产 品 规格书

Product Manual

2024年11月发布

Released in November 2024

SHENZHEN JIECHEN Electronic Co. Ltd

目录
Table of Contents

1. Capacitor characteristics and applications

1.1 Characteristics

- Serialized in size, suitable for surface-mounted elements in hybrid integrated circuits and printed circuits;
- High Q value, low ESR, high reliability;
- Low loss, high capacitance stability, working frequency up to 3GHz;
- Applicable for HF circuits, VHF-microwave circuits, RF circuits and amplifier circuits in various devices;

1.2 Main performance indices

- Temperature coefficient: C0G: 0±30ppm/℃;
- Capacitance drift: no more than ±0.2% or ±0.05pF, whichever is larger;
- Quality factor (Q value): over 2000 at 1MHz/1KHz;
- Insulation resistance: at 20 ° C: ≥10000MΩ
- Working temperature: -55～125℃

2. ProduSZJC model coding

2.1 SZJC specification description

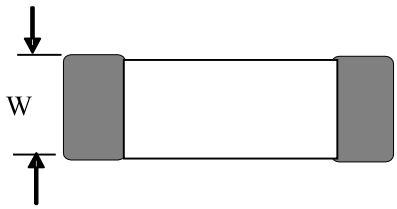
HQ- 0805 COG 101 J 251 N T

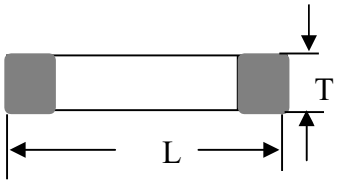
Product Appearance	Size	Dielectric	Nominal Capacitance (unit: pF)	Tolerance	Rated Voltage	Termination	Packaging
HQ: high-Q RF capacitor	0505 0603 0805 1111 2525 3838	0±30ppm/℃	The first two digits are significant, and the last digit is a power of 10.	A: ±0.05pF B: ±0.10pF C: ±0.25pF D: ±0.50pF F: ±1.0% G: ±2.0% J: ±5.0%	The first two digits are significant, and the last digit is a power of 10.	N: nickel barrier termination S: silver solderable termination	T: taping; B or no mark: bulk bagging

2.2 Correspondence between JC production line and ATC product line

SZJC Product Specification	ATC Product Specification
HQ-0603	ATC600S
HQ-0805	ATC600F
HQ-0505	ATC100A/ATC700A
HQ-1111	ATC100B
HQ-2525	ATC100C
HQ-3838	ATC100E

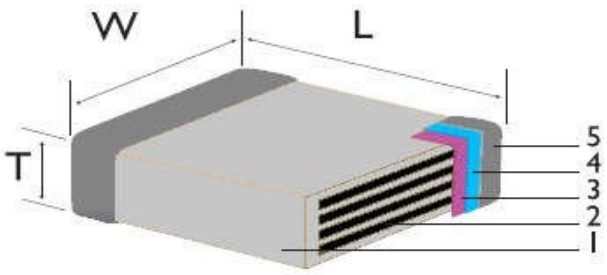
3. Product size





Model		Size (mm)		
Imperial	Metric	L	W	T_{max}
0603	1608	1.52±0.25	0.76±0.25	1.01
0805	2012	2.00±0.25	1.25±0.25	1.45
0505	1212	$1.40^{0.38}_{0.25}$	1.40±0.38	1.45
1111	2828	$2.79^{0.51}_{0.25}$	2.79±0.38	2.59
2525	6363	$5.84^{0.51}_{0.25}$	6.35±0.38	3.68
3838	9696	$9.65^{0.38}_{0.25}$	8.89±0.25	4.50

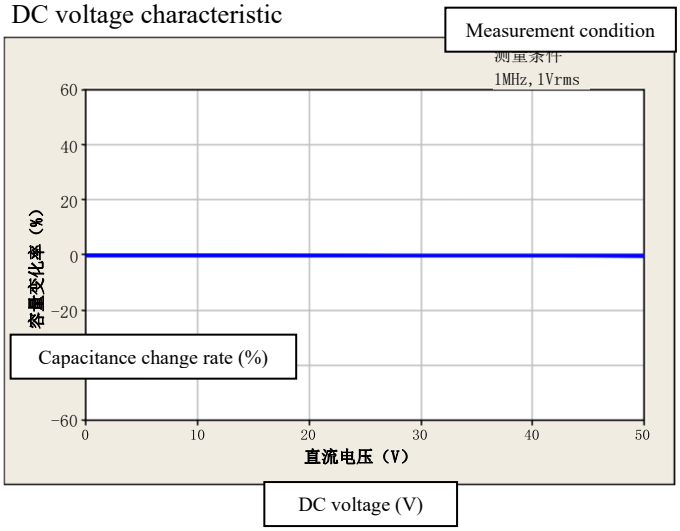
Note: products can be customized according to special requirements.



