CeramicCapacitor

GCM Series

RoHS REACH AEC-Q200

Chip Multilayer Ceramic Capacitors for Automotive Powertrain/Safety Equipment

AEC-Q200 compliant Capacitor for automotive applications such as power train and safety equipment.

↓ Specific Applications ↓ Features ↓ Specifications ↓ Lineup

Specific Applications

For the detail of specific applications, please refer to the following links or specification sheets.

› Specific Applications Details

› Precautions for use

Consumer equipment	Industrial equipment	Automotive infotainment/comfort equipment	Automotive powertrain/safety equipment	Medical equipment [GHTF A/B/C] except for implant equipment	Implanted medical equip medical equipment [GHT
		✓	✓	✓	

<Related Links>
You can find the recommended uses for each series in the “Applications” section of the FAQ below.

› What are the differences between the GCM, GRT, and GRM series?

Features

1. Ideal for powertrains and safety devices in automotive.

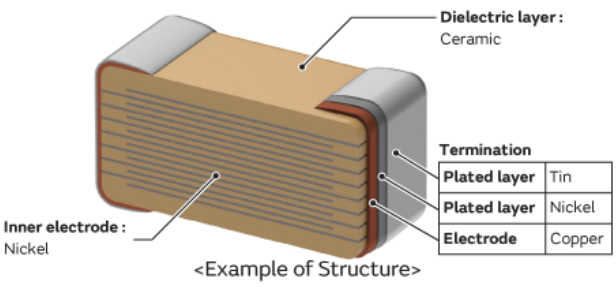
This product can be used for safety devices, such as the drive system control for engine ECU, air bags, and ABS.
This product has cleared test conditions more severe than that of general products (GRM Series) even in temperature cycle and humidity load tests.

Items	General Purpose GRM Series Maximum operating temperature: **125 ºC**	GCM Series for automotive Maximum operating temperature: **150℃**
	Test Method	Test Method
Temperature Cycle	Temperature Cycle: **5 cycles**	Temperature Cycle: **100 cycles (1,000 cycles for AEC-Q200 conforming products)**
Humidity Loading	Test temperature: **40±2℃** Test humidity: **90～95%RH** Test time: 500 hours	Test temperature:**85±2℃** Test humidity:**80～85%RH** Test time: 500 hours**(1,000 hours for AEC-Q200 conforming products)**

2. Can be used at 125 ºC and 150 ºC temperatures.

We also offer a lineup for 150 ºC that can be used in the engine room.

3. Sn plating is applied to the external electrodes; excellent solderability.



<Example of Structure>

Specifications

Size（mm）	0.6x0.3mm - 5.7x5mm
Rated Voltage	2.5Vdc - 1,250Vdc
Capacitance	0.1pF - 220μF
Main applications	Safety equipment,such as drive system control,air bags,and ABS of engine ECU

Lineup

Go to the part number list

Download CSV

You can see the search result of the item you click on the capacitance chart.

Temperature compensating type

Use narrowed products' rows

Clearing all the conditions

Maximum operating temperature	☐ 125℃ ☐ 150℃
LxW	☐ 0.6×0.3 ☐ 1.0×0.5 ☐ 1.6×0.8 ☐ 2.0×1.25 ☐ 3.2×1.6 ☐ 3.2×2.5 ☐ 4.5×3.2 ☐ 5.7×5.0
Rated Voltage	☐ 50Vdc ☐ 25Vdc ☐ 100Vdc ☐ 80Vdc ☐ 63Vdc ☐ 630Vdc ☐ 250Vdc ☐ 1,000Vdc ☐ 1,250Vdc

Available　Under development

Maximum operating temperature	LxW	Rated Voltage	Capacitance (pF: 0.1 1 10 100 1000 / μF: 0.01 0.1 1 10 100 1000)	Capacitance range
125℃	0.6×0.3	50Vdc		0.1pF - 100pF
		25Vdc		0.1pF - 100pF
	1.0×0.5	100Vdc		0.1pF - 1,000pF
		50Vdc		0.11pF - 1,000pF
	1.6×0.8	100Vdc		0.47pF - 10,000pF
		80Vdc		1,600pF - 3,900pF
		63Vdc		1,600pF - 3,900pF
		50Vdc		100pF - 10,000pF

