



MURATA MANUFACTURING CO., LTD.

No. HEMCG1-003

Attention:

Production Location Change of Murata GJM15 series
(Fukui Murata Mfg. Co., Ltd. -> Murata Electronics Singapore(Pte.)Ltd.)

Dear Valued Customer,

Murata would like to notify you of the change of our GJM15 series production location from Fukui Murata Mfg. Co.,Ltd. to Murata Electronics Singapore (Pte.) Ltd.

1. Applicable Product

GJM15 series / High Q type Monolithic Ceramic Capacitor

EIA Size	(EIA-J Size)	Dimension (LXW)	Murata Type
0402	(1005)	1.0mmX0.5mm	GJM15 Series

2. Location Change

We are going to transfer the production process from Fukui Murata Mfg.Co.,Ltd. To Murata Electronics Singapor(Pte.)Ltd.

Current	New
Fukui Murata Mfg. Co., Ltd.	Murata Electronics Singapore (Pte.) Ltd.

3. Background of Change

More than 90% of GJM15 series sales comes from overseas, and overseas business is expected to increase even more. Therefore, with the middle to long range point of view, Murata will cope with this situation by enhancing QCDS using overseas production points.

Along this movement, we will move High-Q GJM15 series to our Singapore factory.

And we will secure stable supply in time of emergencies by leaving High-Q GJM02/GJM03 series in Fukui Murata, distributing manufacturing factories.

4. Transferring Schedule

Date of Last Time Buy from Current Factory : June 30, 2013

Date of Discontinue Production in Current Factory : September 30, 2013

5. Request

Please return this form with your signature

Please feel free to contact us, if you have any question or request on our proposal.

If there are no reply and inquiry from you by this date, we will proceed this change.

6. Others

As for new factory's products, they will be labeled as "MADE IN SINGAPORE".

Yours very truly

The notification for the acceptance

Date:

Company:

Signature:

Comment:

Planning & Market Promotion Department
 Monolithic Ceramic Capacitor Group
 Fukui Murata Mfg. Co., Ltd.

Test Sheet of Monolithic Ceramic Capacitor

GJM15(0402/1005) series [Temperature Compensating Type]

Typical Murata Global Part No	Size (Inch/mm)	Temp. Char.	Cap. Value	Cap. Tol.	Volt.
GJM1555C1HR10BB01 (MADE IN SINGAPORE)	0402/1005	C0G	0.1pF	+/-0.1pF	60V
GJM1555C1HR10BB01 (MADE IN JAPAN)	0402/1005	C0G	0.1pF	+/-0.1pF	60V

Data No.:QU-GJ-022
DATE: 2012.9.28

Murata Manufacturing Co., Ltd.