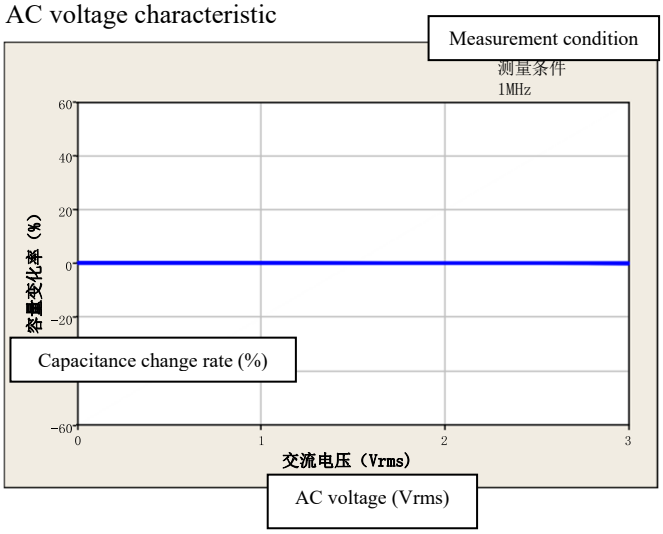
SN	Name
1	Ceramic dielectric
2	Inner electrode
3	Outer electrode
4	Nickel layer
5	Tin layer

4. Characteristic curve

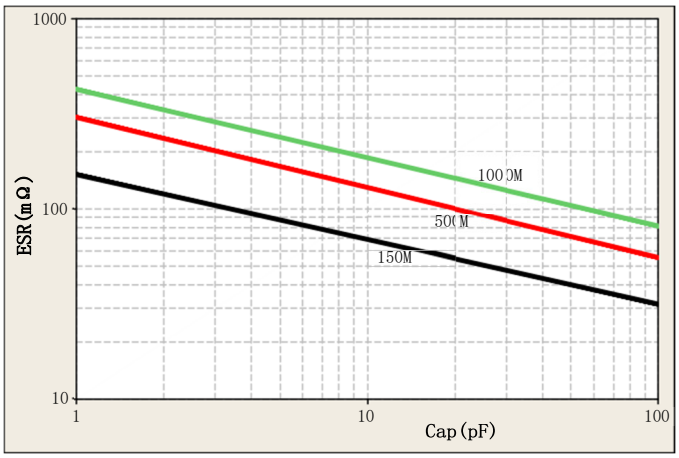
DC voltage characteristic



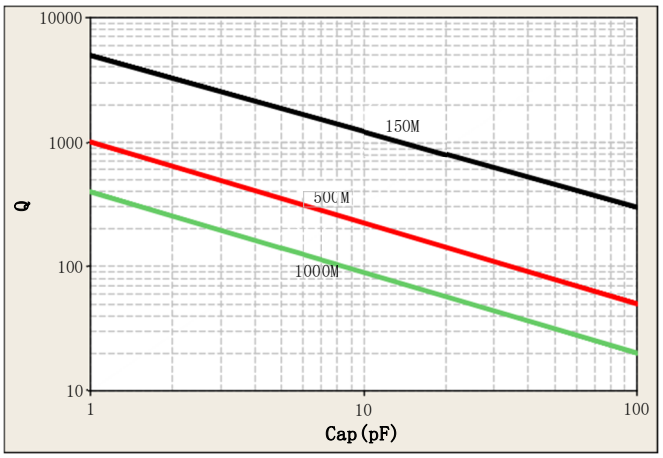
AC voltage characteristic



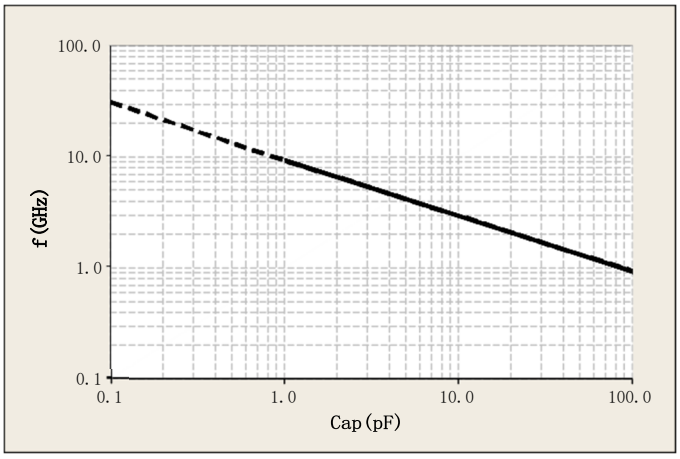
Relation between ESR and capacitance value



Relation between Q value and capacitance value



Relation between series resonance and capacitance



5. Capacitance range

5.1 HQ-0603 capacitance table

HQ-0603 Capacitance Table

Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0R1	0.1	B,C	250	1R7	1.7	B,C, D	250	6R2	6.2	B,C, D	250	300	30	F,G, J,K, M	250
0R2	0.2			1R8	1.8			6R8	6.8			330	33		150
0R3	0.3			1R9	1.9			7R5	7.5			360	36		
0R4	0.4			2R0	2			8R2	8.2			390	39		
0R5	0.5	B,C , D		2R1	2.1			9R1	9.1			430	43		
0R6	0.6			2R2	2.2			100	10	F,G, J,K, M		470	47		
0R7	0.7			2R4	2.4			110	11			510	51		
0R8	0.8			2R7	2.7			120	12			560	56		
0R9	0.9			3R0	3			130	13			620	62		
1R0	1			3R3	3.3			150	15			680	68		
1R1	1.1			3R6	3.6			160	16			750	75		
1R2	1.2			3R9	3.9			180	18			820	82		
1R3	1.3			4R3	4.3			200	20			910	91		100
1R4	1.4			4R7	4.7			220	22			101	100		
1R5	1.5			5R1	5.1			240	24			121	120		
1R6	1.6			5R6	5.6			270	27						

Note: You are welcome to contact us with any requirements on capacitance or accuracy.

