21BC81E106K****	150%	Available	2012Q2	
		16	1.25+/-0.1	X6S	+/-10%	GRM21BC81C106KE15L	100%	Available	Mass Production	
		10	1.25+/-0.1	X6S	+/-10%	GRM21BC81A106KE18L	150%	Available	Mass Production	
		6.3	0.85+/-0.1	X6S	+/-10%	GRM219C80J106KE39D	150%	Available	Mass Production	
		4	0.85+/-0.1	X6S	+/-10%	GRM219C80G106KE19D	150%	Available	Mass Production	
		1206	35	1.6+/-0.2	X6S	+/-10%	GRM31CC8YA106KA12L	150%	Available	Mass Production
			25	1.6+/-0.2	X6S	+/-10%	GRM31CC81E106KE15L	150%	Available	Mass Production
16	0.85+/-0.1		X6S	+/-10%	GRM319C81C106KA12D	150%	Available	Mass Production		
4	0.8+/-0.2		X6S	+/-20%	GRM188C80G226MEA0D	100%	Available	Mass Production	<b>NEW</b>	
22uF	0603	4	0.8+/-0.2	X6S	+/-20%	GRM188C80G226ME51L	100%	Available	Mass Production	
		6.3	1.25+/-0.15	X6S	+/-20%	GRM21BC80J226ME39L	150%	Available	Mass Production	
	1206	4	1.25+/-0.15	X6S	+/-20%	GRM21BC80G226ME39L	150%	Available	Mass Production	
		16	1.6+/-0.2	X6S	+/-10%	GRM31CC81C226KE15L	150%	Available	Mass Production	
		10	1.6+/-0.2	X6S	+/-10%	GRM31CC81A226KE19L	150%	Available	Mass Production	
		6.3	0.85+/-0.1	X6S	+/-20%	GRM319C80J226ME15D	150%	Available	Mass Production	
1210	25	2.5+/-0.2	X6S	+/-10%	GRM32EC81E226KE15L	150%	Available	Mass Production		
47uF	1206	6.3	1.6+/-0.2	X6S	+/-20%	GRM31CC80J476ME18L	150%	Available	Mass Production	
		4	1.6+/-0.2	X6S	+/-20%	GRM31CC80G476ME19L	150%	Available	Mass Production	
	1210	16	2.5+/-0.2	X6S	+/-10%	GRM32EC81C476KE15L	150%	Available	Mass Production	
		10	2.5+/-0.2	X6S	+/-10%	GRM32EC81A476KE19L	150%	Available	Mass Production	
		6.3	2.5+/-0.2	X6S	+/-10%	GRM32EC80J476KE64L	150%	Available	Mass Production	
		6.3	1.6+/-0.3	X6T	+/-20%	GRM31CD80J107ME39L	100%	Available	Mass Production	
100uF	1206	4	1.6+/-0.3	X6T	+/-20%	GRM31CD80G107ME39L	150%	Available	Mass Production	
		6.3	2.5+/-0.2	X6S	+/-20%	GRM32EC80J107ME20L	150%	Available	Mass Production	
	1210	4	2.5+/-0.2	X6S	+/-20%	GRM32EC80G107ME20L	150%	Available	Mass Production	
150uF	1210	4	1.8+0/0.2	X6T	+/-20%	GRM32RD80G157ME15L	100%	Available	Mass Production	<b>NEW</b>
		2.5	1.8+0/0.2	X6T	+/-20%	GRM32RD80E157ME15L	150%	Available	Mass Production	<b>NEW</b>