Operating Temperature Range / 使用温度範囲: -55 ~ +125°C

Tested Item/ 試験項目	Tested Condition/ 試験条件	Result/試験結果 (Rejection Number/Sample Number)										
1. Adhesive Strength of Termination / 固着性	Substrate/基板: Glass-epoxy Pressurizing Power / 加圧力: 5N Keeping Time / 保持時間: 10±1s Solder Type / はんだ種類: Sn-3.0Ag-0.5Cu Pressuring Speed/加圧速度: 0.5 mm/sec	0/10	0/10									
2. Vibration Resistance / 耐振性	Oscillation Frequency/振動周波数: 10Hz to 55Hz to 10Hz for 1min. Total Amplitude/全振幅: 1.5 mm Time/時間: A period of 2 hours in each of 3 mutually perpendicular directions. (Total 6 hours)	0/10	0/10									
3. Deflection / 耐基板曲げ性	Substrate/基板: Glass-epoxy (100mm X 40mm X 0.8mm) Deflection/たわみ量: 1mm Keeping Time/保持時間: 5±1s Pressure Jig/加圧治具: R230mm	0/10	0/10									
4. Solderability of Termination / はんだ付け性	Flux/フラックス: Ethanol solution of rosin 25(wt)% Solder/はんだ: Sn-3.0Ag-0.5Cu Solder Temperature/はんだ温度: 245±5°C Immersion Time/浸せき時間: 2s±0.5s Immersion Position/浸せき位置: Covering terminal electrode / 端子電極が隠れるところまで。 Preheat/試験前予熱: 80 to 120°C for 10-30 sec	0/10	0/10									
5. Resistance to soldering Heat / はんだ耐熱性	Solder/はんだ: Sn-3.0Ag-0.5Cu Solder Temperature/はんだ温度: 270±5°C Immersion Time/浸せき時間: 10s±0.5s Immersion Position/浸せき位置: Covering terminal electrode / 端子電極が隠れるところまで。 Preheating/試験前予熱: 120 to 150°C for 60 sec <table border="1" data-bbox="368 1397 815 1482"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>100 to 120°C</td> <td>1 min.</td> </tr> <tr> <td>2</td> <td>170 to 200°C</td> <td>1 min.</td> </tr> </tbody> </table>	Step	Temperature	Time	1	100 to 120°C	1 min.	2	170 to 200°C	1 min.	0/10	0/10
Step	Temperature	Time										
1	100 to 120°C	1 min.										
2	170 to 200°C	1 min.										
6. Temperature Cycle / 温度サイクル	1 Cycle condition/1サイクル条件 step 1: Min. Operating Temp.(+0°C, -3°C), 30min±3min step 2: Ordinary Temp., 2min to 3 min step 3: Max. Operating Temp.(+3°C, -0°C), 30min±3min step 4: Ordinary Temp., 2min to 3 min Cycle/回数: 5 cycles	0/10	0/10									
7. Humidity (Steady State) / 耐湿性	Temperature/温度: 40°C±2°C Humidity/湿度: 90%(RH) to 95%(RH) Time/時間: 500±12h	0/10	0/10									
8. Humidity Load / 耐湿負荷	Temperature/温度: 40°C±2°C Humidity/湿度: 90%(RH) to 95%(RH) Voltage/電圧: The Rated Voltage/定格電圧 Time/時間: 500±12h	0/10	0/10									
9. High Temperature Load / 高温負荷	Temperature/温度: Max. Operating Temp.±3°C Voltage/電圧: Apply 200% of the rated voltage / 定格電圧 x 200% Time/時間: 1000±12h	0/10	0/10									

Note: These test condition and specification are for the typical item.

Test Sheet of Monolithic Ceramic Capacitor

GJM15(0402/1005) series [Temperature Compensating Type]

Data No.: QU-GJ-020
DATE: 2012.9.26

Typical Murata Global Part No.	Size (Inch/mm)	Temp. Chara.	Cap. Value	Cap. Tol.	Volt.
GJM1555C1H200JB01 (MADE IN SINGAPORE)	0402/1005	C0G	20pF	+/-5%	60V
GJM1555C1H200JB01 (MADE IN JAPAN)	0402/1005	C0G	20pF	+/-5%	60V

Murata Manufacturing Co., Ltd.