Maximum operating temperature	LxW	Rated Voltage	Capacitance	Capacitance range
			pF: 0.1 1 10 100 1000 / μF: 0.01 0.1 1 10 100 1000	
	2.0×1.25	630Vdc		10pF - 2,200pF
		250Vdc		10pF - 10,000pF
		100Vdc		1,000pF - 39,000pF
		80Vdc		4,300pF - 22,000pF
		50Vdc		12,000pF - 22,000pF
	3.2×1.6	1,000Vdc		10pF - 3,900pF
		630Vdc		10pF - 10,000pF
		250Vdc		6,800pF - 22,000pF
		100Vdc		3,600pF - 0.1μF
		80Vdc		27,000pF - 33,000pF
		50Vdc		27,000pF - 0.1μF
	3.2×2.5	1,250Vdc		4,700pF - 15,000pF
		1,000Vdc		1,200pF - 22,000pF
		630Vdc		1,200pF - 33,000pF
	4.5×3.2	1,000Vdc		2,700pF - 4,700pF
		630Vdc		12,000pF - 22,000pF
	5.7×5.0	1,000Vdc		5,600pF - 10,000pF
		630Vdc		27,000pF - 47,000pF
150℃	1.0×0.5	50Vdc		0.2pF - 1,000pF
	1.6×0.8	100Vdc		10pF - 1,000pF
		50Vdc		1,100pF - 2,700pF
	2.0×1.25	100Vdc		1,100pF - 1,500pF
		50Vdc		3,000pF - 10,000pF
	3.2×1.6	100Vdc		1,600pF - 5,600pF
		50Vdc		11,000pF - 22,000pF

High dielectric constant type

Use narrowed products' rows ?

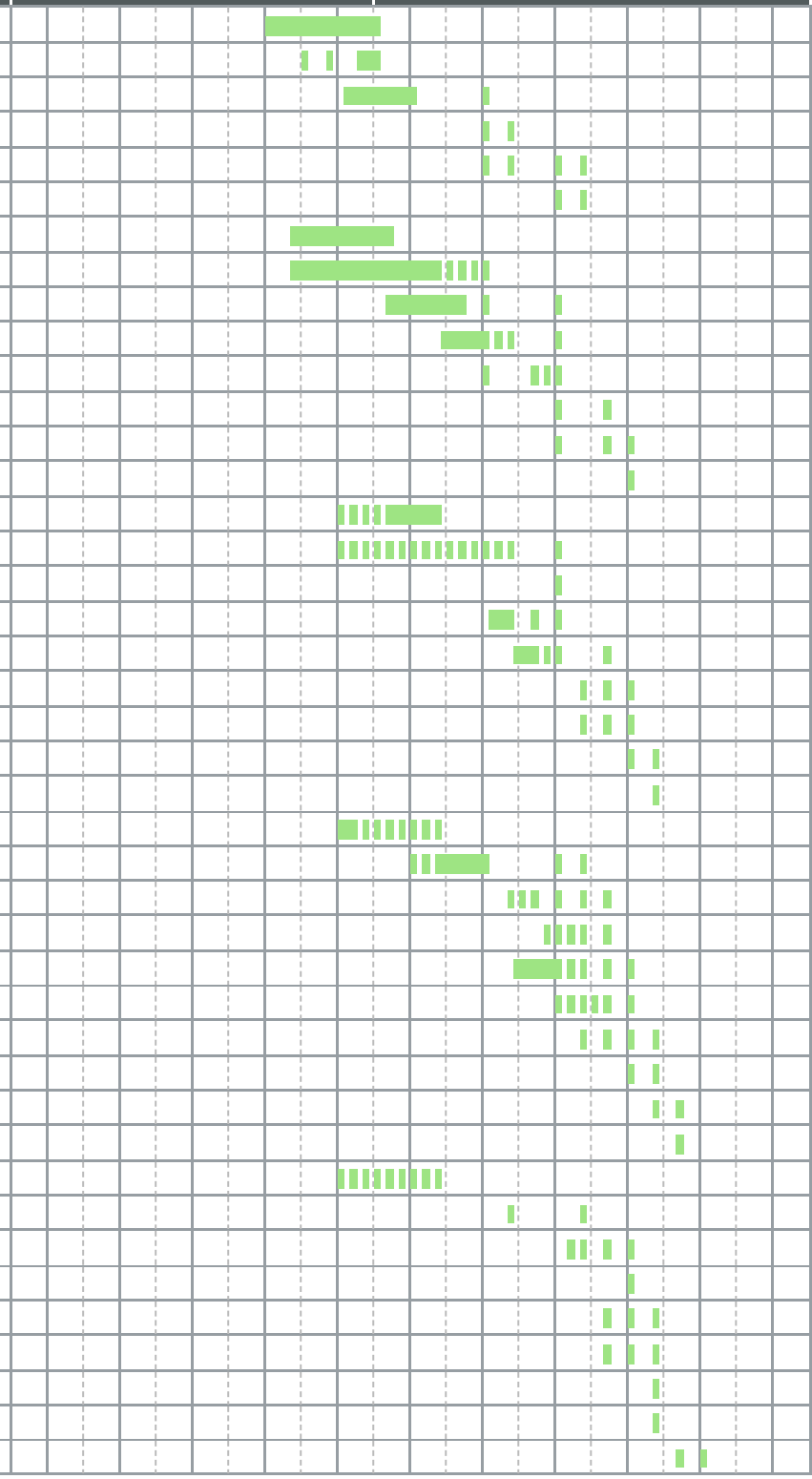
Clearing all the conditions ?

