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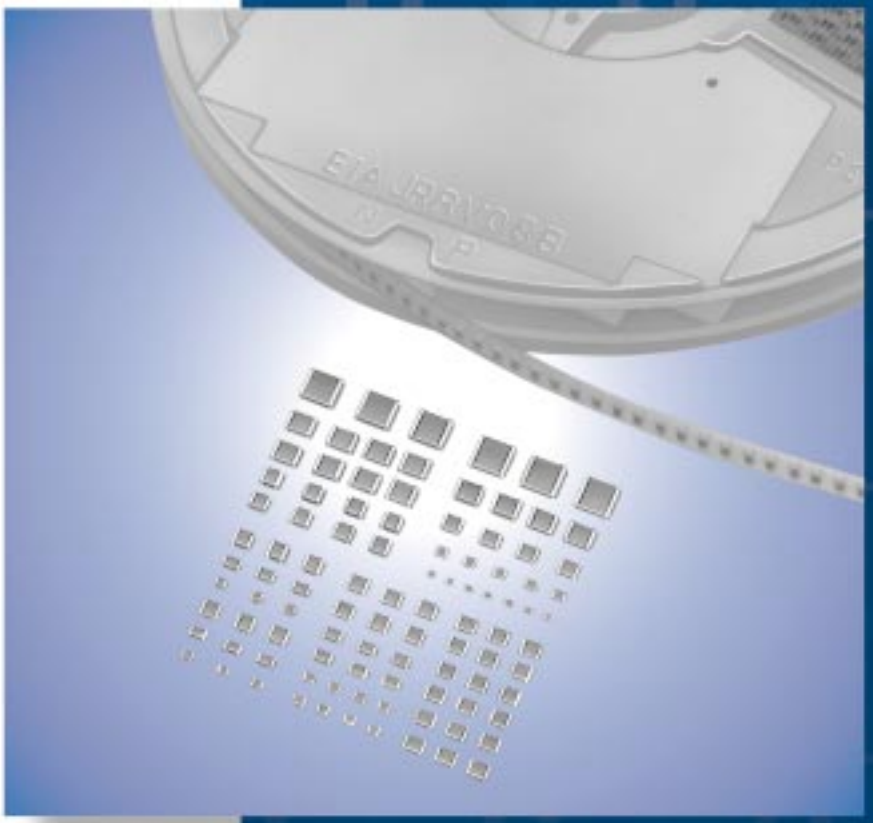
Chip Monolithic Ceramic Capacitors



Innovator in Electronics

Murata Manufacturing Co., Ltd.

Cat.No.C02E-16

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Part Numbering

Chip Monolithic Ceramic Capacitors

(Part Number)

GR	M	18	8	B1	1H	102	K	A01	D
❶	❷	❸	❹	❺	❻	❼	❽	❾	❿

❶Product ID

❷Series

Product ID	Code	Series
GR	J	Soft Termination Type
	M	Tin Plated Layer
	4	Only for Information Devices / Tip & Ring
	7	Only for Camera Flash Circuit
GQ	M	High Frequency for Flow/Reflow Soldering
GM	A	Monolithic Microchip
	D	For Bonding
GN	M	Capacitor Array
LL	L	Low ESL Type
	R	Controlled ESR Low ESL Type
	A	8-termination Low ESL Type
	M	10-termination Low ESL Type
GJ	M	High Frequency Low Loss Type
GA	2	For AC250V (r.m.s.)
	3	Safety Standard Certified Type

❸Dimensions (L×W)

Code	Dimensions (L×W)	EIA
02	0.4×0.2mm	01005
03	0.6×0.3mm	0201
05	0.5×0.5mm	0202
08	0.8×0.8mm	0303
0D	0.38×0.38mm	015015
0M	0.9×0.6mm	0302
15	1.0×0.5mm	0402
18	1.6×0.8mm	0603
1M	1.37×1.0mm	0504
21	2.0×1.25mm	0805
22	2.8×2.8mm	1111
31	3.2×1.6mm	1206
32	3.2×2.5mm	1210
42	4.5×2.0mm	1808
43	4.5×3.2mm	1812
52	5.7×2.8mm	2211
55	5.7×5.0mm	2220

❹Dimension (T) (Except **GNM**)

Code	Dimension (T)
2	0.2mm
3	0.3mm
5	0.5mm
6	0.6mm
7	0.7mm
8	0.8mm
9	0.85mm
A	1.0mm
B	1.25mm
C	1.6mm
D	2.0mm
E	2.5mm
F	3.2mm
M	1.15mm
N	1.35mm
Q	1.5mm
R	1.8mm
S	2.8mm
X	Depends on individual standards.

❹Elements (**GNM** Only)

Code	Elements
2	2-elements
4	4-elements

Continued on the following page.

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Continued from the preceding page.

❺Temperature Characteristics

Temperature Characteristic Codes			Temperature Characteristics			Operating Temperature Range
Code	Public STD Code		Reference Temperature	Temperature Range	Capacitance Change or Temperature Coefficient	
1X	SL *1	JIS	20°C	20 to 85°C	+350 to -1000ppm/°C	-55 to 125°C
2C	CH *1	JIS	20°C	20 to 125°C	0±60ppm/°C	-55 to 125°C
2P	PH *1	JIS	20°C	20 to 85°C	-150±60ppm/°C	-25 to 85°C
2R	RH *1	JIS	20°C	20 to 85°C	-220±60ppm/°C	-25 to 85°C
2S	SH *1	JIS	20°C	20 to 85°C	-330±60ppm/°C	-25 to 85°C
2T	TH *1	JIS	20°C	20 to 85°C	-470±60ppm/°C	-25 to 85°C
3C	CJ *1	JIS	20°C	20 to 125°C	0±120ppm/°C	-55 to 125°C
3P	PJ *1	JIS	20°C	20 to 85°C	-150±120ppm/°C	-25 to 85°C
3R	RJ *1	JIS	20°C	20 to 85°C	-220±120ppm/°C	-25 to 85°C
3S	SJ *1	JIS	20°C	20 to 85°C	-330±120ppm/°C	-25 to 85°C
3T	TJ *1	JIS	20°C	20 to 85°C	-470±120ppm/°C	-25 to 85°C
3U	UJ *1	JIS	20°C	20 to 85°C	-750±120ppm/°C	-25 to 85°C
4C	CK *1	JIS	20°C	20 to 125°C	0±250ppm/°C	-55 to 125°C
5C	C0G *1	EIA	25°C	25 to 125°C	0±30ppm/°C	-55 to 125°C
5G	X8G *1	EIA	25°C	25 to 150°C	0±30ppm/°C	-55 to 150°C
6C	C0H *1	EIA	25°C	25 to 125°C	0±60ppm/°C	-55 to 125°C
6P	P2H *1	EIA	25°C	25 to 85°C	-150±60ppm/°C	-55 to 125°C
6R	R2H *1	EIA	25°C	25 to 85°C	-220±60ppm/°C	-55 to 125°C
6S	S2H *1	EIA	25°C	25 to 85°C	-330±60ppm/°C	-55 to 125°C
6T	T2H *1	EIA	25°C	25 to 85°C	-470±60ppm/°C	-55 to 125°C
7U	U2J *1	EIA	25°C	25 to 125°C *6	-750±120ppm/°C	-55 to 125°C
B1	B *2	JIS	20°C	-25 to 85°C	±10%	-25 to 85°C
B3	B	JIS	20°C	-25 to 85°C	±10%	-25 to 85°C
C7	X7S	EIA	25°C	-55 to 125°C	±22%	-55 to 125°C
C8	X6S	EIA	25°C	-55 to 105°C	±22%	-55 to 105°C
D7	X7T	EIA	25°C	-55 to 125°C	+22, -33%	-55 to 125°C
D8	X6T	EIA	25°C	-55 to 105°C	+22, -33%	-55 to 105°C
E7	X7U	EIA	25°C	-55 to 125°C	+22, -56%	-55 to 125°C
F1	F *2	JIS	20°C	-25 to 85°C	+30, -80%	-25 to 85°C
F5	Y5V	EIA	25°C	-30 to 85°C	+22, -82%	-30 to 85°C
L8	X8L	*3	25°C	-55 to 150°C	+15, -40%	-55 to 150°C
R1	R *2	JIS	20°C	-55 to 125°C	±15%	-55 to 125°C
R3	R	JIS	20°C	-55 to 125°C	±15%	-55 to 125°C
R6	X5R	EIA	25°C	-55 to 85°C	±15%	-55 to 85°C
R7	X7R	EIA	25°C	-55 to 125°C	±15%	-55 to 125°C
R9	X8R	EIA	25°C	-55 to 150°C	±15%	-55 to 150°C
W0	-	-	25°C	-55 to 125°C	±10% *4	-55 to 125°C
					+22, -33% *5	

*1 Please refer to table for Capacitance Change under reference temperature.
*2 Capacitance change is specified with 50% rated voltage applied.
*3 Murata Temperature Characteristic Code.
*4 Apply DC350V bias.
*5 No DC bias.
*6 Rated Voltage 100Vdc max : 25 to 85°C

Continued on the following page.

