

# SPECIFICATION

MLV : 50

CUSTOMER: <u>MARITEX</u>
JOYIN ITEM : <u>0603 All Series</u>
ISSUE DATE : <u>Apr-21-2006</u>

## JOYIN ENGINEERING SIGNATURE

DRAWN BY	CHECKED BY	APPROVED BY
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## CUSTOMER RESPONSE

Approval

Approval with the following change

Reject with the following reasons

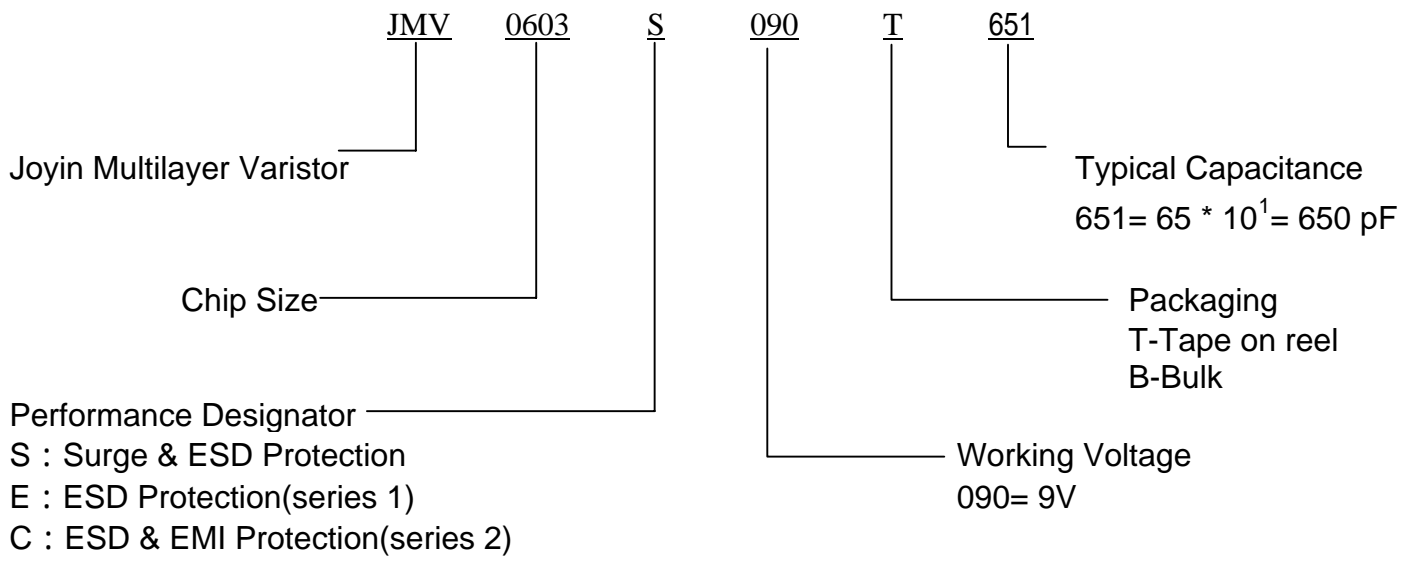
CUSTOMER SIGNATURE

TITLE

DATE

Please return this form to JOYIN representative

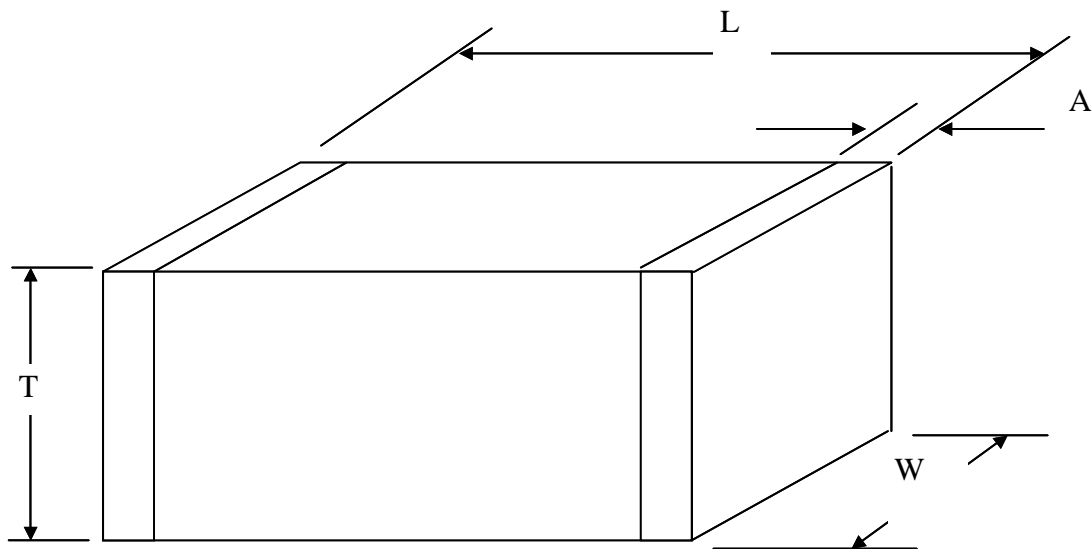
# Part Numbering



# External Dimension

Chip Dimension

Chip Size	L	W	MLV : 50	inch(mm)
	Tolerance	Tolerance	max	min - max
0402 (1005)	0.039±0.004 (1.0±0.1)	0.02±0.004 (0.5±0.1)	0.024 (0.6)	0.004-0.016 (0.1-0.4)
0603 (1608)	0.063±0.006 (1.6±0.15)	0.031±0.006 (0.8±0.15)	0.035 (0.9)	0.008-0.02 (0.2-0.5)
0805 (2012)	0.079±0.008 (2.0±0.2)	0.049±0.008 (1.25±0.2)	0.04 (1.02)	0.008-0.028 (0.2-0.71)
1206 (3216)	0.126±0.008 (3.2±0.2)	0.063±0.008 (1.6±0.2)	0.071 (1.8)	0.008-0.031 (0.2-0.8)
1210 (3225)	0.126±0.008 (3.2±0.2)	0.098±0.008 (2.5±0.2)	0.071 (1.8)	0.008-0.031 (0.2-0.8)