Maximum operating temperature	☐ 125℃ ☐ 150℃
LxW	☐ 0.6×0.3 ☐ 1.0×0.5 ☐ 1.6×0.8 ☐ 2.0×1.25 ☐ 3.2×1.6 ☐ 3.2×2.5

Rated Voltage	☐ 25Vdc ☐ 16Vdc ☐ 10Vdc ☐ 6.3Vdc ☐ 4Vdc ☐ 2.5Vdc ☐ 100Vdc ☐ 50Vdc ☐ 35Vdc ☐ 250Vdc ☐ 630Vdc

Available Under development

Maximum operating temperature	LxW	Rated Voltage	Capacitance range
125℃	0.6×0.3	25Vdc	100pF - 3,300pF
		16Vdc	330pF - 3,300pF
		10Vdc	1,200pF - 0.1μF
		6.3Vdc	0.1μF - 0.22μF
		4Vdc	0.1μF - 2.2μF
		2.5Vdc	1μF - 2.2μF
	1.0×0.5	100Vdc	220pF - 4,700pF
		50Vdc	220pF - 0.1μF
		25Vdc	4,700pF - 1μF
		16Vdc	27,000pF - 1μF
		10Vdc	0.1μF - 1μF
		6.3Vdc	1μF - 4.7μF
		4Vdc	1μF - 10μF
		2.5Vdc	10μF
	1.6×0.8	100Vdc	1,000pF - 22,000pF
		50Vdc	1,000pF - 1μF
		35Vdc	1μF
		25Vdc	0.12μF - 1μF
		16Vdc	0.27μF - 4.7μF
		10Vdc	2.2μF - 10μF
		6.3Vdc	2.2μF - 10μF
		4Vdc	10μF - 22μF
		2.5Vdc	22μF
	2.0×1.25	250Vdc	1,000pF - 22,000pF
		100Vdc	10,000pF - 2.2μF
		50Vdc	0.22μF - 4.7μF
		35Vdc	0.68μF - 4.7μF
		25Vdc	0.27μF - 10μF
		16Vdc	1μF - 10μF
		10Vdc	2.2μF - 22μF
		6.3Vdc	10μF - 22μF
		4Vdc	22μF - 47μF
		2.5Vdc	47μF
	3.2×1.6	630Vdc	1,000pF - 22,000pF
		100Vdc	0.22μF - 2.2μF
		50Vdc	1.5μF - 10μF
		35Vdc	10μF
		25Vdc	4.7μF - 22μF
		16Vdc	4.7μF - 22μF
		10Vdc	22μF
		6.3Vdc	22μF
		4Vdc	47μF - 100μF



Maximum operating temperature	LxW	Rated Voltage	Capacitance	Capacitance range
			pF: 0.1 1 10 100 1000 / μF: 0.01 0.1 1 10 100 1000	
		2.5Vdc		100μF
	3.2×2.5	630Vdc		6,800pF - 47,000pF
		250Vdc		33,000pF - 0.22μF
		100Vdc		4.7μF - 10μF
		50Vdc		4.7μF - 10μF
		35Vdc		10μF
		25Vdc		10μF - 22μF
		16Vdc		22μF
		10Vdc		22μF - 47μF
		6.3Vdc		47μF
		4Vdc		220μF
		2.5Vdc		100μF - 220μF
150℃	0.6×0.3	10Vdc		0.1μF
		6.3Vdc		0.22μF
		4Vdc		0.22μF - 1μF
		2.5Vdc		1μF
	1.0×0.5	50Vdc		220pF - 0.1μF
		25Vdc		5,600pF - 1μF
		16Vdc		15,000pF - 1μF
		4Vdc		4.7μF
		2.5Vdc		10μF
	1.6×0.8	100Vdc		1,000pF - 10,000pF
		50Vdc		1,000pF - 1μF
		25Vdc		68,000pF - 0.22μF
		16Vdc		0.12μF - 0.22μF
		10Vdc		4.7μF
		6.3Vdc		4.7μF
		2.5Vdc		22μF
	2.0×1.25	100Vdc		10,000pF - 47,000pF
		50Vdc		10,000pF - 4.7μF
		35Vdc		2.2μF - 4.7μF
		25Vdc		0.15μF - 4.7μF
		16Vdc		0.27μF - 10μF
	3.2×1.6	100Vdc		2.2μF
		50Vdc		0.22μF - 1μF
		35Vdc		10μF
		25Vdc		0.47μF - 1μF
		4Vdc		47μF
		2.5Vdc		100μF
	3.2×2.5	100Vdc		4.7μF
		50Vdc		10μF
		25Vdc		22μF
		10Vdc		10μF
		2.5Vdc		220μF

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