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Continued from the preceding page.

●Capacitance Change from each temperature

JIS Code

Murata Code	Capacitance Change from 20°C (%)					
	–55°C		–25°C		–10°C	
	Max.	Min.	Max.	Min.	Max.	Min.
1X	–	–	–	–	–	–
2C	0.82	–0.45	0.49	–0.27	0.33	–0.18
2P	–	–	1.32	0.41	0.88	0.27
2R	–	–	1.70	0.72	1.13	0.48
2S	–	–	2.30	1.22	1.54	0.81
2T	–	–	3.07	1.85	2.05	1.23
3C	1.37	–0.90	0.82	–0.54	0.55	–0.36
3P	–	–	1.65	0.14	1.10	0.09
3R	–	–	2.03	0.45	1.35	0.30
3S	–	–	2.63	0.95	1.76	0.63
3T	–	–	3.40	1.58	2.27	1.05
3U	–	–	4.94	2.84	3.29	1.89
4C	2.56	–1.88	1.54	–1.13	1.02	–0.75

EIA Code

Murata Code	Capacitance Change from 25°C (%)					
	–55°C		–30°C		–10°C	
	Max.	Min.	Max.	Min.	Max.	Min.
5C/5G	0.58	–0.24	0.40	–0.17	0.25	–0.11
6C	0.87	–0.48	0.59	–0.33	0.38	–0.21
6P	2.33	0.72	1.61	0.50	1.02	0.32
6R	3.02	1.28	2.08	0.88	1.32	0.56
6S	4.09	2.16	2.81	1.49	1.79	0.95
6T	5.46	3.28	3.75	2.26	2.39	1.44
7U	8.78	5.04	6.04	3.47	3.84	2.21

❻Rated Voltage

Code	Rated Voltage
0E	DC2.5V
0G	DC4V
0J	DC6.3V
1A	DC10V
1C	DC16V
1E	DC25V
YA	DC35V
1H	DC50V
2A	DC100V
2D	DC200V
2E	DC250V
YD	DC300V
2H	DC500V
2J	DC630V
3A	DC1kV
3D	DC2kV
3F	DC3.15kV
BB	DC350V (for Camera Flash Circuit)
E2	AC250V
GC	X1/Y2; AC250V (Safety Standard Certified Type GC)
GF	Y2, X1/Y2; AC250V (Safety Standard Certified Type GF)
GD	Y3; AC250V (Safety Standard Certified Type GD)
GB	X2; AC250V (Safety Standard Certified Type GB)

❼Capacitance

Expressed by three-digit alphanumerics. The unit is picofarad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two numbers.If there is a decimal point, it is expressed by the capital letter "**R**." In this case, all figures are significant digits.

Ex.)

Code	Capacitance
R50	0.5pF
1R0	1.0pF
100	10pF
103	10000pF

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❽Capacitance Tolerance

Code	Capacitance Tolerance	TC	Series	Capacitance Step	
W	±0.05pF	CΔ	**GRM/GJM**	≦9.9pF	0.1pF
B	±0.1pF	CΔ	**GRM/GJM**	≦9.9pF	0.1pF
			GQM	≦1pF	0.1pF
				1.1 to 9.9pF	1pF Step and E24 Series
C	±0.25pF	CΔ	**GRM/GJM**	≦9.9pF	0.1pF
		except CΔ	**GRM**	≦5pF	* 1pF
		CΔ	**GQM**	≦1pF	0.1pF
				1.1 to 9.9pF	1pF Step and E24 Series
D	±0.5pF	CΔ	**GRM/GJM**	5.1 to 9.9pF	0.1pF
		except CΔ	**GRM**	5.1 to 9.9pF	* 1pF
		CΔ	**GQM**	5.1 to 9.9pF	1pF Step and E24 Series
G	±2%	CΔ	**GJM**	≧10pF	E12 Series
		CΔ	**GQM**	≧10pF	E24 Series
J	±5%	CΔ, SL, U2J	**GRM/GA3**	≧10pF	E12 Series
		CΔ	**GQM/GJM**	≧10pF	E24 Series
K	±10%	B, R, X7R, X5R, ZLM	**GRJ/GRM/GR7/GA3**	E6 Series	
		C0G	**GNM**	E6 Series	
		B, R, X7R, X5R, ZLM	**GR4, GMD**	E12 Series	
M	±20%	B, R, X7R, X7S	**GRM/GMA**	E6 Series	
		X5R, X7R, X7S	**GNM**	E3 Series	
		X7R	**GA2**	E3 Series	
		X5R, X7R, X7S, X6S	**LLL/LLR/LLA/LLM**	E3 Series	
Z	+80%, -20%	F, Y5V	**GRM**	E3 Series	
R	Depends on individual standards.				

***** E24 series is also available.

❾Individual Specification Code (Except **LLR**)

Expressed by three figures.

❾ESR (**LLR** Only)

Code	ESR
E01	100mΩ
E03	220mΩ
E05	470mΩ
E07	1000mΩ

❿Packaging

Code	Packaging
L	ø180mm Embossed Taping
D	ø180mm Paper Taping
E	ø180mm Paper Taping (LLL15)
K	ø330mm Embossed Taping
J	ø330mm Paper Taping
F	ø330mm Paper Taping (LLL15)
B	Bulk
C	Bulk Case
T	Bulk Tray

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Chip Monolithic Ceramic Capacitors

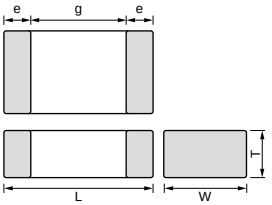
High Frequency GQM Series

■ Features

1. HiQ and low ESR at VHF, UHF, Microwave
2. Feature improvement, low power consumption for mobile telecommunication. (Base station, terminal, etc.)

■ Applications

High frequency circuit (Mobile telecommunication, etc.)



Part Number	Dimensions (mm)				
	L	W	T	e	g min.
GQM187	1.6 ±0.15	0.8 ±0.15	0.7 ±0.1	0.2 to 0.5	0.5
GQM188	1.6 ±0.1	0.8 ±0.1	0.8 ±0.1	0.2 to 0.5	0.5
GQM219 (50,100V)	2.0 ±0.1	1.25 ±0.1	0.85 ±0.1	0.2 to 0.7	0.7
GQM219 (250V)	2.0 ±0.15	1.25 ±0.15	0.85 ±0.15	0.2 to 0.7	0.7
GQM22M	2.8 ±0.5	2.8 ±0.4	1.15 ±0.2	0.3 min.	1.0

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Capacitance Table

Temperature Compensating Type C0G(5C) Characteristics

7 ex.7: T Dimension [mm]