5.2 HQ-0805 capacitance table

HQ-0805 Capacitance Table

Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0R2	0.2	B,C	250	1R9	1.9	B,C, D	250	9R1	9.1	F,G, J,K, M	250	510	51	F,G, J,K, M	250
0R3	0.3			2R0	2			100	10			560	56		
0R4	0.4			2R1	2.1			110	11			620	62		
0R5	0.5	B,C, D		2R2	2.2			120	12			680	68		
0R6	0.6			2R4	2.4			130	13			750	75		
0R7	0.7			2R7	2.7			150	15			820	82		
0R8	0.8			3R0	3			160	16			910	91		
0R9	0.9			3R3	3.3			180	18			101	100		
1R0	1			3R6	3.6			200	20			111	110		
1R1	1.1			3R9	3.9			220	22			121	120		
1R2	1.2			4R3	4.3			240	24			131	130		
1R3	1.3			4R7	4.7			270	27			151	150		
1R4	1.4			5R1	5.1			300	30			161	160		150
1R5	1.5			5R6	5.6			330	33			181	180		
1R6	1.6			6R2	6.2			360	36			201	200		
1R7	1.7			6R8	6.8			390	39			221	220		100
1R8	1.8			7R5	7.5			430	43			241	240		
				8R2	8.2			470	47						

Note: You are welcome to contact us with any requirements on capacitance or accuracy.

5.3 HQ-0505 capacitance table

HQ-0505 Capacitance Table

Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0R2	0.2	B,C	250	1R9	1.9	B,C, D	250	9R1	9.1	F,G, J,K, M	250	510	51	F,G, J,K, M	250
0R3	0.3			2R0	2			100	10			560	56		
0R4	0.4			2R1	2.1			110	11			620	62		
0R5	0.5	B,C, D		2R2	2.2			120	12			680	68		
0R6	0.6			2R4	2.4			130	13			750	75		
0R7	0.7			2R7	2.7			150	15			820	82		
0R8	0.8			3R0	3			160	16			910	91		
0R9	0.9			3R3	3.3			180	18			101	100		
1R0	1			3R6	3.6			200	20			111	110		
1R1	1.1			3R9	3.9			220	22			121	120		
1R2	1.2			4R3	4.3			240	24			131	130		
1R3	1.3			4R7	4.7			270	27			151	150		150
1R4	1.4			5R1	5.1			300	30			161	160		
1R5	1.5			5R6	5.6			330	33			181	180		
1R6	1.6			6R2	6.2			360	36						100
1R7	1.7			6R8	6.8			390	39			201	200		
1R8	1.8			7R5	7.5			430	43			221	220		
				8R2	8.2			470	47						

Note: You are welcome to contact us with any requirements on capacitance or accuracy.

5.4 HQ-1111 capacitance table

HQ-1111 Capacitance Table

Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0R2	0.2	B,C	1500	2R4	2.4	B,C, D	1500	200	20	F,G, J,K, M	1500	151	150	F,G ,J, K, M	500
0R3	0.3			2R7	2.7			220	22			161	160		
0R4	0.4			3R0	3			240	24			181	180		
0R5	0.5	B,C, D		3R3	3.3			270	27			201	200		
0R6	0.6			3R6	3.6			300	30			221	220		
0R7	0.7			3R9	3.9			330	33			241	240		
0R8	0.8			4R3	4.3			360	36			271	270		
0R9	0.9			4R7	4.7			390	39			301	300		
1R0	1			5R1	5.1			430	43			331	330		
1R1	1.1			5R6	5.6			470	47			361	360		250
1R2	1.2			6R2	6.2			510	51			391	390		
1R3	1.3			6R8	6.8			560	56			431	430		
1R4	1.4			7R5	7.5			620	62		1000	471	470		
1R5	1.5			8R2	8.2			680	68			511	510		
1R6	1.6			9R1	9.1			750	75			561	560		
1R7	1.7			100	10	F,G, J,K, M		820	82			621	620		150
1R8	1.8			110	11			910	91			681	680		
1R9	1.9			120	12			101	100		500	751	750		
2R0	2			130	13			111	110			821	820		
2R1	2.1			150	15			121	120			911	910		100
2R2	2.2			160	16			131	130			102	1000		
				180	18										

5.5 HQ-2525 capacitance table

HQ-2525 Capacitance Table

Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
1R0	1	B,C	3600	5R1	5.1	B,C, D	3600	360	36	F,G, J,K, M	3600	241	240	F,G ,J, K, M	2000
1R1	1.1			5R6	5.6			390	39			271	270		
1R2	1.2			6R2	6.2			430	43			301	300		
1R3	1.3			6R8	6.8			470	47			331	330		
1R4	1.4	B,C, D		7R5	7.5			510	51			361	360		
1R5	1.5			8R2	8.2			560	56			391	390		
1R6	1.6			9R1	9.1			620	62			431	430		1000
1R7	1.7			100	10	F,G, J,K, M		680	68			471	470		
1R8	1.8			110	11			750	75			511	510		
1R9	1.9			120	12			820	82			561	560		
2R0	2			130	13			910	91			621	620		
2R1	2.1			150	15			101	100			681	680		500
2R2	2.2			160	16			111	110			751	750		
2R4	2.4			180	18			121	120			821	820		
2R7	2.7			200	20			131	130		2000	911	910		
3R0	3			220	22			151	150			102	1000		
3R3	3.3			240	24			161	160			112	1100		
3R6	3.6			270	27			181	180			122	1200		
3R9	3.9			300	30			201	200			152	1500		
4R3	4.3			330	33			221	220			182	1800		
4R7	4.7														

Note: You are welcome to contact us with any requirements on capacitance or accuracy.