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <X5R(X5S)>

Cap.	Size	WV	Chip T(mm)	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	M.P.		
1uF	0402	25	0.5+/-0.05	X5R	+/-10%	GRM155R61E105KA12D	100%	Available	Mass Production		
		16	0.5+/-0.05	X5R	+/-10%	GRM155R61C105KA12D	150%	Available	Mass Production		
		10	0.5+/-0.05	X5R	+/-10%	GRM155R61A105KE15D	150%	Available	Mass Production		
	0603	50	0.8+/-0.1	X5R	+/-10%	GRM188R61H105KAALD	150%	Available	Mass Production		
		25	0.5+/-0.1	X5R	+/-10%	GRM185R61E105KA12D	100%	Available	Mass Production		
		25	0.8+/-0.1	X5R	+/-10%	GRM188R61E105KA12D	150%	Available	Mass Production		
		16	0.5+/-0.1	X5R	+/-10%	GRM185R61C105KE44D	150%	Available	Mass Production		
	16	0.8+/-0.1	X5R	+/-10%	GRM188R61C105KA93D	150%	Available	Mass Production			
2.2uF	0402	25	0.5+/-0.2	X5R	+/-10%	GRM155R61E225KE11D	150%	Available	Mass Production	NEW	
		16	0.5+/-0.2	X5R	+/-10%	GRM155R61C225KE11D	150%	Available	Mass Production	NEW	
		10	0.5+/-0.05	X5R	+/-10%	GRM155R61A225KE95D	100%	Available	Mass Production		
	0603	6.3	0.5+/-0.05	X5R	+/-10%	GRM155R60J225KE95D	150%	Available	Mass Production		
		50	0.8+/-0.2	X5R	+/-10%	GRM188R61H225KE11D	150%	Available	Mass Production	NEW	
		35	0.8+/-0.1	X5R	+/-10%	GRM188R6YA225KA12D	100%	Available	Mass Production	NEW	
		25	0.8+/-0.1	X5R	+/-10%	GRM188R61E225KA12D	150%	Available	Mass Production		
		16	0.8+/-0.1	X5R	+/-10%	GRM188R61C225KE15D	150%	Available	Mass Production		
	0805	10	0.8+/-0.1	X5R	+/-10%	GRM188R61A225KE34D	150%	Available	Mass Production		
		50	1.25+/-0.1	X5R	+/-10%	GRM21BR61H225KA73L	150%	Available	Mass Production		
		25	0.85+/-0.1	X5R	+/-10%	GRM219R61H225KE15D	150%	Available	Mass Production		
		25	0.85+/-0.1	X5R	+/-10%	GRM219R61E225KA12D	150%	Available	Mass Production		
	1206	16	0.6+/-0.1	X5R	+/-10%	GRM216R61C225KA12D	150%	Available	Mass Production		
		16	0.85+/-0.1	X5R	+/-10%	GRM219R61C225KA88D	150%	Available	Mass Production		
		50	0.85+/-0.1	X5R	+/-10%	GRM319R61H225KA12D	150%	Available	Mass Production		
		50	1.6+/-0.2	X5R	+/-10%	GRM31CR61H225KA88L	150%	Available	Mass Production		
		25	0.6+/-0.1	X5R	+/-10%	GRM316R61E225KA12D	150%	Available	Mass Production		
			10	0.5+/-0.15	X5R	+/-20%	GRM155R61A475MEAAD	100%	Available	Mass Production	NEW
	4.7uF	0402	6.3	0.5+/-0.15	X5R	+/-20%	GRM155R60J475MEAAD	150%	Available	Mass Production	NEW
			6.3	0.5+/-0.1	X5R	+/-20%	GRM155R60J475ME47D	100%	Available	Mass Production	
4			0.5+/-0.1	X5R	+/-20%	GRM155R60G475ME47D	150%	Available	Mass Production		
0603		35	0.8+/-0.2	X5R	+/-10%	GRM188R6YA475KE15D	150%	Available	Mass Production	NEW	
		25	0.8+/-0.2	X5R	+/-10%	GRM188R61E475KE15D	150%	Available	Mass Production	NEW	
		16	0.8+/-0.15	X5R	+/-10%	GRM188R61C475KAADJ	100%	Available	Mass Production		
		10	0.8+/-0.15	X5R	+/-10%	GRM188R61A475KE15D	100%	Available	Mass Production		
		6.3	0.8+/-0.1	X5R	+/-10%	GRM188R60J475KE19D	150%	Available	Mass Production		
0805		50	1.25+/-0.15	X5R	+/-10%	GRM21BR61H475KE51L	150%	Available	Mass Production	NEW	
		35	0.85+/-0.1	X5R	+/-10%	GRM219R6YA475KA73D	100%	Available	Mass Production	NEW	
		25	0.85+/-0.1	X5R	+/-10%	GRM219R61E475KA73D	150%	Available	Mass Production		
		25	1.25+/-0.1	X5R	+/-10%	GRM21BR61E475KA12L	150%	Available	Mass Production		
		16	0.85+/-0.1	X5R	+/-10%	GRM219R61C475KE15D	150%	Available	Mass Production		
	16	1.25+/-0.1	X5R	+/-10%	GRM21BR61C475KA88L	150%	Available	Mass Production			
	50	0.85+/-0.1	X5R	+/-10%	GRM319R61H475KA12D	150%	Available	Mass Production			
1206	25	1.6+/-0.2	X5R	+/-10%	GRM31CR61E475KA88L	200%	Available	Mass Production			
	10	0.6+/-0.1	X5R	+/-10%	GRM316R61A475KE19D	150%	Available	Mass Production			