Capacitance \ LxW [mm]	1.6x0.8 (**18**) <0603>			2.0x1.25 (**21**) <0805>			2.0x2.5 (**22**) <0810>
Capacitance \ Rated Voltage [Vdc]	250 (**2E**)	100 (**2A**)	50 (**1H**)	250 (**2E**)	100 (**2A**)	50 (**1H**)	500 (**2H**)
0.10pF(**R10**)	**7**						
0.20pF(**R20**)	**7**						
0.30pF(**R30**)	**7**						
0.40pF(**R40**)	**7**						
0.50pF(**R50**)	**7**	**8**		**9**	**9**		**M**
0.75pF(**R75**)	**7**	**8**		**9**	**9**		**M**
1.0pF(**1R0**)	**7**	**8**		**9**	**9**		**M**
1.1pF(**1R1**)	**7**	**8**		**9**	**9**		**M**
1.2pF(**1R2**)	**7**	**8**		**9**	**9**		**M**
1.3pF(**1R3**)	**7**	**8**		**9**	**9**		**M**
1.5pF(**1R5**)	**7**	**8**		**9**	**9**		**M**
1.6pF(**1R6**)	**7**	**8**		**9**	**9**		**M**
1.8pF(**1R8**)	**7**	**8**		**9**	**9**		**M**
2.0pF(**2R0**)	**7**	**8**		**9**	**9**		**M**
2.2pF(**2R2**)	**7**	**8**		**9**	**9**		**M**
2.4pF(**2R4**)	**7**	**8**		**9**	**9**		**M**
2.7pF(**2R7**)	**7**	**8**		**9**	**9**		**M**
3.0pF(**3R0**)	**7**	**8**		**9**	**9**		**M**
3.3pF(**3R3**)	**7**	**8**		**9**	**9**		**M**
3.6pF(**3R6**)	**7**	**8**		**9**	**9**		**M**
3.9pF(**3R9**)	**7**	**8**		**9**	**9**		**M**
4.0pF(**4R0**)	**7**	**8**		**9**	**9**		**M**
4.3pF(**4R3**)	**7**	**8**		**9**	**9**		**M**
4.7pF(**4R7**)	**7**	**8**		**9**	**9**		**M**
5.0pF(**5R0**)	**7**	**8**		**9**	**9**		**M**
5.1pF(**5R1**)	**7**	**8**		**9**	**9**		**M**
5.6pF(**5R6**)	**7**	**8**		**9**	**9**		**M**
6.0pF(**6R0**)	**7**	**8**		**9**	**9**		**M**
6.2pF(**6R2**)	**7**	**8**		**9**	**9**		**M**
6.8pF(**6R8**)	**7**	**8**		**9**	**9**		**M**
7.0pF(**7R0**)	**7**		**8**	**9**	**9**		**M**
7.5pF(**7R5**)	**7**		**8**	**9**	**9**		**M**
8.0pF(**8R0**)	**7**		**8**	**9**	**9**		**M**
8.2pF(**8R2**)	**7**		**8**	**9**	**9**		**M**
9.0pF(**9R0**)	**7**		**8**	**9**	**9**		**M**
9.1pF(**9R1**)	**7**		**8**	**9**	**9**		**M**
10pF(**100**)	**7**		**8**	**9**	**9**		**M**
11pF(**110**)	**7**		**8**	**9**	**9**		**M**
12pF(**120**)	**7**		**8**	**9**	**9**		**M**
13pF(**130**)	**7**		**8**	**9**	**9**		**M**
15pF(**150**)	**7**		**8**	**9**	**9**		**M**
16pF(**160**)	**7**		**8**	**9**	**9**		**M**
18pF(**180**)	**7**		**8**	**9**	**9**		**M**
20pF(**200**)	**7**		**8**	**9**		**9**	**M**
22pF(**220**)	**7**		**8**	**9**		**9**	**M**
24pF(**240**)	**7**		**8**	**9**		**9**	**M**
27pF(**270**)	**7**		**8**	**9**		**9**	**M**
30pF(**300**)	**7**		**8**	**9**		**9**	**M**
33pF(**330**)	**7**		**8**	**9**		**9**	**M**
36pF(**360**)	**7**		**8**	**9**		**9**	**M**
39pF(**390**)	**7**		**8**	**9**		**9**	**M**
43pF(**430**)	**7**		**8**	**9**		**9**	**M**
47pF(**470**)	**7**		**8**	**9**		**9**	**M**
51pF(**510**)			**8**	**9**		**9**	**M**
56pF(**560**)			**8**	**9**		**9**	**M**
62pF(**620**)			**8**	**9**		**9**	**M**
68pF(**680**)			**8**	**9**		**9**	**M**
75pF(**750**)			**8**	**9**		**9**	**M**
82pF(**820**)			**8**	**9**		**9**	**M**
91pF(**910**)			**8**	**9**		**9**	**M**
100pF(**101**)			**8**	**9**		**9**	**M**

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		1.6x0.8(**18**)<0603>	
Rated Volt. [Vdc]		250(**2E**)	100(**2A**)
Capacitance	Tolerance	Part Number	
0.10pF(**R10**)	±0.1pF(**B**)	**GQM1875C2ER10BB12D**	
0.20pF(**R20**)	±0.1pF(**B**)	**GQM1875C2ER20BB12D**	
0.30pF(**R30**)	±0.1pF(**B**)	**GQM1875C2ER30BB12D**	
	±0.25pF(**C**)	**GQM1875C2ER30CB12D**	
0.40pF(**R40**)	±0.1pF(**B**)	**GQM1875C2ER40BB12D**	
	±0.25pF(**C**)	**GQM1875C2ER40CB12D**	
0.50pF(**R50**)	±0.1pF(**B**)	**GQM1875C2ER50BB12D**	**GQM1885C2AR50BB01D**
	±0.25pF(**C**)	**GQM1875C2ER50CB12D**	**GQM1885C2AR50CB01D**
0.75pF(**R75**)	±0.1pF(**B**)	**GQM1875C2ER75BB12D**	**GQM1885C2AR75BB01D**
	±0.25pF(**C**)	**GQM1875C2ER75CB12D**	**GQM1885C2AR75CB01D**
1.0pF(**1R0**)	±0.1pF(**B**)	**GQM1875C2E1R0BB12D**	**GQM1885C2A1R0BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R0CB12D**	**GQM1885C2A1R0CB01D**
1.1pF(**1R1**)	±0.1pF(**B**)	**GQM1875C2E1R1BB12D**	**GQM1885C2A1R1BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R1CB12D**	**GQM1885C2A1R1CB01D**
1.2pF(**1R2**)	±0.1pF(**B**)	**GQM1875C2E1R2BB12D**	**GQM1885C2A1R2BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R2CB12D**	**GQM1885C2A1R2CB01D**
1.3pF(**1R3**)	±0.1pF(**B**)	**GQM1875C2E1R3BB12D**	**GQM1885C2A1R3BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R3CB12D**	**GQM1885C2A1R3CB01D**
1.5pF(**1R5**)	±0.1pF(**B**)	**GQM1875C2E1R5BB12D**	**GQM1885C2A1R5BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R5CB12D**	**GQM1885C2A1R5CB01D**
1.6pF(**1R6**)	±0.1pF(**B**)	**GQM1875C2E1R6BB12D**	**GQM1885C2A1R6BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R6CB12D**	**GQM1885C2A1R6CB01D**
1.8pF(**1R8**)	±0.1pF(**B**)	**GQM1875C2E1R8BB12D**	**GQM1885C2A1R8BB01D**
	±0.25pF(**C**)	**GQM1875C2E1R8CB12D**	**GQM1885C2A1R8CB01D**
2.0pF(**2R0**)	±0.1pF(**B**)	**GQM1875C2E2R0BB12D**	**GQM1885C2A2R0BB01D**
	±0.25pF(**C**)	**GQM1875C2E2R0CB12D**	**GQM1885C2A2R0CB01D**
2.2pF(**2R2**)	±0.1pF(**B**)	**GQM1875C2E2R2BB12D**	**GQM1885C2A2R2BB01D**
	±0.25pF(**C**)	**GQM1875C2E2R2CB12D**	**GQM1885C2A2R2CB01D**
2.4pF(**2R4**)	±0.1pF(**B**)	**GQM1875C2E2R4BB12D**	**GQM1885C2A2R4BB01D**
	±0.25pF(**C**)	**GQM1875C2E2R4CB12D**	**GQM1885C2A2R4CB01D**
2.7pF(**2R7**)	±0.1pF(**B**)	**GQM1875C2E2R7BB12D**	**GQM1885C2A2R7BB01D**
	±0.25pF(**C**)	**GQM1875C2E2R7CB12D**	**GQM1885C2A2R7CB01D**
3.0pF(**3R0**)	±0.1pF(**B**)	**GQM1875C2E3R0BB12D**	**GQM1885C2A3R0BB01D**
	±0.25pF(**C**)	**GQM1875C2E3R0CB12D**	**GQM1885C2A3R0CB01D**
3.3pF(**3R3**)	±0.1pF(**B**)	**GQM1875C2E3R3BB12D**	**GQM1885C2A3R3BB01D**
	±0.25pF(**C**)	**GQM1875C2E3R3CB12D**	**GQM1885C2A3R3CB01D**
3.6pF(**3R6**)	±0.1pF(**B**)	**GQM1875C2E3R6BB12D**	**GQM1885C2A3R6BB01D**
	±0.25pF(**C**)	**GQM1875C2E3R6CB12D**	**GQM1885C2A3R6CB01D**
3.9pF(**3R9**)	±0.1pF(**B**)	**GQM1875C2E3R9BB12D**	**GQM1885C2A3R9BB01D**
	±0.25pF(**C**)	**GQM1875C2E3R9CB12D**	**GQM1885C2A3R9CB01D**
4.0pF(**4R0**)	±0.1pF(**B**)	**GQM1875C2E4R0BB12D**	**GQM1885C2A4R0BB01D**
	±0.25pF(**C**)	**GQM1875C2E4R0CB12D**	**GQM1885C2A4R0CB01D**
4.3pF(**4R3**)	±0.1pF(**B**)	**GQM1875C2E4R3BB12D**	**GQM1885C2A4R3BB01D**
	±0.25pF(**C**)	**GQM1875C2E4R3CB12D**	**GQM1885C2A4R3CB01D**
4.7pF(**4R7**)	±0.1pF(**B**)	**GQM1875C2E4R7BB12D**	**GQM1885C2A4R7BB01D**
	±0.25pF(**C**)	**GQM1875C2E4R7CB12D**	**GQM1885C2A4R7CB01D**
5.0pF(**5R0**)	±0.1pF(**B**)	**GQM1875C2E5R0BB12D**	**GQM1885C2A5R0BB01D**
	±0.25pF(**C**)	**GQM1875C2E5R0CB12D**	**GQM1885C2A5R0CB01D**