5.6 HQ-3838 capacitance table

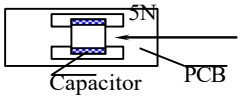
HQ-3838 Capacitance Table

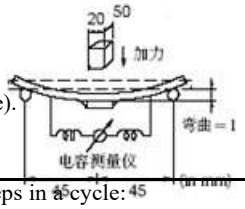
Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance Code	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
1R0	1	B,C	7200	8R2	8.2	B,C, D	7200	910	91	F,G, J,K, M	3600	112	1100	F,G ,J, K, M	1000
1R1	1.1			9R1	9.1			101	100			122	1200		
1R2	1.2			100	10	F,G, J,K, M		111	110			152	1500		
1R3	1.3			110	11			121	120			182	1800		500
1R4	1.4	B,C, D		120	12			131	130			202	2000		
1R5	1.5			130	13			151	150			222	2200		
1R6	1.6			150	15			161	160			242	2400		
1R7	1.7			160	16			181	180			272	2700		
1R8	1.8			180	18			201	200			302	3000		
1R9	1.9			200	20			221	220			332	3300		
2R0	2			220	22			241	240			362	3600	G,J, K, M	250
2R1	2.1			240	24			271	270			392	3900		
2R2	2.2			270	27			301	300			432	4300		
2R4	2.4			300	30			331	330			472	4700		
2R7	2.7			330	33			361	360			512	5100		
3R0	3			360	36			391	390			562	5600		
3R3	3.3			390	39			431	430	F,G, J,K, M	1500	622	6200		
3R6	3.6			430	43			471	470			682	6800		
3R9	3.9			470	47			511	510						
4R3	4.3			510	51			561	560						
4R7	4.7			560	56			621	620						
5R1	5.1			620	62			681	680						
5R6	5.6			680	68			751	750						
6R2	6.2			750	75			821	820						
6R8	6.8			820	82			911	910						
7R5	7.5							102	1000						

Note: You are welcome to contact us with any requirements on capacitance or accuracy.

6. Technical requirements and test conditions

<table>
<tr><th>Item</th><th>Technical Specification</th><th colspan="5">Test Method</th></tr>
<tr><td>Working Temperature Range</td><td>(-55 ~ +125)℃</td><td colspan="5"></td></tr>
<tr><td>Appearance</td><td>No obvious defect</td><td colspan="5">Visual Check</td></tr>
<tr><td rowspan="3">Static Capacitance</td><td rowspan="3">Within specified tolerance</td><td>Nominal Capacitance</td><td>Test Frequency</td><td>Test Voltage</td><td colspan="2">Ambient Temperature</td></tr>
<tr><td>≤1000pF</td><td>1MHz±10%</td><td rowspan="2">(1.0±0.2)Vrms</td><td colspan="2" rowspan="2">(25±2)℃</td></tr>
<tr><td>>1000pF</td><td>1KHz±10%</td></tr>
<tr><td>Quality Factor (Q Value)</td><td>Over 2000 at 1MHz/1KHz</td><td colspan="5">Test Method: same as that for Static Capacitance</td></tr>
<tr><td rowspan="3">Insulation Resistance (IR)</td><td rowspan="3">≥10000MΩ</td><td>Rated Voltage</td><td>Test Voltage</td><td>Test Duration</td><td>Test Current (Charging and Discharging)</td><td>Ambient Temperature</td></tr>
<tr><td>Ur<1000V</td><td>Ur</td><td>(60±5) sec</td><td>≤50mA</td><td rowspan="2">Temperature: (25±2)℃
Humidity: <75%</td></tr>
<tr><td>Ur≥1000V</td><td>1000V</td><td>(60±5) sec</td><td>≤50mA</td></tr>
<tr><td rowspan="4">Withstanding Voltage (DWV)</td><td rowspan="4">No dielectric breakdown or damage</td><td>Rated Voltage</td><td>Test Voltage</td><td>Test Duration</td><td colspan="2">Test Current (Charging and Discharging)</td></tr>
<tr><td>Ur＜200V</td><td>2.5Ur</td><td>(1~5) sec</td><td colspan="2" rowspan="3">≤50mA</td></tr>
<tr><td>200V≤Ur≤1000V</td><td>1.5Ur</td><td>(1~5) sec</td></tr>
<tr><td>Ur＞1000V</td><td>1.2Ur</td><td>(1~5) sec</td></tr>
<tr><td rowspan="6">Capacitance temperature Coefficient or Temperature Characteristic</td><td rowspan="6">C0G: 0±30ppm/℃</td><td colspan="5">Follow the steps below to make the measurement when the temperate stabilizes sufficiently after 30min. (△C will be subject to T3)</td></tr>
<tr><td>Step</td><td colspan="4">Temperature (℃)</td></tr>
<tr><td>T1</td><td colspan="4">20±2</td></tr>
<tr><td>T2</td><td colspan="4">Low-category temperature (-55±3)</td></tr>
<tr><td>T3</td><td colspan="4">20±2</td></tr>
<tr><td>T4</td><td colspan="4">Upper-category temperature (125±2)</td></tr>
<tr><td>Solderability</td><td>Appearance</td><td>No visible damage; solder coverage rate: ≥95%</td><td colspan="4">Dip the capacitor in the solution of ethanol and rosin (25% by weight), take it out, preheat it for 10～30sec at 80～120 ℃, and then dip it in the solder solution.</td></tr>
<tr><td colspan="3"></td><td colspan="4">Soldering temperature: (235±5)℃; soldering speed: (25±0.25)mm/sec</td></tr>
<tr><td colspan="3"></td><td colspan="4">Soldering duration: (2±0.5)sec</td></tr>
</table>