Operating Temperature Range / 使用温度範囲: -55 ~ +125°C

Tested Item/ 試験項目	Tested Condition/ 試験条件	Result/試験結果 (Rejection Number/Sample Number)										
1. Adhesive Strength of Termination / 固着性	Substrate/基板: Glass-epoxy Pressurization Power / 加圧力: 5N Keeping Time / 保持時間: 10±1s Solder Type / はんだ種類: Sn-3.0Ag-0.5Cu Pressuring Speed/加圧速度: 0.5 mm/sec	0/10	0/10									
2. Vibration Resistance / 耐振性	Oscillation Frequency/振動周波数: 10Hz to 55Hz to 10Hz for 1min. Total Amplitude/全振幅: 1.5 mm Time/時間: A period of 2 hours in each of 3 mutually perpendicular directions. (Total 6 hours)	0/10	0/10									
3. Deflection / 耐基板曲げ性	Substrate/基板: Glass-epoxy (100mm × 40mm × 0.8mm) Deflection/たわみ量: 1mm Keeping Time/保持時間: 5±1s Pressure Jig/加圧治具: R230mm	0/10	0/10									
4. Solderability of Termination / はんだ付け性	Flux/フラックス: Ethanol solution of rosin 25(wt)% Solder/はんだ: Sn-3.0Ag-0.5Cu Solder Temperature/はんだ温度: 245±5°C Immersion Time/浸せき時間: 2s±0.5s Immersion Position/浸せき位置: Covering terminal electrode / 端子電極が隠れるところまで。 Preheat/試験前予熱: 80 to 120°C for 10-30 sec	0/10	0/10									
5. Resistance to soldering Heat / はんだ耐熱性	Solder/はんだ: Sn-3.0Ag-0.5Cu Solder Temperature/はんだ温度: 270±5°C Immersion Time/浸せき時間: 10s±0.5s Immersion Position/浸せき位置: Covering terminal electrode / 端子電極が隠れるところまで。 Preheating/試験前予熱: 120 to 150°C for 60 sec <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>100 to 120°C</td> <td>1 min.</td> </tr> <tr> <td>2</td> <td>170 to 200°C</td> <td>1 min.</td> </tr> </tbody> </table>	Step	Temperature	Time	1	100 to 120°C	1 min.	2	170 to 200°C	1 min.	0/10	0/10
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7. Humidity (Steady State) / 耐湿性	Temperature/温度: 40°C±2°C Humidity/湿度: 90%(RH) to 95%(RH) Time/時間: 500±12h	0/10	0/10									
8. Humidity Load / 耐湿負荷	Temperature/温度: 40°C±2°C Humidity/湿度: 90%(RH) to 95%(RH) Voltage/電圧: The Rated Voltage/定格電圧 Time/時間: 500±12h	0/10	0/10									
9. High Temperature Load / 高温負荷	Temperature/温度: Max. Operating Temp. ±3°C Voltage/電圧: Apply 200% of the rated voltage / 定格電圧 x 200% Time/時間: 1000±12h	0/10	0/10									

Note: These test condition and specification are for the typical item.

Test Sheet of Monolithic Ceramic Capacitor



GJM15(0402/1005) series [Temperature Compensating Type]

Typical Murata Global Part No	Size (Inch/mm)	Temp. Chara.	Cap. Value	Cap. Tol.	Volt.
GJM1555C1H100JB01 (MADE IN SINGAPORE)	0402/1005	C0G	10pF	+/-5%	60V
GJM1555C1H100JB01 (MADE IN JAPAN)	0402/1005	C0G	10pF	+/-5%	60V

Data No.:QU-GJ-021
DATE: 2012.9.28

Murata Manufacturing Co., Ltd.

Operating Temperature Range / 使用温度範囲: -55 ~ +125°C

Tested Item/ 試験項目	Tested Condition/ 試験条件	Result/試験結果 (Rejection Number/Sample Number)										
1. Adhesive Strength of Termination / 固着性	Substrate/基板: Glass-epoxy Pressurization Power / 加圧力: 5N Keeping Time / 保持時間: 10±1s Solder Type / はんだ種類: Sn-3.0Ag-0.5Cu Pressuring Speed/加圧速度: 0.5 mm/sec	0/10	0/10									
2. Vibration Resistance / 耐振性	Oscillation Frequency/振動周波数: 10Hz to 55Hz to 10Hz for 1min. Total Amplitude/全振幅: 1.5 mm Time/時間: A period of 2 hours in each of 3 mutually perpendicular directions. (Total 6 hours)	0/10	0/10									
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Note: These test condition and specification are for the typical item.