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

(Part Number) **GQ M 18 7 5C 2E R10 B B12 D**
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶Product ID ❷Series ❸Dimensions (LxW) ❹Dimension (T)
❺Temperature Characteristics ❻Rated Voltage ❼Capacitance
❽Capacitance Tolerance ❾Individual Specification Code ❿Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		1.6x0.8(**18**)<0603>		
Rated Volt. [Vdc]		250(**2E**)	100(**2A**)	50(**1H**)
Capacitance	Tolerance	Part Number		
5.1pF(**5R1**)	±0.25pF(**C**)	**GQM1875C2E5R1CB12D**	**GQM1885C2A5R1CB01D**	
	±0.5pF(**D**)	**GQM1875C2E5R1DB12D**	**GQM1885C2A5R1DB01D**	
5.6pF(**5R6**)	±0.25pF(**C**)	**GQM1875C2E5R6CB12D**	**GQM1885C2A5R6CB01D**	
	±0.5pF(**D**)	**GQM1875C2E5R6DB12D**	**GQM1885C2A5R6DB01D**	
6.0pF(**6R0**)	±0.25pF(**C**)	**GQM1875C2E6R0CB12D**	**GQM1885C2A6R0CB01D**	
	±0.5pF(**D**)	**GQM1875C2E6R0DB12D**	**GQM1885C2A6R0DB01D**	
6.2pF(**6R2**)	±0.25pF(**C**)	**GQM1875C2E6R2CB12D**	**GQM1885C2A6R2CB01D**	
	±0.5pF(**D**)	**GQM1875C2E6R2DB12D**	**GQM1885C2A6R2DB01D**	
6.8pF(**6R8**)	±0.25pF(**C**)	**GQM1875C2E6R8CB12D**	**GQM1885C2A6R8CB01D**	
	±0.5pF(**D**)	**GQM1875C2E6R8DB12D**	**GQM1885C2A6R8DB01D**	
7.0pF(**7R0**)	±0.25pF(**C**)	**GQM1875C2E7R0CB12D**		**GQM1885C1H7R0CB01D**
	±0.5pF(**D**)	**GQM1875C2E7R0DB12D**		**GQM1885C1H7R0DB01D**
7.5pF(**7R5**)	±0.25pF(**C**)	**GQM1875C2E7R5CB12D**		**GQM1885C1H7R5CB01D**
	±0.5pF(**D**)	**GQM1875C2E7R5DB12D**		**GQM1885C1H7R5DB01D**
8.0pF(**8R0**)	±0.25pF(**C**)	**GQM1875C2E8R0CB12D**		**GQM1885C1H8R0CB01D**
	±0.5pF(**D**)	**GQM1875C2E8R0DB12D**		**GQM1885C1H8R0DB01D**
8.2pF(**8R2**)	±0.25pF(**C**)	**GQM1875C2E8R2CB12D**		**GQM1885C1H8R2CB01D**
	±0.5pF(**D**)	**GQM1875C2E8R2DB12D**		**GQM1885C1H8R2DB01D**
9.0pF(**9R0**)	±0.25pF(**C**)	**GQM1875C2E9R0CB12D**		**GQM1885C1H9R0CB01D**
	±0.5pF(**D**)	**GQM1875C2E9R0DB12D**		**GQM1885C1H9R0DB01D**
9.1pF(**9R1**)	±0.25pF(**C**)	**GQM1875C2E9R1CB12D**		**GQM1885C1H9R1CB01D**
	±0.5pF(**D**)	**GQM1875C2E9R1DB12D**		**GQM1885C1H9R1DB01D**
10pF(**100**)	±2%(**G**)	**GQM1875C2E100GB12D**		**GQM1885C1H100GB01D**
	±5%(**J**)	**GQM1875C2E100JB12D**		**GQM1885C1H100JB01D**
11pF(**110**)	±2%(**G**)	**GQM1875C2E110GB12D**		**GQM1885C1H110GB01D**
	±5%(**J**)	**GQM1875C2E110JB12D**		**GQM1885C1H110JB01D**
12pF(**120**)	±2%(**G**)	**GQM1875C2E120GB12D**		**GQM1885C1H120GB01D**
	±5%(**J**)	**GQM1875C2E120JB12D**		**GQM1885C1H120JB01D**
13pF(**130**)	±2%(**G**)	**GQM1875C2E130GB12D**		**GQM1885C1H130GB01D**
	±5%(**J**)	**GQM1875C2E130JB12D**		**GQM1885C1H130JB01D**
15pF(**150**)	±2%(**G**)	**GQM1875C2E150GB12D**		**GQM1885C1H150GB01D**
	±5%(**J**)	**GQM1875C2E150JB12D**		**GQM1885C1H150JB01D**
16pF(**160**)	±2%(**G**)	**GQM1875C2E160GB12D**		**GQM1885C1H160GB01D**
	±5%(**J**)	**GQM1875C2E160JB12D**		**GQM1885C1H160JB01D**
18pF(**180**)	±2%(**G**)	**GQM1875C2E180GB12D**		**GQM1885C1H180GB01D**
	±5%(**J**)	**GQM1875C2E180JB12D**		**GQM1885C1H180JB01D**
20pF(**200**)	±2%(**G**)	**GQM1875C2E200GB12D**		**GQM1885C1H200GB01D**
	±5%(**J**)	**GQM1875C2E200JB12D**		**GQM1885C1H200JB01D**
22pF(**220**)	±2%(**G**)	**GQM1875C2E220GB12D**		**GQM1885C1H220GB01D**
	±5%(**J**)	**GQM1875C2E220JB12D**		**GQM1885C1H220JB01D**
24pF(**240**)	±2%(**G**)	**GQM1875C2E240GB12D**		**GQM1885C1H240GB01D**
	±5%(**J**)	**GQM1875C2E240JB12D**		**GQM1885C1H240JB01D**
27pF(**270**)	±2%(**G**)	**GQM1875C2E270GB12D**		**GQM1885C1H270GB01D**
	±5%(**J**)	**GQM1875C2E270JB12D**		**GQM1885C1H270JB01D**
30pF(**300**)	±2%(**G**)	**GQM1875C2E300GB12D**		**GQM1885C1H300GB01D**
	±5%(**J**)	**GQM1875C2E300JB12D**		**GQM1885C1H300JB01D**