<table>
<tr><td rowspan="4">Resistance to Soldering Heat</td><td>Appearance</td><td>No visible damage; solder coverage rate: ≥95%</td><td rowspan="4">Dip the capacitor in the solution of ethanol and rosin (25% by weight), take it out, preheat it for 10±2min at 100～120 ℃, and then dip it in the solder solution.
Soldering temperature: 260±5℃; soldering speed: 25±0.25mm/s
Soldering duration: 5±1sec
Take it out, clean it with the solvent, and observe it under a microscope with 10-power magnification or above.
After the test, place it in then indoor environment for 24±2hrs (for recovery) and then make the measurement again.</td></tr>
<tr><td>△C/C</td><td>≤±0.5% or ±0.5pF, whichever is larger</td></tr>
<tr><td>D.F.</td><td>Same as initial value</td></tr>
<tr><td>I.R.</td><td>Same as initial value</td></tr>
<tr><td>Terminal Electrode Adhesion Strength</td><td colspan="2">No terminal eleSZJCrode peeling; no visible damage to appearance</td><td> 

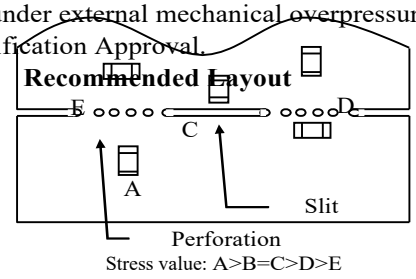
Applied thrust: 5N
Duration: 10±1sec
Speed: 1mm/sec</td></tr>
<tr><td rowspan="2">Resistance to Flexure of Substrate (Bending Strength)</td><td>Appearance</td><td>No visible damage</td><td rowspan="2">Test board: PCB
Warp: 1mm
Pressure speed: 1mm/sec
Make the measurement in bending state).
 
</td></tr>
<tr><td>△C/C</td><td>≤±5%</td></tr>
<tr><td rowspan="4">Temperature Cycle</td><td>Appearance</td><td>No visible damage</td><td rowspan="4">Cycling times: 5 times; 4 steps in a cycle:
<table><tr><th>Step</th><th>Temperature ℃</th><th>Duration (min.)</th></tr><tr><td>1</td><td>-55±3</td><td>30</td></tr><tr><td>2</td><td>20±2</td><td>3</td></tr><tr><td>3</td><td>-125±3</td><td>30</td></tr><tr><td>4</td><td>20±2</td><td>3</td></tr></table>
After the test, place it in the indoor environment for 24±2hrs (for recovery) and then make the measurement again.</td></tr>
<tr><td>△C/C</td><td>≤
≤±1% or ±0.5pF, whichever is larger</td></tr>
<tr><td>D.F.</td><td>Same as initial value</td></tr>
<tr><td>I.R.</td><td>Same as initial value</td></tr>
<tr><td rowspan="4">Steady-state Moisture Test</td><td>Appearance</td><td>No visible damage</td><td rowspan="4">Temperature: 40±2℃
Humidity: 90~95%RH
Duration: 500+24/-0hrs
Recovery condition: room temperature
Recovery duration: 24hrs</td></tr>
<tr><td>△C/C</td><td>≤±2% or ±1pF, whichever is larger</td></tr>
<tr><td>D.F.</td><td>≤2 times of initial value</td></tr>
<tr><td>I.R.</td><td>Ri≥2500MΩ or Ri*C_R>25S, whichever is smaller</td></tr>
<tr><td rowspan="4">Service Life Test</td><td>Appearance</td><td>No visible damage</td><td rowspan="4"><table><tr><th>Rated Voltage</th><th>Applied Voltage</th></tr><tr><td>Ur<500V</td><td>2Ur</td></tr><tr><td>500V≤Ur≤1000V</td><td>1.5Ur</td></tr><tr><td>Ur＞1000V</td><td>1.2Ur</td></tr></table>
Test current (charging and discharging): ≤50mA
Temperature: (125±3)℃
Duration: 96±4hrs
Recovery condition: room temperature
Recovery time: 24hrs</td></tr>
<tr><td>△C/C</td><td>≤±2% or ±1pF, whichever is larger</td></tr>
<tr><td>D.F.</td><td>≤2 times of initial value</td></tr>
<tr><td>I.R.</td><td>Ri≥4000MΩ or Ri*C_R>40S, whichever is smaller</td></tr>
<tr><td colspan="4">Note: for DWV test, immerse the capacitor in the dielectric oil when the test voltage exceeds 1000Vdc, so as to avoid the influence of the external environment.</td></tr>
</table>

7. Precautions for use

7.1 Precautions before use

Give priority to the application according to the relevant instructions of the Specification for Approval because RF-HQ-MLCC chip is likely damaged in the adverse working environment or under external mechanical overpressure beyond the conditions specified in the relevant instructions of the Specification Approval.