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <X5R(X5S)>

Cap.	Size	WV	Chip T(mm)	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	M.P.	
10uF	0402	4	0.5+/-0.2	X5R	+/-20%	GRM155R60G106ME44D	150%	Available	Mass Production	
		2.5	0.5+/-0.2	X5R	+/-20%	GRM155R60E106ME16D	150%	Available	Mass Production	
	0603	25	0.8+/-0.2	X5R	+/-20%	GRM188R61E106MA73D	150%	Available	Mass Production	NEW
		16	0.8+/-0.2	X5R	+/-20%	GRM188R61C106MA73D	150%	Available	Mass Production	NEW
		10	0.8+/-0.15	X5R	+/-10%	GRM188R61A106KE69D	100%	Available	Mass Production	
		6.3	0.8+/-0.1	X5R	+/-20%	GRM188R60J106ME47D	150%	Available	Mass Production	
	0805	50	1.25+/-0.2	X5R	+/-10%	GRM21BR61H106K****	150%	Available	2012Q2	
		25	0.85+/-0.1	X5R	+/-10%	GRM219R61E106KA12D	100%	Available	Mass Production	NEW
		25	1.25+/-0.15	X5R	+/-10%	GRM21BR61E106KA73L	150%	Available	Mass Production	
		16	0.85+/-0.1	X5R	+/-10%	GRM219R61C106KA73D	150%	Available	Mass Production	
		16	1.25+/-0.1	X5R	+/-10%	GRM21BR61C106KE15L	150%	Available	Mass Production	
		10	0.85+/-0.1	X5R	+/-10%	GRM219R61A106KE44D	150%	Available	Mass Production	
		10	1.25+/-0.1	X5R	+/-10%	GRM21BR61A106KE19L	150%	Available	Mass Production	
		50	1.6+/-0.2	X5R	+/-10%	GRM31CR61H106KA12L	150%	Available	Mass Production	
	1206	35	1.6+/-0.2	X5R	+/-10%	GRM31CR6YA106KA12L	150%	Available	Mass Production	
		25	0.85+/-0.1	X5R	+/-10%	GRM319R61E106KA12D	150%	Available	Mass Production	
		25	1.6+/-0.2	X5R	+/-10%	GRM31CR61E106KA12L	150%	Available	Mass Production	
		16	1.6+/-0.2	X5R	+/-10%	GRM31CR61C106KA88L	200%	Available	Mass Production	
	1210	50	2.5+/-0.2	X5R	+/-10%	GRM32ER61H106KA12L	150%	Available	Mass Production	
	22uF	0603	6.3	0.8+/-0.2	X5R	+/-20%	GRM188R60J226MEA0D	100%	Available	Mass Production
4			0.8+/-0.2	X5R	+/-20%	GRM188R60G226MEA0D	150%	Available	Mass Production	
0805		25	1.25+/-0.2	X5R	+20%	GRM21BR61E226ME44L	150%	Available	Mass Production	
		10	0.85+/-0.1	X5R	+/-20%	GRM219R61A226MEA0D	100%	Available	Mass Production	
		10	1.25+/-0.15	X5R	+/-20%	GRM219R61A226ME51L	100%	Available	Mass Production	
		6.3	0.85+/-0.1	X5R	+/-20%	GRM219R60J226MEA0D	150%	Available	Mass Production	
1206		6.3	1.25+/-0.15	X5R	+/-20%	GRM21BR60J226ME39L	150%	Available	Mass Production	
		25	1.6+/-0.2	X5R	+/-10%	GRM31CR61E226KE15L	150%	Available	Mass Production	
		16	1.6+/-0.2	X5R	+/-10%	GRM31CR61C226KE15L	150%	Available	Mass Production	
		10	0.85+/-0.1	X5R	+20%	GRM319R61A226ME15D	150%	Available	Mass Production	
1210	25	2.5+/-0.2	X5R	+/-10%	GRM32ER61E226KE15L	150%	Available	Mass Production		
47uF	0805	6.3	0.85+/-0.1	X5R	+/-20%	GRM219R60J476M****	100%	Available	2012Q2	
		6.3	1.25+/-0.2	X5R	+/-20%	GRM21BR60J476ME15L	100%	Available	Mass Production	
	4	0.85+/-0.1	X5R	+/-20%	GRM219R60G476ME44D	100%	Available	Mass Production	NEW	
	1206	10	1.6+/-0.2	X5R	+/-10%	GRM31CR61A476KE15L	150%	Available	Mass Production	
		6.3	1.6+/-0.2	X5R	+/-10%	GRM31CR60J476KE19L	150%	Available	Mass Production	
1210	16	2.5+/-0.2	X5R	+/-10%	GRM32ER61C476KE15L	150%	Available	Mass Production		
100uF	1206	6.3	1.6+/-0.3	X5R	+/-20%	GRM31CR60J107ME39L	150%	Available	Mass Production	
	1210	6.3	2.5+/-0.2	X5R	+/-20%	GRM32ER60J107ME20L	150%	Available	Mass Production	
150uF	1210	4	1.8+0/-0.2	X5S	+/-20%	GRM32RC60G157ME15L	150%	Available	Mass Production	NEW