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		1.6x0.8(**18**)<0603>	
Rated Volt. [Vdc]		250(**2E**)	50(**1H**)
Capacitance	Tolerance	Part Number	
33pF(**330**)	±2%(**G**)	**GQM1875C2E330GB12D**	**GQM1885C1H330GB01D**
	±5%(**J**)	**GQM1875C2E330JB12D**	**GQM1885C1H330JB01D**
36pF(**360**)	±2%(**G**)	**GQM1875C2E360GB12D**	**GQM1885C1H360GB01D**
	±5%(**J**)	**GQM1875C2E360JB12D**	**GQM1885C1H360JB01D**
39pF(**390**)	±2%(**G**)	**GQM1875C2E390GB12D**	**GQM1885C1H390GB01D**
	±5%(**J**)	**GQM1875C2E390JB12D**	**GQM1885C1H390JB01D**
43pF(**430**)	±2%(**G**)	**GQM1875C2E430GB12D**	**GQM1885C1H430GB01D**
	±5%(**J**)	**GQM1875C2E430JB12D**	**GQM1885C1H430JB01D**
47pF(**470**)	±2%(**G**)	**GQM1875C2E470GB12D**	**GQM1885C1H470GB01D**
	±5%(**J**)	**GQM1875C2E470JB12D**	**GQM1885C1H470JB01D**
51pF(**510**)	±2%(**G**)		**GQM1885C1H510GB01D**
	±5%(**J**)		**GQM1885C1H510JB01D**
56pF(**560**)	±2%(**G**)		**GQM1885C1H560GB01D**
	±5%(**J**)		**GQM1885C1H560JB01D**
62pF(**620**)	±2%(**G**)		**GQM1885C1H620GB01D**
	±5%(**J**)		**GQM1885C1H620JB01D**
68pF(**680**)	±2%(**G**)		**GQM1885C1H680GB01D**
	±5%(**J**)		**GQM1885C1H680JB01D**
75pF(**750**)	±2%(**G**)		**GQM1885C1H750GB01D**
	±5%(**J**)		**GQM1885C1H750JB01D**
82pF(**820**)	±2%(**G**)		**GQM1885C1H820GB01D**
	±5%(**J**)		**GQM1885C1H820JB01D**
91pF(**910**)	±2%(**G**)		**GQM1885C1H910GB01D**
	±5%(**J**)		**GQM1885C1H910JB01D**
100pF(**101**)	±2%(**G**)		**GQM1885C1H101GB01D**
	±5%(**J**)		**GQM1885C1H101JB01D**

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

(Part Number) **GQ M 18 7 5C 2E 330 G B12 D**
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶Product ID ❷Series ❸Dimensions (LxW) ❹Dimension (T)
❺Temperature Characteristics ❻Rated Voltage ❼Capacitance
❽Capacitance Tolerance ❾Individual Specification Code ❿Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		2.0x1.25(**21**)<0805>		2.8x2.8(**22**)<1111>
Rated Volt. [Vdc]		250(**2E**)	100(**2A**)	500(**2H**)
Capacitance	Tolerance	Part Number		
0.50pF(**R50**)	±0.1pF(**B**)	**GQM2195C2ER50BB12D**	**GQM2195C2AR50BB01D**	**GQM22M5C2HR50BB01L**
	±0.25pF(**C**)	**GQM2195C2ER50CB12D**	**GQM2195C2AR50CB01D**	**GQM22M5C2HR50CB01L**
0.75pF(**R75**)	±0.1pF(**B**)	**GQM2195C2ER75BB12D**	**GQM2195C2AR75BB01D**	**GQM22M5C2HR75BB01L**
	±0.25pF(**C**)	**GQM2195C2ER75CB12D**	**GQM2195C2AR75CB01D**	**GQM22M5C2HR75CB01L**
1.0pF(**1R0**)	±0.1pF(**B**)	**GQM2195C2E1R0BB12D**	**GQM2195C2A1R0BB01D**	**GQM22M5C2H1R0BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R0CB12D**	**GQM2195C2A1R0CB01D**	**GQM22M5C2H1R0CB01L**
1.1pF(**1R1**)	±0.1pF(**B**)	**GQM2195C2E1R1BB12D**	**GQM2195C2A1R1BB01D**	**GQM22M5C2H1R1BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R1CB12D**	**GQM2195C2A1R1CB01D**	**GQM22M5C2H1R1CB01L**
1.2pF(**1R2**)	±0.1pF(**B**)	**GQM2195C2E1R2BB12D**	**GQM2195C2A1R2BB01D**	**GQM22M5C2H1R2BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R2CB12D**	**GQM2195C2A1R2CB01D**	**GQM22M5C2H1R2CB01L**
1.3pF(**1R3**)	±0.1pF(**B**)	**GQM2195C2E1R3BB12D**	**GQM2195C2A1R3BB01D**	**GQM22M5C2H1R3BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R3CB12D**	**GQM2195C2A1R3CB01D**	**GQM22M5C2H1R3CB01L**
1.5pF(**1R5**)	±0.1pF(**B**)	**GQM2195C2E1R5BB12D**	**GQM2195C2A1R5BB01D**	**GQM22M5C2H1R5BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R5CB12D**	**GQM2195C2A1R5CB01D**	**GQM22M5C2H1R5CB01L**
1.6pF(**1R6**)	±0.1pF(**B**)	**GQM2195C2E1R6BB12D**	**GQM2195C2A1R6BB01D**	**GQM22M5C2H1R6BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R6CB12D**	**GQM2195C2A1R6CB01D**	**GQM22M5C2H1R6CB01L**
1.8pF(**1R8**)	±0.1pF(**B**)	**GQM2195C2E1R8BB12D**	**GQM2195C2A1R8BB01D**	**GQM22M5C2H1R8BB01L**
	±0.25pF(**C**)	**GQM2195C2E1R8CB12D**	**GQM2195C2A1R8CB01D**	**GQM22M5C2H1R8CB01L**
2.0pF(**2R0**)	±0.1pF(**B**)	**GQM2195C2E2R0BB12D**	**GQM2195C2A2R0BB01D**	**GQM22M5C2H2R0BB01L**
	±0.25pF(**C**)	**GQM2195C2E2R0CB12D**	**GQM2195C2A2R0CB01D**	**GQM22M5C2H2R0CB01L**
2.2pF(**2R2**)	±0.1pF(**B**)	**GQM2195C2E2R2BB12D**	**GQM2195C2A2R2BB01D**	**GQM22M5C2H2R2BB01L**
	±0.25pF(**C**)	**GQM2195C2E2R2CB12D**	**GQM2195C2A2R2CB01D**	**GQM22M5C2H2R2CB01L**
2.4pF(**2R4**)	±0.1pF(**B**)	**GQM2195C2E2R4BB12D**	**GQM2195C2A2R4BB01D**	**GQM22M5C2H2R4BB01L**
	±0.25pF(**C**)	**GQM2195C2E2R4CB12D**	**GQM2195C2A2R4CB01D**	**GQM22M5C2H2R4CB01L**
2.7pF(**2R7**)	±0.1pF(**B**)	**GQM2195C2E2R7BB12D**	**GQM2195C2A2R7BB01D**	**GQM22M5C2H2R7BB01L**
	±0.25pF(**C**)	**GQM2195C2E2R7CB12D**	**GQM2195C2A2R7CB01D**	**GQM22M5C2H2R7CB01L**
3.0pF(**3R0**)	±0.1pF(**B**)	**GQM2195C2E3R0BB12D**	**GQM2195C2A3R0BB01D**	**GQM22M5C2H3R0BB01L**
	±0.25pF(**C**)	**GQM2195C2E3R0CB12D**	**GQM2195C2A3R0CB01D**	**GQM22M5C2H3R0CB01L**
3.3pF(**3R3**)	±0.1pF(**B**)	**GQM2195C2E3R3BB12D**	**GQM2195C2A3R3BB01D**	**GQM22M5C2H3R3BB01L**
	±0.25pF(**C**)	**GQM2195C2E3R3CB12D**	**GQM2195C2A3R3CB01D**	**GQM22M5C2H3R3CB01L**
3.6pF(**3R6**)	±0.1pF(**B**)	**GQM2195C2E3R6BB12D**	**GQM2195C2A3R6BB01D**	**GQM22M5C2H3R6BB01L**
	±0.25pF(**C**)	**GQM2195C2E3R6CB12D**	**GQM2195C2A3R6CB01D**	**GQM22M5C2H3R6CB01L**
3.9pF(**3R9**)	±0.1pF(**B**)	**GQM2195C2E3R9BB12D**	**GQM2195C2A3R9BB01D**	**GQM22M5C2H3R9BB01L**
	±0.25pF(**C**)	**GQM2195C2E3R9CB12D**	**GQM2195C2A3R9CB01D**	**GQM22M5C2H3R9CB01L**
4.0pF(**4R0**)	±0.1pF(**B**)	**GQM2195C2E4R0BB12D**	**GQM2195C2A4R0BB01D**	**GQM22M5C2H4R0BB01L**
	±0.25pF(**C**)	**GQM2195C2E4R0CB12D**	**GQM2195C2A4R0CB01D**	**GQM22M5C2H4R0CB01L**
4.3pF(**4R3**)	±0.1pF(**B**)	**GQM2195C2E4R3BB12D**	**GQM2195C2A4R3BB01D**	**GQM22M5C2H4R3BB01L**
	±0.25pF(**C**)	**GQM2195C2E4R3CB12D**	**GQM2195C2A4R3CB01D**	**GQM22M5C2H4R3CB01L**
4.7pF(**4R7**)	±0.1pF(**B**)	**GQM2195C2E4R7BB12D**	**GQM2195C2A4R7BB01D**	**GQM22M5C2H4R7BB01L**
	±0.25pF(**C**)	**GQM2195C2E4R7CB12D**	**GQM2195C2A4R7CB01D**	**GQM22M5C2H4R7CB01L**
5.0pF(**5R0**)	±0.1pF(**B**)	**GQM2195C2E5R0BB12D**	**GQM2195C2A5R0BB01D**	**GQM22M5C2H5R0BB01L**
	±0.25pF(**C**)	**GQM2195C2E5R0CB12D**	**GQM2195C2A5R0CB01D**	**GQM22M5C2H5R0CB01L**
5.1pF(**5R1**)	±0.25pF(**C**)	**GQM2195C2E5R1CB12D**	**GQM2195C2A5R1CB01D**	**GQM22M5C2H5R1CB01L**
	±0.5pF(**D**)	**GQM2195C2E5R1DB12D**	**GQM2195C2A5R1DB01D**	**GQM22M5C2H5R1DB01L**
5.6pF(**5R6**)	±0.25pF(**C**)	**GQM2195C2E5R6CB12D**	**GQM2195C2A5R6CB01D**	**GQM22M5C2H5R6CB01L**
	±0.5pF(**D**)	**GQM2195C2E5R6DB12D**	**GQM2195C2A5R6DB01D**	**GQM22M5C2H5R6DB01L**
6.0pF(**6R0**)	±0.25pF(**C**)	**GQM2195C2E6R0CB12D**	**GQM2195C2A6R0CB01D**	**GQM22M5C2H6R0CB01L**
	±0.5pF(**D**)	**GQM2195C2E6R0DB12D**	**GQM2195C2A6R0DB01D**	**GQM22M5C2H6R0DB01L**