7.2 PCB design



7. 2. 1 Give careful consideration to the size and configuration of the pad in PCB design, which are decisive to the amount of the solder that makes up the substrate, because the amount of the solder used influences the RF-HQ-MLCC chip's ability to resist mechanical stress, likely causing chip breaking or cracking.

7. 2. 2 Mount the MLCC on the least affected position on the PCB to minimize the stress in the design of the positions of the pad and SMD RF-HQ-MLCC.

7.3 Considerations related to automatic mounting

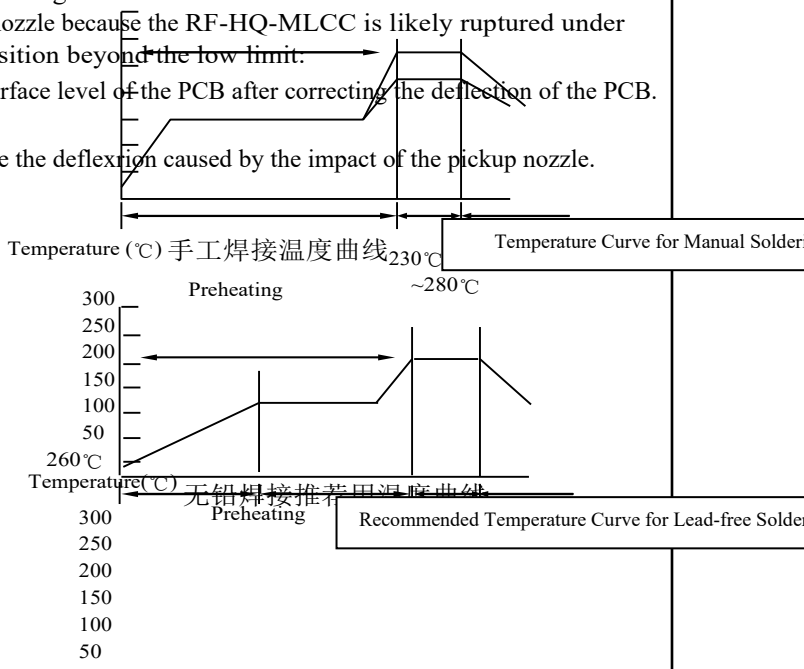
Pay attention to the followings when lowering the pickup nozzle because the RF-HQ-MLCC is likely ruptured under overpressure if the pickup nozzle is lowered to the position beyond the low limit.

7. 3. 1 Adjust the low limit of the pickup nozzle to the surface level of the PCB after correcting the deflection of the PCB.

7. 3. 2 Adjust the pickup pressure to 1N to 3N.

7. 3. 3 Place the supporting pins under the PCB to reduce the deflexrion caused by the impact of the pickup nozzle.

7.4 Soldering



7. 4. 1 Preferably preheat RF-HQ-MLCC continuously for more than 1 minute before soldering because RF-HQ-MLCC, a combination of ceramic and metal, is easily cracked as a ceramic, especially a large-sized one, in a sudden temperature change, which is characterized by poor thermoplasticity and slow response to heat.

7. 4. 2 Preferably preheat RF-HQ-MLCC continuously for more than 1 minute before soldering because RF-HQ-MLCC, with a metallic eleSZJCrode inside, has good thermoplasticity and quick response to heat, leading to expansion difference to some extent between its metallic part and ceramic part under heating, thus bringing inner stress and likely causing ceramic cracking.

7. 4. 3 In manual soldering, ensure the max. diameter of the tip of the temperature-controlled soldering iron is 1.0mm, the max. power is 25W, and the soldering iron never touches the MLCC element.

7. 4. 4 Preferably not use wave soldering for the HQ-1111 products and above.

Over 1 minute | Over 1 minute | Within 10 s | Gradual cooling | Over 1 minute

7.5 Cleaning

7. 5. 1 Keep temperature difference in cleaning no greater than 100℃.

7. 5. 2 Pay special attention to the followings in ultrasonic cleaning because too large output power puts PCB under excessive vibration, causing MLCC or soldering point cracking or terminal electrode strength reduction. Ultrasonic output: less than 20W/L; ultrasonic frequency: less than 40KHz; ultrasonic cleaning duration: 5 minutes or less.

7.6 PCB cutting

7. 6. 1 In PCB cutting after MLCC and other elements are mounted, do not apply any force on the board to avoid excessive mechanical shock to RF-HQ-MLCC.

7. 6. 2 Cut the board with an appropriate tool but not by hand.

7.7 Storage

Recommended storage conditions for a good solderability of terminal electrode and a good condition of packaging materials:

Temperature: 5-40℃; relative humidity: 20-70%RH

Please put RF-HQ-MLCC in use within 6 month from the delivery date because its terminal solderability decreases over time even if in SZJCl storage conditions.