CONTROL PLAN

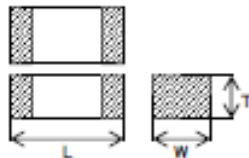
Phase	[]Prototype []Pre-launch [X]Production	Supplier/Plant	Fukui Murata Okayama Murata Murata Singapore	Izumo Murata(Iwami Murata), Wuxi Murata,	Date(Orig.)	19, May., 2005
Part No.	15 series(GRM,GJ*)				Date(Rev.)	5, Sep., 2012
Product Name	Chip type Monolithic Ceramic Capacitor	Core Team	Process Eng., Product Eng., Quality Control, Mechanical Eng., Production		Doc. #	LEMC6604-223J

Special char. : Use symbol [*] for special characteristics, and write the symbol that customer specified as a special characteristics.

PROCESS FLOW	No.	PROCESS NAME	MACHINES,JIGS,TOOLS METERS, FIXTURES		CONTROL PARAMETERS		Special Char.	CONTROL RANGE SPEC./TOLE.	SAMPLING PLAN SAMPLE SIZE LEVEL/FREQ.	CONTROL METHOD RECORD ERROR-PROOFING	PERSON IN CHARGE	REACTION PLAN /CORRECTIVE ACTION	RELATED STANDARDS
			Mfg.	TEST,INSP.	PROCESS	PRODUCT							
	1	INCOMING INSPECTION (Ceramic material)						Material Incoming Insp. std.	Every raw material lot	Outgoing inspection data from vendor Inspection report	Inspector	Process abnormal disposal std.	Material Incoming Insp. std.
	2	MIXING	Mixing machine	Balance	Amount of mixture Time Rotation speed	Flow out amount		Material mixing std.	Every mixing lot	Work order sheet	Operator	Process abnormal disposal std.	Material mixing std.
	3	DE-AIRING	De-airing machine	Viscometer	Vacuum degree	Viscosity		De-airing std.	Every mixing lot	Record sheet	Operator	Process abnormal disposal std.	De-airing std.
	4	CASTING	Casting machine	T-measurement equipment	Temp., Humidity	Sheet thickness		Sheet casting std.	Every 30 min. 1 / shift	Work order sheet	Operator	Process abnormal disposal std.	Sheet casting std.
	5	INCOMING INSPECTION (Electrode paste)		Gravimeter Viscometer		Specific gravity Viscosity Paste characteristics		Inner electrode Incoming Insp. std.	Every material lot	Inspection data	Inspector	Process abnormal disposal std.	Inner electrode Incoming Insp. std.
	6	PRINTING AND STACKING	Printing & stacking machine Dryer	X-ray thickness meter Projector Length-measuring machine	Drying temp. Number of stacking	Electrode thickness Printing condition		Inner electrode printing and stacking std.	1 sheet / lot Every lot 1 / shift 1 / shift or screen	Graph Graph Check sheet Work order sheet	Operator	Process abnormal disposal std.	Inner electrode printing and stacking std.
	7	PRESSING	Pressing machine	Thermometer	Pressure Water temp.			Pressing std.	1 / day 1 / day	Graph or Check sheet Graph or Check sheet	Operator	Process abnormal disposal std.	Pressing std.
	8	CUTTING	Cutting machine	Surface thermometer	Pre-heating temp.	Cutting condition		Cutting std.	Every block 1 / day	Electronic media Graph	Operator	Process abnormal disposal std.	Cutting std.
	9	RAW UNIT GRINDING	Grinding machine		Rotation time Rotation speed			Unit grinding std.	Every lot Every lot	Work order sheet Work order sheet	Operator	Process abnormal disposal std.	Unit grinding std.
	10	FIRING	Kiln	Auto temp. recorder	Temp. curve, Time Gas flow amount			Firing std.	Full time or 1 / 2hrs Full time or 1 / 2hrs	Sequencer Temp. record sheet	Operator	Process abnormal disposal std.	Firing std.
	11	GRINDING	Grinding machine		Rotation time Rotation speed			Unit grinding std.	Every lot Every lot	Work order sheet Work order sheet	Operator	Process abnormal disposal std.	Unit grinding std.
	12	INCOMING INSPECTION (Termination paste)		Gravimeter Viscometer		Specific gravity Viscosity Appearance Paste characteristics		Termination paste Incoming Insp. std.	Every material lot	Inspection report	Inspector	Process abnormal disposal std.	Termination paste Incoming Insp. std.