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		2.0x1.25(**21**)<0805>			2.8x2.8(**22**)<1111>
Rated Volt. [Vdc]		250(**2E**)	100(**2A**)	50(**1H**)	500(**2H**)
Capacitance	Tolerance	Part Number			
6.2pF(**6R2**)	±0.25pF(**C**)	**GQM2195C2E6R2CB12D**	**GQM2195C2A6R2CB01D**		**GQM22M5C2H6R2CB01L**
	±0.5pF(**D**)	**GQM2195C2E6R2DB12D**	**GQM2195C2A6R2DB01D**		**GQM22M5C2H6R2DB01L**
6.8pF(**6R8**)	±0.25pF(**C**)	**GQM2195C2E6R8CB12D**	**GQM2195C2A6R8CB01D**		**GQM22M5C2H6R8CB01L**
	±0.5pF(**D**)	**GQM2195C2E6R8DB12D**	**GQM2195C2A6R8DB01D**		**GQM22M5C2H6R8DB01L**
7.0pF(**7R0**)	±0.25pF(**C**)	**GQM2195C2E7R0CB12D**	**GQM2195C2A7R0CB01D**		**GQM22M5C2H7R0CB01L**
	±0.5pF(**D**)	**GQM2195C2E7R0DB12D**	**GQM2195C2A7R0DB01D**		**GQM22M5C2H7R0DB01L**
7.5pF(**7R5**)	±0.25pF(**C**)	**GQM2195C2E7R5CB12D**	**GQM2195C2A7R5CB01D**		**GQM22M5C2H7R5CB01L**
	±0.5pF(**D**)	**GQM2195C2E7R5DB12D**	**GQM2195C2A7R5DB01D**		**GQM22M5C2H7R5DB01L**
8.0pF(**8R0**)	±0.25pF(**C**)	**GQM2195C2E8R0CB12D**	**GQM2195C2A8R0CB01D**		**GQM22M5C2H8R0CB01L**
	±0.5pF(**D**)	**GQM2195C2E8R0DB12D**	**GQM2195C2A8R0DB01D**		**GQM22M5C2H8R0DB01L**
8.2pF(**8R2**)	±0.25pF(**C**)	**GQM2195C2E8R2CB12D**	**GQM2195C2A8R2CB01D**		**GQM22M5C2H8R2CB01L**
	±0.5pF(**D**)	**GQM2195C2E8R2DB12D**	**GQM2195C2A8R2DB01D**		**GQM22M5C2H8R2DB01L**
9.0pF(**9R0**)	±0.25pF(**C**)	**GQM2195C2E9R0CB12D**	**GQM2195C2A9R0CB01D**		**GQM22M5C2H9R0CB01L**
	±0.5pF(**D**)	**GQM2195C2E9R0DB12D**	**GQM2195C2A9R0DB01D**		**GQM22M5C2H9R0DB01L**
9.1pF(**9R1**)	±0.25pF(**C**)	**GQM2195C2E9R1CB12D**	**GQM2195C2A9R1CB01D**		**GQM22M5C2H9R1CB01L**
	±0.5pF(**D**)	**GQM2195C2E9R1DB12D**	**GQM2195C2A9R1DB01D**		**GQM22M5C2H9R1DB01L**
10pF(**100**)	±2%(**G**)	**GQM2195C2E100GB12D**	**GQM2195C2A100GB01D**		**GQM22M5C2H100GB01L**
	±5%(**J**)	**GQM2195C2E100JB12D**	**GQM2195C2A100JB01D**		**GQM22M5C2H100JB01L**
11pF(**110**)	±2%(**G**)	**GQM2195C2E110GB12D**	**GQM2195C2A110GB01D**		**GQM22M5C2H110GB01L**
	±5%(**J**)	**GQM2195C2E110JB12D**	**GQM2195C2A110JB01D**		**GQM22M5C2H110JB01L**
12pF(**120**)	±2%(**G**)	**GQM2195C2E120GB12D**	**GQM2195C2A120GB01D**		**GQM22M5C2H120GB01L**
	±5%(**J**)	**GQM2195C2E120JB12D**	**GQM2195C2A120JB01D**		**GQM22M5C2H120JB01L**
13pF(**130**)	±2%(**G**)	**GQM2195C2E130GB12D**	**GQM2195C2A130GB01D**		**GQM22M5C2H130GB01L**
	±5%(**J**)	**GQM2195C2E130JB12D**	**GQM2195C2A130JB01D**		**GQM22M5C2H130JB01L**
15pF(**150**)	±2%(**G**)	**GQM2195C2E150GB12D**	**GQM2195C2A150GB01D**		**GQM22M5C2H150GB01L**
	±5%(**J**)	**GQM2195C2E150JB12D**	**GQM2195C2A150JB01D**		**GQM22M5C2H150JB01L**
16pF(**160**)	±2%(**G**)	**GQM2195C2E160GB12D**	**GQM2195C2A160GB01D**		**GQM22M5C2H160GB01L**
	±5%(**J**)	**GQM2195C2E160JB12D**	**GQM2195C2A160JB01D**		**GQM22M5C2H160JB01L**
18pF(**180**)	±2%(**G**)	**GQM2195C2E180GB12D**	**GQM2195C2A180GB01D**		**GQM22M5C2H180GB01L**
	±5%(**J**)	**GQM2195C2E180JB12D**	**GQM2195C2A180JB01D**		**GQM22M5C2H180JB01L**
20pF(**200**)	±2%(**G**)	**GQM2195C2E200GB12D**		**GQM2195C1H200GB01D**	**GQM22M5C2H200GB01L**
	±5%(**J**)	**GQM2195C2E200JB12D**		**GQM2195C1H200JB01D**	**GQM22M5C2H200JB01L**
22pF(**220**)	±2%(**G**)	**GQM2195C2E220GB12D**		**GQM2195C1H220GB01D**	**GQM22M5C2H220GB01L**
	±5%(**J**)	**GQM2195C2E220JB12D**		**GQM2195C1H220JB01D**	**GQM22M5C2H220JB01L**
24pF(**240**)	±2%(**G**)	**GQM2195C2E240GB12D**		**GQM2195C1H240GB01D**	**GQM22M5C2H240GB01L**
	±5%(**J**)	**GQM2195C2E240JB12D**		**GQM2195C1H240JB01D**	**GQM22M5C2H240JB01L**
27pF(**270**)	±2%(**G**)	**GQM2195C2E270GB12D**		**GQM2195C1H270GB01D**	**GQM22M5C2H270GB01L**
	±5%(**J**)	**GQM2195C2E270JB12D**		**GQM2195C1H270JB01D**	**GQM22M5C2H270JB01L**
30pF(**300**)	±2%(**G**)	**GQM2195C2E300GB12D**		**GQM2195C1H300GB01D**	**GQM22M5C2H300GB01L**
	±5%(**J**)	**GQM2195C2E300JB12D**		**GQM2195C1H300JB01D**	**GQM22M5C2H300JB01L**
33pF(**330**)	±2%(**G**)	**GQM2195C2E330GB12D**		**GQM2195C1H330GB01D**	**GQM22M5C2H330GB01L**
	±5%(**J**)	**GQM2195C2E330JB12D**		**GQM2195C1H330JB01D**	**GQM22M5C2H330JB01L**
36pF(**360**)	±2%(**G**)	**GQM2195C2E360GB12D**		**GQM2195C1H360GB01D**	**GQM22M5C2H360GB01L**
	±5%(**J**)	**GQM2195C2E360JB12D**		**GQM2195C1H360JB01D**	**GQM22M5C2H360JB01L**
39pF(**390**)	±2%(**G**)	**GQM2195C2E390GB12D**		**GQM2195C1H390GB01D**	**GQM22M5C2H390GB01L**
	±5%(**J**)	**GQM2195C2E390JB12D**		**GQM2195C1H390JB01D**	**GQM22M5C2H390JB01L**