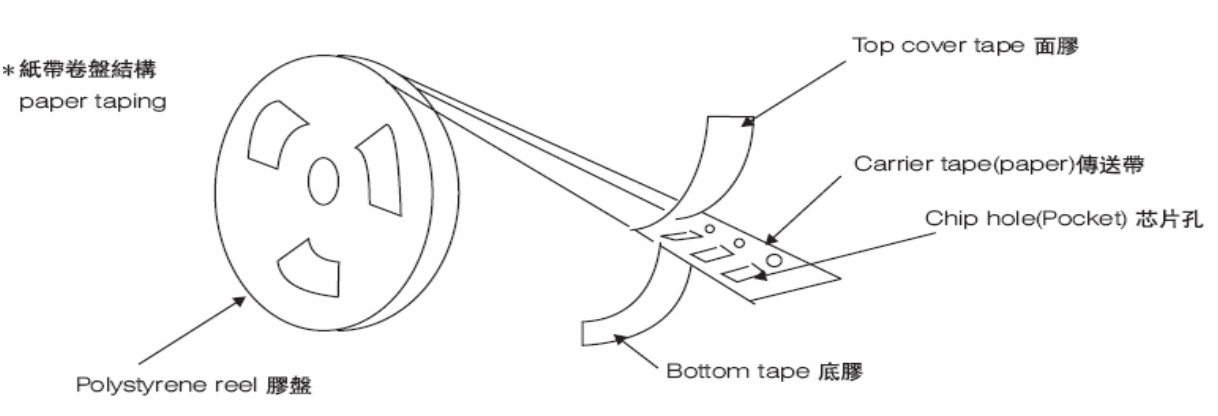
8. Product packaging

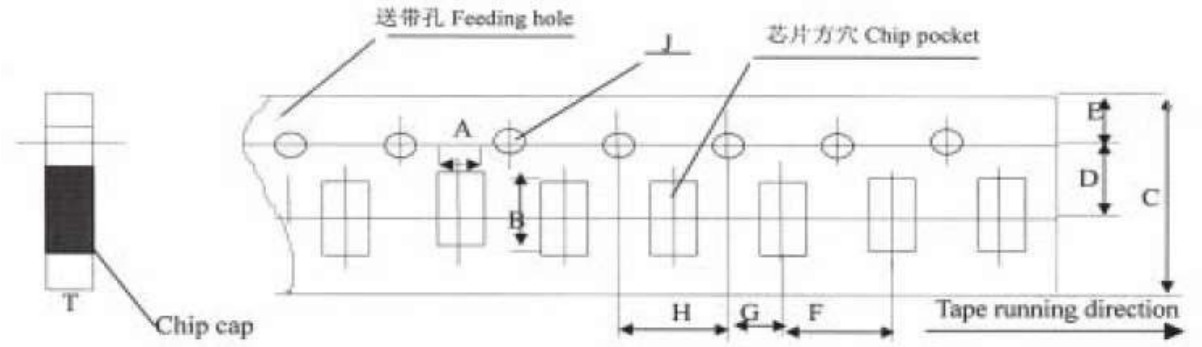
8.1 Bulk bagging

Specification	Quantity	Remark
0603	5000	Packaging and quantity can also be subject to customers' requirements.
0805	5000	
0505	5000	
1111	2000	
2525	100	
3838	50	