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <Low profile series>

**GRM18 series: 0.5mm Max**  
**GRM21 series: 0.70mm Max, 0.95mm Max**  
**GRM31 series: 0.95mm Max,**

Cap.	Size	Chip T(mm)	WV	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	Mass Production	
1uF	0402	0.33mmMax	10	X5R	+/-20%	GRM153R61A105ME95D	100%	Available	Mass Production	
		0.5mmMax	25	X5R	+/-10%	GRM185R61E105KA12D	100%	Available	Mass Production	
	0603	0.5mmMax	16	X5R	+/-10%	GRM185R61C105KE44D	150%	Available	Mass Production	
		0.5mmMax	10	X7T	+/-10%	GRM185D71A105KE36D	150%	Available	Mass Production	
		0.5mmMax	10	X6S	+/-10%	GRM185C81A105KE36D	150%	Available	Mass Production	
		0.5mmMax	6.3	X6S	+/-10%	GRM185C80J105KE26D	150%	Available	Mass Production	
		0.7mmMax	25	X5R	+/-10%	GRM216R61E105KA12D	150%	Available	Mass Production	
	0805	0.7mmMax	16	X7T	+/-10%	GRM216D71C105KA12D	100%	Available	Mass Production	
		0.7mmMax	16	X6S	+/-10%	GRM216C81C105KA12D	150%	Available	Mass Production	
		0.7mmMax	16	X5R	+/-10%	GRM216R61C105KA88D	200%	Available	Mass Production	
		0.95mmMax	50	X5R	+/-10%	GRM219R61H105KA73D	150%	Available	Mass Production	
		0.95mmMax	35	X6S	+/-10%	GRM219C8YA105KA73D	150%	Available	Mass Production	
		0.95mmMax	25	X7R	+/-10%	GRM219R71E105KA88D	150%	Available	Mass Production	
		0.95mmMax	25	X5R	+/-10%	GRM216R61C225KA12D	150%	Available	Mass Production	
2.2uF	0805	0.7mmMax	10	X5R	+/-10%	GRM216R61A225KE24D	150%	Available	Mass Production	
		0.95mmMax	50	X5R	+/-10%	GRM219R61H225KE15D	150%	Available	Mass Production	
	0805	0.95mmMax	35	X6S	+/-10%	GRM219C8YA225KE15D	150%	Available	Mass Production	
		0.95mmMax	25	X6S	+/-10%	GRM219C81E225KE15D	150%	Available	Mass Production	
		0.95mmMax	25	X5R	+/-10%	GRM219R61E225KA12D	150%	Available	Mass Production	
		0.95mmMax	16	X7R	+/-10%	GRM219R71C225KE15D	150%	Available	Mass Production	
		0.95mmMax	16	X6S	+/-10%	GRM219C81C225KA12D	150%	Available	Mass Production	
		0.95mmMax	16	X5R	+/-10%	GRM219R61C225KA88D	150%	Available	Mass Production	
	1206	0.7mmMax	25	X5R	+/-10%	GRM316R61E225KA12D	150%	Available	Mass Production	
		0.7mmMax	16	X5R	+/-10%	GRM316R61C225KA88D	150%	Available	Mass Production	
		0.95mmMax	50	X5R	+/-10%	GRM319R61H225KA12D	150%	Available	Mass Production	
		0.95mmMax	35	X6S	+/-10%	GRM319C8YA225KA12D	150%	Available	Mass Production	
	4.7uF	0805	0.95mmMax	35	X5R	+/-10%	GRM219R6YA475KA73D	100%	Available	Mass Production
			0.95mmMax	25	X5R	+/-10%	GRM219R61E475KA73D	150%	Available	Mass Production
0805		0.95mmMax	16	X6S	+/-10%	GRM219C81C475KA73D	150%	Available	Mass Production	
		0.95mmMax	16	X5R	+/-10%	GRM219R61C475KE15D	150%	Available	Mass Production	
		0.95mmMax	10	X7T	+/-10%	GRM219D71A475KE15D	100%	Available	Mass Production	
		0.95mmMax	10	X6S	+/-10%	GRM219C81A475KE34D	150%	Available	Mass Production	
		0.95mmMax	6.3	X6S	+/-10%	GRM219C80J475KE19D	150%	Available	Mass Production	
		0.7mmMax	10	X5R	+/-10%	GRM316R61A475KE19D	150%	Available	Mass Production	
		0.95mmMax	50	X5R	+/-10%	GRM319R61H475KA12D	150%	Available	Mass Production	
		0.95mmMax	25	X5R	+/-10%	GRM319R61E475KA12D	150%	Available	Mass Production	
1206		0.95mmMax	16	X7T	+/-10%	GRM319D71C475KA12D	100%	Available	Mass Production	
		0.95mmMax	16	X6S	+/-10%	GRM319C81C475KA12D	150%	Available	Mass Production	
		0.95mmMax	16	X5R	+/-10%	GRM319R61C475KA88D	150%	Available	Mass Production	
		0.95mmMax	16	X5R	+/-10%	GRM319R61C475KA88D	150%	Available	Mass Production	