The part number code is shown in ( ) and Unit is shown in [ ]. < >: EIA [inch] Code

(Part Number) GQ ❶ | M ❷ | 21 ❸ | 9 ❹ | 5C ❺ | 2E ❻ | 6R2 ❼ | C ❽ | B12 ❾ | D ❿

❶Product ID ❷Series ❸Dimensions (LxW) ❹Dimension (T)
❺Temperature Characteristics ❻Rated Voltage ❼Capacitance
❽Capacitance Tolerance ❾Individual Specification Code ❿Packaging

Packaging Code in Part Number shows STD 180mm Reel Taping.

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Temperature Compensating Type C0G(5C) Characteristics

LxW [mm]		2.0x1.25(**21**)<0805>		2.8x2.8(**22**)<1111>
Rated Volt. [Vdc]		250(**2E**)	50(**1H**)	500(**2H**)
Capacitance	Tolerance	Part Number		
43pF(**430**)	±2%(**G**)	**GQM2195C2E430GB12D**	**GQM2195C1H430GB01D**	**GQM22M5C2H430GB01L**
	±5%(**J**)	**GQM2195C2E430JB12D**	**GQM2195C1H430JB01D**	**GQM22M5C2H430JB01L**
47pF(**470**)	±2%(**G**)	**GQM2195C2E470GB12D**	**GQM2195C1H470GB01D**	**GQM22M5C2H470GB01L**
	±5%(**J**)	**GQM2195C2E470JB12D**	**GQM2195C1H470JB01D**	**GQM22M5C2H470JB01L**
51pF(**510**)	±2%(**G**)	**GQM2195C2E510GB12D**	**GQM2195C1H510GB01D**	**GQM22M5C2H510GB01L**
	±5%(**J**)	**GQM2195C2E510JB12D**	**GQM2195C1H510JB01D**	**GQM22M5C2H510JB01L**
56pF(**560**)	±2%(**G**)	**GQM2195C2E560GB12D**	**GQM2195C1H560GB01D**	**GQM22M5C2H560GB01L**
	±5%(**J**)	**GQM2195C2E560JB12D**	**GQM2195C1H560JB01D**	**GQM22M5C2H560JB01L**
62pF(**620**)	±2%(**G**)	**GQM2195C2E620GB12D**	**GQM2195C1H620GB01D**	**GQM22M5C2H620GB01L**
	±5%(**J**)	**GQM2195C2E620JB12D**	**GQM2195C1H620JB01D**	**GQM22M5C2H620JB01L**
68pF(**680**)	±2%(**G**)	**GQM2195C2E680GB12D**	**GQM2195C1H680GB01D**	**GQM22M5C2H680GB01L**
	±5%(**J**)	**GQM2195C2E680JB12D**	**GQM2195C1H680JB01D**	**GQM22M5C2H680JB01L**
75pF(**750**)	±2%(**G**)	**GQM2195C2E750GB12D**	**GQM2195C1H750GB01D**	**GQM22M5C2H750GB01L**
	±5%(**J**)	**GQM2195C2E750JB12D**	**GQM2195C1H750JB01D**	**GQM22M5C2H750JB01L**
82pF(**820**)	±2%(**G**)	**GQM2195C2E820GB12D**	**GQM2195C1H820GB01D**	**GQM22M5C2H820GB01L**
	±5%(**J**)	**GQM2195C2E820JB12D**	**GQM2195C1H820JB01D**	**GQM22M5C2H820JB01L**
91pF(**910**)	±2%(**G**)	**GQM2195C2E910GB12D**	**GQM2195C1H910GB01D**	**GQM22M5C2H910GB01L**
	±5%(**J**)	**GQM2195C2E910JB12D**	**GQM2195C1H910JB01D**	**GQM22M5C2H910JB01L**
100pF(**101**)	±2%(**G**)	**GQM2195C2E101GB12D**	**GQM2195C1H101GB01D**	**GQM22M5C2H101GB01L**
	±5%(**J**)	**GQM2195C2E101JB12D**	**GQM2195C1H101JB01D**	**GQM22M5C2H101JB01L**

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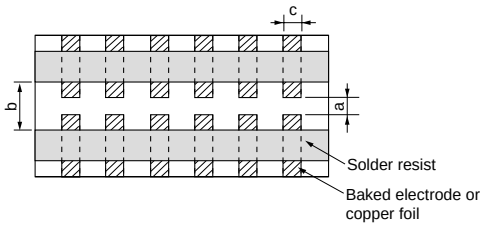
GQM Series Specifications and Test Methods