8.2 Taping

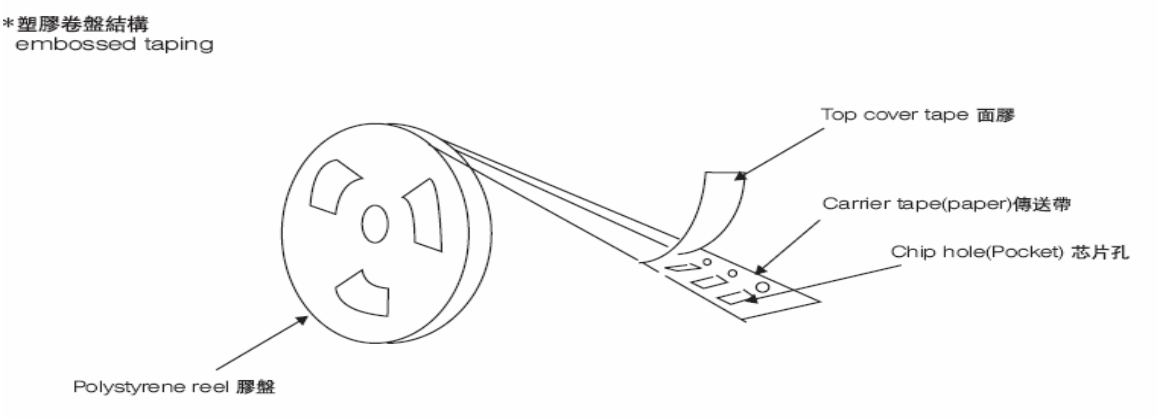
8.2.1 Paper taping

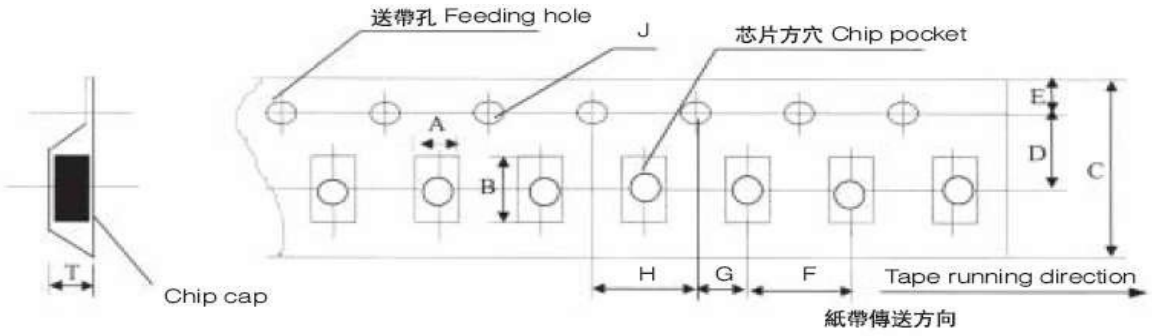




8.3 Embossed taping

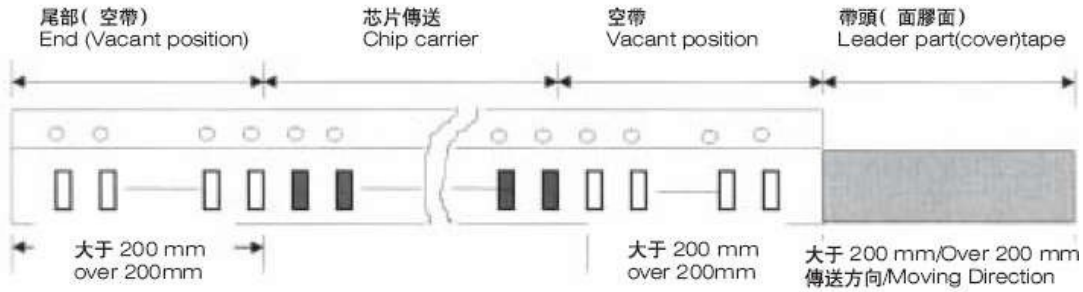
8.3.1 Embossed taping





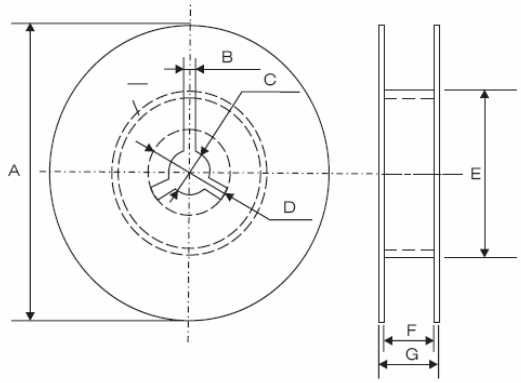
8.4 Structure of leader part and end part of carrier paper

*傳送帶的前后結構
Structure of leader part and end part of the carrier paper



8.5 Reel dimensions

*卷盘尺寸 Reel Dimensions (unit:mm)



A	B	C	D	E	F	G
Φ178.00±2.00	3.00	Φ13.00±0.50	Φ21.00±0.80	Φ 9.00 or larger	10.00±1.50	12Max
Φ330.00±2.00	3.00	Φ13.00±0.50	Φ21.00±0.80	Φ 9.00 or larger	10.00±1.50	12Max

8.6 Taping method

8.6.1 The tape for capacity packaging is reeled in clockwise. When it is pulled out downwards, the feeding hole is on the right side of the tape.

8.6.2 Leave at least a 5-pitch leader at the front end of the tape.

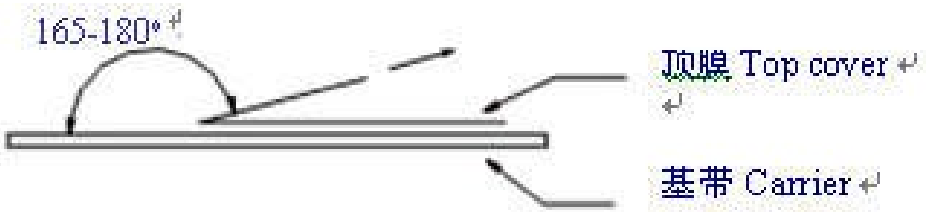
8.6.3 Leave leader and vacant tape as shown below when taping.

8.6.4 The number of misplaced products in taping must be less than 0.1% of the indicated quantity or 1 for each reel and no continuous error occurring is allowed.

8.6.5 Top cover tape and bottom tape must not be beyond the tape edge nor block the feeding hole.

8.6.6 The cumulative tolerance to the feeding hole should be within 10 pitches, i.e., ±0.3mm.

8.6.7 The peeling torque of the top cover tape should be within 0.1N to 0.7N, with the direction shown below.



9. About RoHS

All the products are RoHS compliant:

- Lead (pb) (＜1000ppm)
- Mercury (Hg) (＜1000ppm)
- Cadmium (cd) (＜100ppm)
- Hexavalent Chromium Content (Cr6+) (＜1000ppm)
- Polybrominated Biphenyls (PBBs) (＜1000ppm)
- Polybrominated diphenyl ethers (PBDE) (＜1000ppm)

Mark the product label with “RoHS” or “GP” if necessary.