NEW

NEW

NEW

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## GRM series / Hi-Cap <1uF and over>

### Murata P/N List <Low profile series>

GRM18 series: 0.5mm Max  
 GRM21 series: 0.70mm Max, 0.95mm Max  
 GRM31 series: 0.95mm Max,

Cap.	Size	Chip T(mm)	VV	TC	Cap.Tol.	Murata Global P/N	Durability (%Rated Volt)	Sample	Mass Production	
10uF	0805	0.95mmMax	25	X5R	+/-10%	GRM219R61E106KA12D	100%	Available	Mass Production	<b>NEW</b>
		0.95mmMax	16	X5R	+/-10%	GRM219R61C106KA73D	150%	Available	Mass Production	
		0.95mmMax	10	X5R	+/-10%	GRM219R61A106KE44D	150%	Available	Mass Production	
		0.95mmMax	6.3	X5R	+/-10%	GRM219R60J106KE19D	150%	Available	Mass Production	
	1206	0.95mmMax	25	X5R	+/-10%	GRM319R61E106KA12D	150%	Available	Mass Production	
		0.95mmMax	16	X6S	+/-10%	GRM319C81C106KA12D	150%	Available	Mass Production	
22uF	0805	0.95mmMax	10	X5R	+/-20%	GRM219R61A226MEA0D	100%	Available	Mass Production	
		0.95mmMax	6.3	X5R	+/-20%	GRM219R60J226MEA0D	150%	Available	Mass Production	
	1206	0.95mmMax	10	X5R	+20%	GRM319R61A226ME15D	150%	Available	Mass Production	
		0.95mmMax	6.3	X6S	+20%	GRM319C80J226ME15D	150%	Available	Mass Production	
47uF	0805	0.95mmMax	6.3	X5R	+20%	GRM219R60J476M****	100%	Available	2012Q1	
		0.95mmMax	4	X5R	+20%	GRM219R60G476ME44D	100%	Available	Mass Production	<b>NEW</b>

Regarding detailed specifications, please check catalog or product specification.  
 Information in this PDF are as of Apr.2012.

They are subject to change or our products in it may be discontinued without advance notice.  
 Please check the latest information before usage of the products.