	Murata Global Part No	Size (Inch/mm)	Temp. Chara.	Cap.Value	Cap.Tol.	VoIt.	Durability (%Rated Volt.)
Item 1	GJM1555C1HR10BB01 (MADE IN SINGAPORE)	0402/1005	C0G	0.1pF	+/-0.1pF	50V	200%
Item 2	GJM1555C1HR10BB01 (MADE IN JAPAN)	0402/1005	C0G	0.1pF	+/-0.1pF	50V	200%

1. Dimension



	L	W	T
Item 1	1.0±0.05	0.5±0.05	0.5±0.05
Item 2	1.0±0.05	0.5±0.05	0.5±0.05

(mm)

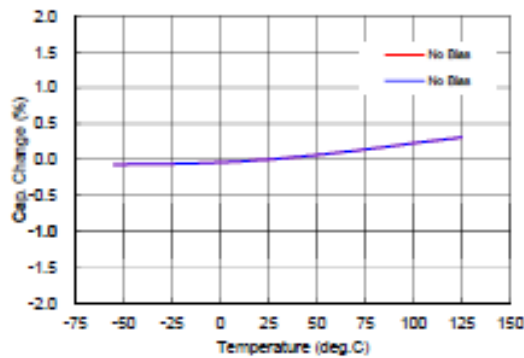
2. Cap,DF,IR

Capacitance,DF 1MHz, 1Vrms

IR	Spec	Cap. [pF]	Q	IR[M ohm]
Item 1		0 to 0.2	402	10000
Item 2		0 to 0.2	402	10000

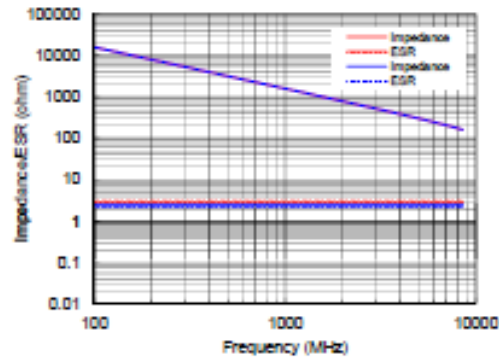
3. Capacitance - Temperature Characteristics

1MHz, 1Vrms Equipment: HP4284A



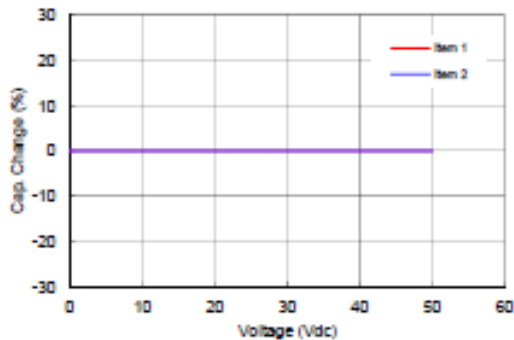
4. Impedance/ESR - Frequency

Equipment: E5071C(PC-SMA-SR/YOKOWO)



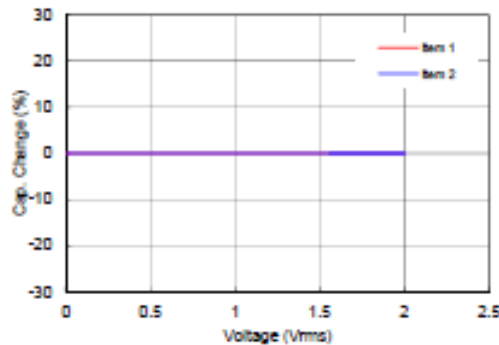
5. Capacitance - DC Voltage Characteristics

1MHz, 1Vrms Equipment: HP4284A



6. Capacitance - AC Voltage Characteristics

1MHz Equipment: HP4284A

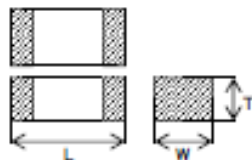


Regarding detailed specifications, please check catalog or product specification. Information in this PDF are as of Sep.2012. They are subject to change or our products in it may be discontinued without advance notice. Please check the latest information before usage of the products.