No.	Item		Specifications	Test Method
1	Operating Temperature		−55 to 125℃	Reference Temperature: 25℃
2	Rated Voltage		See the previous page.	The rated voltage is defined as the maximum voltage that may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V^{P-P} or V^{O-P}, whichever is larger, should be maintained within the rated voltage range.
3	Appearance		No defects or abnormalities	Visual inspection
4	Dimension		Within the specified dimensions	Using calipers
5	Dielectric Strength		No defects or abnormalities	No failure should be observed when 300%* of the rated voltage is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA. *GQM187, GQM219(250V), GQM22: 250% of the rated voltage
6	Insulation Resistance		More than 10,000MΩ	The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at 25℃ and 75%RH max. and within 2 minutes of charging, provided the charge/discharge current is less than 50mA.
7	Capacitance		Within the specified tolerance	The capacitance/Q should be measured at 25℃ at the frequency and voltage shown in the table. Frequency: 1±0.1MHz Voltage: 0.5 to 5Vrms
8	Q		30pF and over: Q≧1400 30pF and below: Q≧800+20C C: Nominal Capacitance (pF)	
9	Capacitance Temperature Characteristics	Temperature Coefficient	Within the specified tolerance (Table A)	The capacitance change should be measured after 5 min. at each specified temp. stage. The temperature coefficient is determined using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from steps 1 through 5 the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as in Table A. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in the steps 1, 3 and 5 by the capacitance value in step 3.
		Capacitance Drift	Within ±0.2% or ±0.05pF (whichever is larger)	
10	Adhesive Strength of Termination		No removal of the terminations or other defect should occur.	Solder the capacitor to the test jig (glass epoxy board) shown in Fig. 1 using a eutectic solder. Then apply 10N* force in parallel with the test jig for 10±1 sec. The soldering should be done either with an iron or using the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock. *5N (GQM188)
11	Vibration Resistance	Appearance	No defects or abnormalities	Solder the capacitor to the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, should be traversed in approximately 1 minute. This motion should be applied for a period of 2 hours in each of 3 mutually perpendicular directions (total of 6 hours).
		Capacitance	Within the specified tolerance	
		Q	30pF and over: Q≧1400 30pF and below: Q≧800+20C C: Nominal Capacitance (pF)	

Step	Temperature (℃)
1	Reference Temp. ±2
2	−55±3
3	Reference Temp. ±2
4	125±3
5	Reference Temp. ±2



Type	a	b	c
GQM18	1.0	3.0	1.2
GQM21	1.2	4.0	1.65
GQM22	2.2	5.0	2.9

(in mm)

Fig. 1

Continued on the following page.

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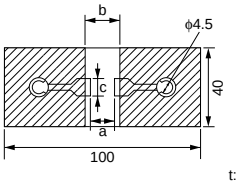
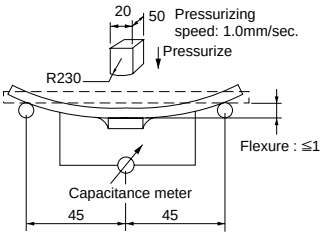
GQM Series Specifications and Test Methods

Continued from the preceding page.

No.	Item		Specifications	Test Method
12	Deflection	Appearance	No defects or abnormalities.	Solder the capacitor on the test jig (glass epoxy board) shown in Fig. 2 using a eutectic solder. Then apply a force in the direction shown in Fig. 3. The soldering should be done by the reflow method and should be conducted with care so that the soldering is uniform and free of defects such as heat shock.
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	
				
			Type / a / b / c GQM18 / 1.0 / 3.0 / 1.2 GQM21 / 1.2 / 4.0 / 1.65 GQM22 / 2.2 / 5.0 / 2.9 (in mm)	
			Fig. 2	Fig. 3
13	Solderability of Termination		75% of the terminations are to be soldered evenly and continuously.	Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120℃ for 10 to 30 seconds. After preheating, immerse in eutectic solder solution for 2±0.5 seconds at 230±5℃ or Sn-3.0Ag-0.5Cu solder solution for 2±0.5 seconds at 245±5°C.
14	Resistance to Soldering Heat		The measured and observed characteristics should satisfy the specifications in the following table.	Preheat the capacitor at 120 to 150℃ for 1 minute. Immerse the capacitor in a eutectic solder or Sn-3.0Ag-0.5Cu solder solution at 270±5℃ for 10±0.5 seconds. Let sit at room temperature for 24±2 hours, then measure.
		Appearance	No defects or abnormalities.	
		Capacitance Change	Within ±2.5% or ±0.25 pF (whichever is larger)	
		Q	30pF and over: Q≧1400 30pF and below: Q≧800+20C C: Nominal Capacitance (pF)	
		I.R.	More than 10,000MΩ	
		Dielectric Strength	No defects.	
15	Temperature Cycle		The measured and observed characteristics should satisfy the specifications in the following table.	Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments listed in the following table. Let sit for 24±2 hours at room temperature, then measure.
		Appearance	No defects or abnormalities.	
		Capacitance Change	Within ±2.5% or ±0.25pF (whichever is larger)	
		Q	30pF and over: Q≧1400 30pF and below: Q≧800+20C C: Nominal Capacitance (pF)	
		I.R.	More than 10,000MΩ	
		Dielectric Strength	No defects.	
16	Humidity Steady State		The measured and observed characteristics should satisfy the specifications in the following table.	Set the capacitor at 40±2℃ and in 90 to 95% humidity for 500±12 hours. Remove and set for 24±2 hours at room temperature, then measure.
		Appearance	No defects or abnormalities.	
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	
		Q	30pF and over: Q≧350 10pF and over, 30pF and below: Q≧275+5C/2 10pF and below: Q≧200+10C C: Nominal Capacitance (pF)	
		I.R.	More than 1,000MΩ	

Step	1	2	3	4
Temp. (℃)	Min. Operating Temp. +0/−3	Room Temp.	Max. Operating Temp. +3/−0	Room Temp.
Time (min.)	30±3	2 to 3	30±3	2 to 3

Continued on the following page.

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GQM Series Specifications and Test Methods

Continued from the preceding page.

No.	Item		Specifications	Test Method
17	Humidity Load		The measured and observed characteristics should satisfy the specifications in the following table.	Apply the rated voltage at 40±2℃ and 90 to 95% humidity for 500±12 hours. Remove and let sit for 24±2 hours at room temperature then measure. The charge/discharge current is less than 50mA.
		Appearance	No defects or abnormalities.	
		Capacitance Change	Within ±7.5% or ±0.75pF (whichever is larger)	
		Q	30pF and over: Q≧200 30pF and below: Q≧100+10C/3 C: Nominal Capacitance (pF)	
		I.R.	More than 500MΩ	
18	High Temperature Load		The measured and observed characteristics should satisfy the specifications in the following table.	Apply 200%* of the rated voltage for 1000±12 hours at the maximum operating temperature ±3℃. Set for 24±2 hours at room temperature, then measure. The charge/discharge current is less than 50mA. *GQM22: 150% of the rated voltage
		Appearance	No defects or abnormalities.	
		Capacitance Change	Within ±3% or ±0.3pF (whichever is larger)	
		Q	30pF and over: Q≧350 10pF and over, 30pF and below: Q≧275+5C/2 10pF and below: Q≧200+10C C: Nominal Capacitance (pF)	
		I.R.	More than 1,000MΩ	

Table A

Char.	Nominal Values (ppm/℃) ∗1	Capacitance Change from 25℃ (%)					
		−55℃		−30℃		−10℃	
		Max.	Min.	Max.	Min.	Max.	Min.
5C	0±30	0.58	−0.24	0.40	−0.17	0.25	−0.11

∗1: Nominal values denote the temperature coefficient within a range of 25 to 125℃.

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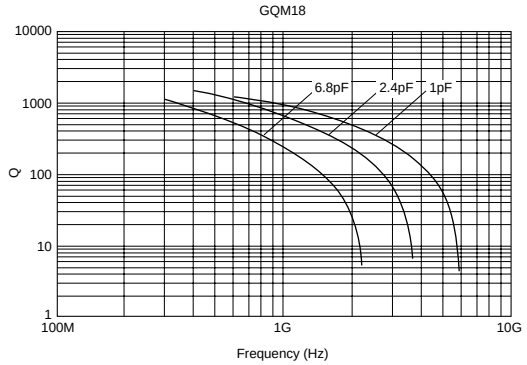
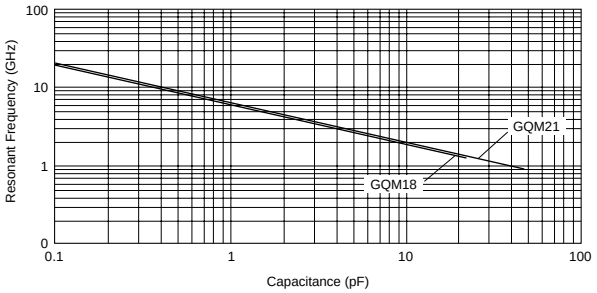
GQM Series Data

■ Q - Frequency Characteristics



■ Resonant Frequency - Capacitance



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