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	Murata Global Part No	Size (Inch/mm)	Temp. Chara.	Cap.Value	Cap.Tol.	Volt	Durability (%Rated Volt.)
Item 1	GJM1555C1H100JB01 (MADE IN SINGAPORE)	0402/1005	C0G	10pF	+/-5%	50V	200%
Item 2	GJM1555C1H100JB01 (MADE IN JAPAN)	0402/1005	C0G	10pF	+/-5%	50V	200%

1. Dimension



	L	W	T
Item 1	1.0±0.05	0.5±0.05	0.5±0.05
Item 2	1.0±0.05	0.5±0.05	0.5±0.05

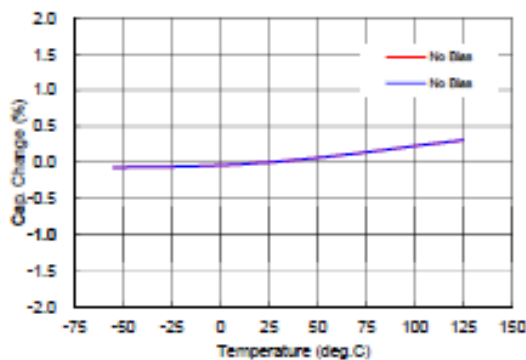
2. Cap,DF,IR

Capacitance,DF 1MHz, 1Vrms
 IR 50V, 120s

Spec	Cap.[pF]	Q	IR[M ohm]
Item 1	9.5 to 10.5	600	10000
Item 2	9.5 to 10.5	600	10000

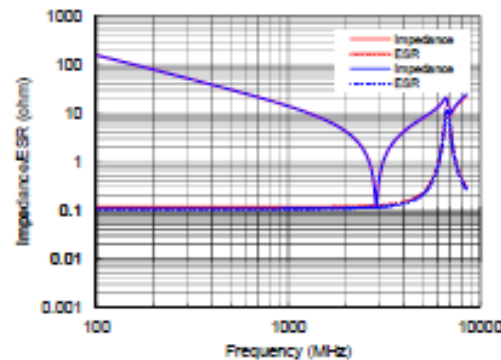
3. Capacitance - Temperature Characteristics

1MHz, 1Vrms Equipment: HP4284A



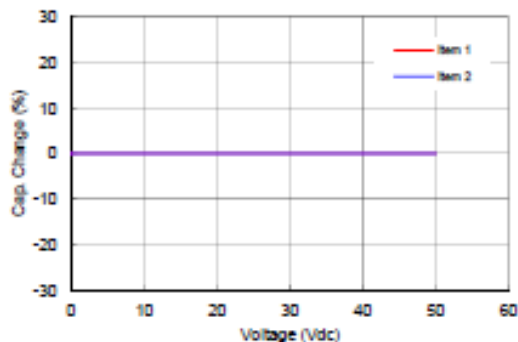
4. Impedance/ESR - Frequency

Equipment: E5071C(PC-SMA-SR/YOKOWO)



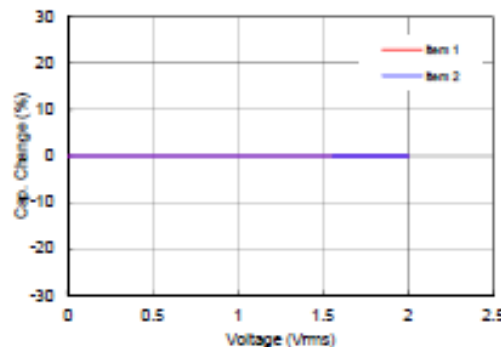
5. Capacitance - DC Voltage Characteristics

1MHz, 1Vrms Equipment: HP4284A



6. Capacitance - AC Voltage Characteristics

1MHz Equipment: HP4284A

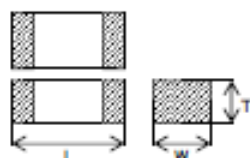


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	Murata Global Part No	Size (Inch/mm)	Temp. Chara.	Cap.Value	Cap.Tol.	Volt.	Durability (%Rated Volt.)
Item 1	GJM1555C1H200JB01 (MADE IN SINGAPORE)	0402/1005	C0G	20pF	+/-5%	50V	200%
Item 2	GJM1555C1H200JB01 (MADE IN JAPAN)	0402/1005	C0G	20pF	+/-5%	50V	200%

1. Dimension



	L	W	T
Item 1	1.0±0.05	0.5±0.05	0.5±0.05
Item 2	1.0±0.05	0.5±0.05	0.5±0.05

2. Cap,DF,IR

Capacitance,DF 1MHz, 1Vrms

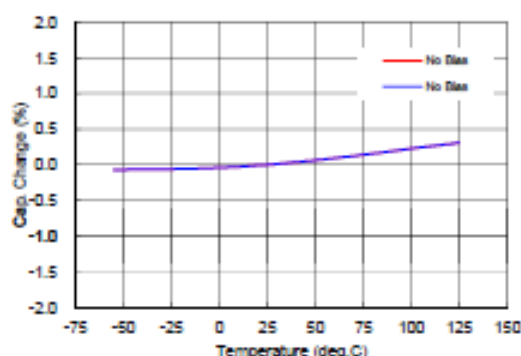
IR 50V, 120s

Spec	Cap. [pF]	Q	IR [M ohm]
Item 1	19 to 21	800	10000
Item 2	19 to 21	800	10000

3. Capacitance - Temperature Characteristics

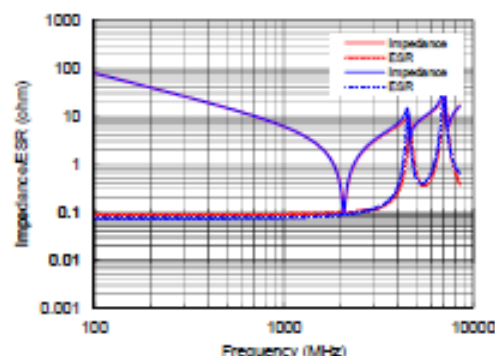
1MHz, 1Vrms

Equipment: HP4284A



4. Impedance/ESR - Frequency

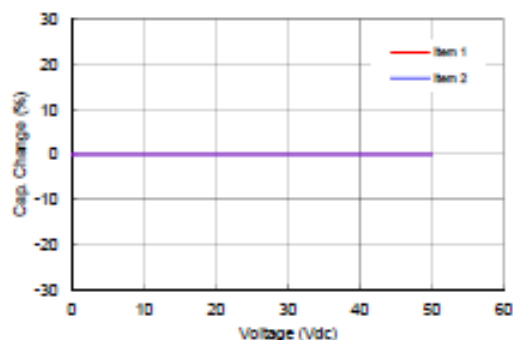
Equipment: E5071C(PC-SMA-SR/YOKOWO)



5. Capacitance - DC Voltage Characteristics

1MHz, 1Vrms

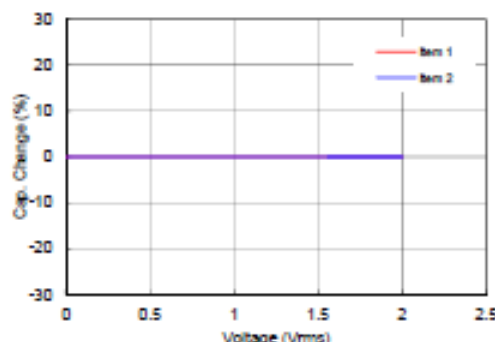
Equipment: HP4284A



6. Capacitance - AC Voltage Characteristics

1MHz

Equipment: HP4284A



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

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