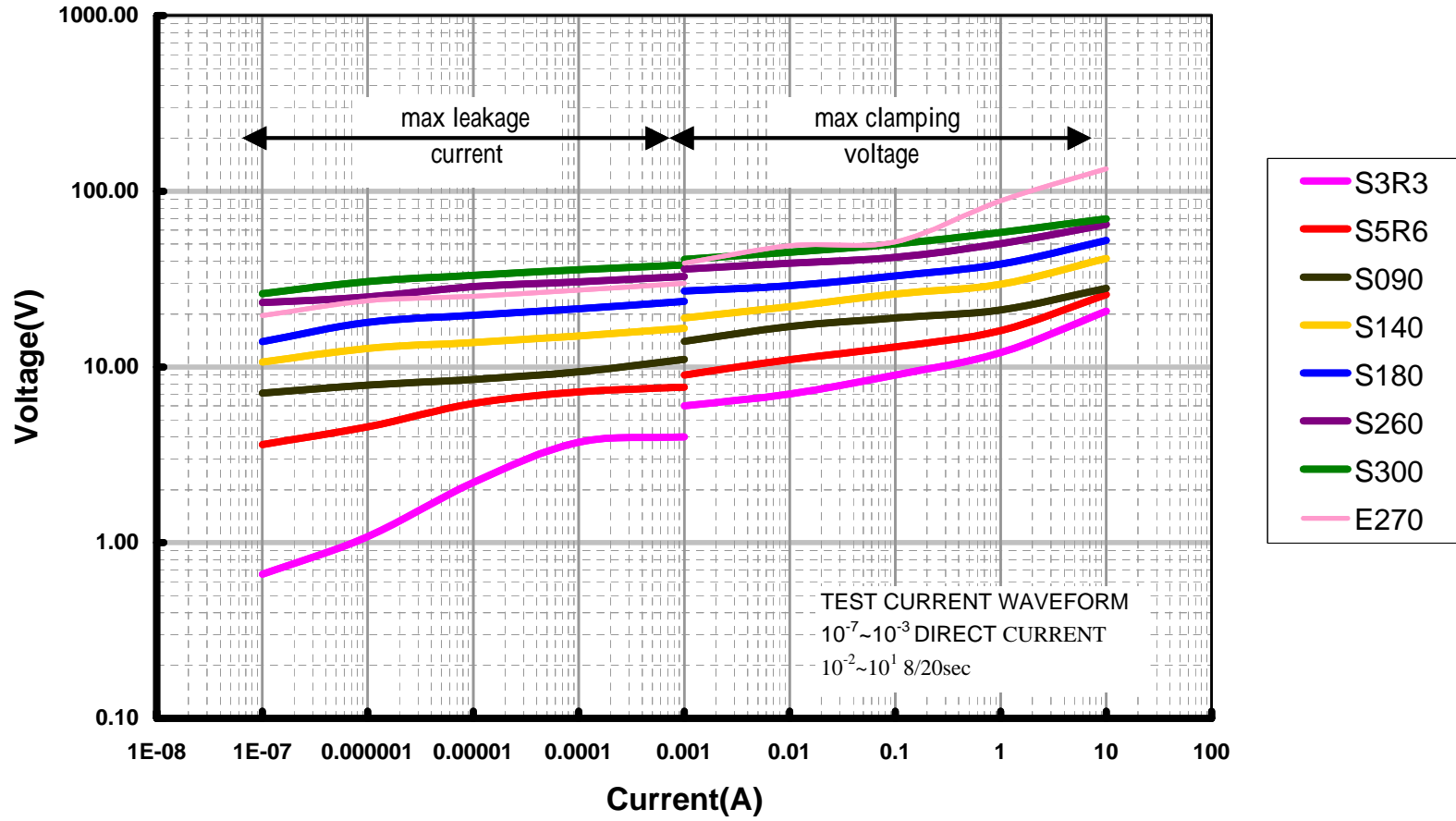
# ELECTRICAL CHARACTERISTICS

Part Number	Working Voltage (Vw)	Breakdown Voltage (Vb)	Clamping Voltage (Vc)	Peak Current (Ip)	Transient Energy (Et)	Typical Capacitance (C)	
	Volt	Volt	Volt	Amp	Joule	pF	
	<50 $\mu$ A	1mA(DC)	1A,8/20 $\mu$ s	8/20 $\mu$ s	10/1000 $\mu$ s	MLV : 50	1MHz
JMV0603S3R3T182	3.3	4.1~6.0	12.0	30	0.1	1800	1550
JMV0603S3R3T401	3.3	4.1~6.0	12.0	30	0.1	400	360
JMV0603S5R6T102	5.6	7.6~9.3	18.0	30	0.1	1000	825
JMV0603S5R6T351	5.6	7.6~9.3	18.0	30	0.1	350	300
JMV0603S090T651	9.0	11.0~14.0	22.0	30	0.1	650	540
JMV0603S090T331	9.0	11.0~14.0	22.0	30	0.1	330	290
JMV0603S140T451	14.0	16.5~20.3	32.0	30	0.1	450	340
JMV0603S140T181	14.0	16.5~20.3	32.0	30	0.1	180	150
JMV0603S180T281	18.0	22.9~28.0	42.0	30	0.1	280	210
JMV0603S180T111	18.0	22.9~28.0	42.0	30	0.1	110	85
JMV0603S260T151	26.0	31.0~38.0	60.0	30	0.1	150	125
JMV0603S260T800	26.0	31.0~38.0	60.0	30	0.1	80	70
JMV0603S300T101	30.0	37.0~46.0	67.0	30	0.1	100	85
JMV0603E270T150	17.0	21.6~32.4	52.0	2max.	0.05 max.	-	15

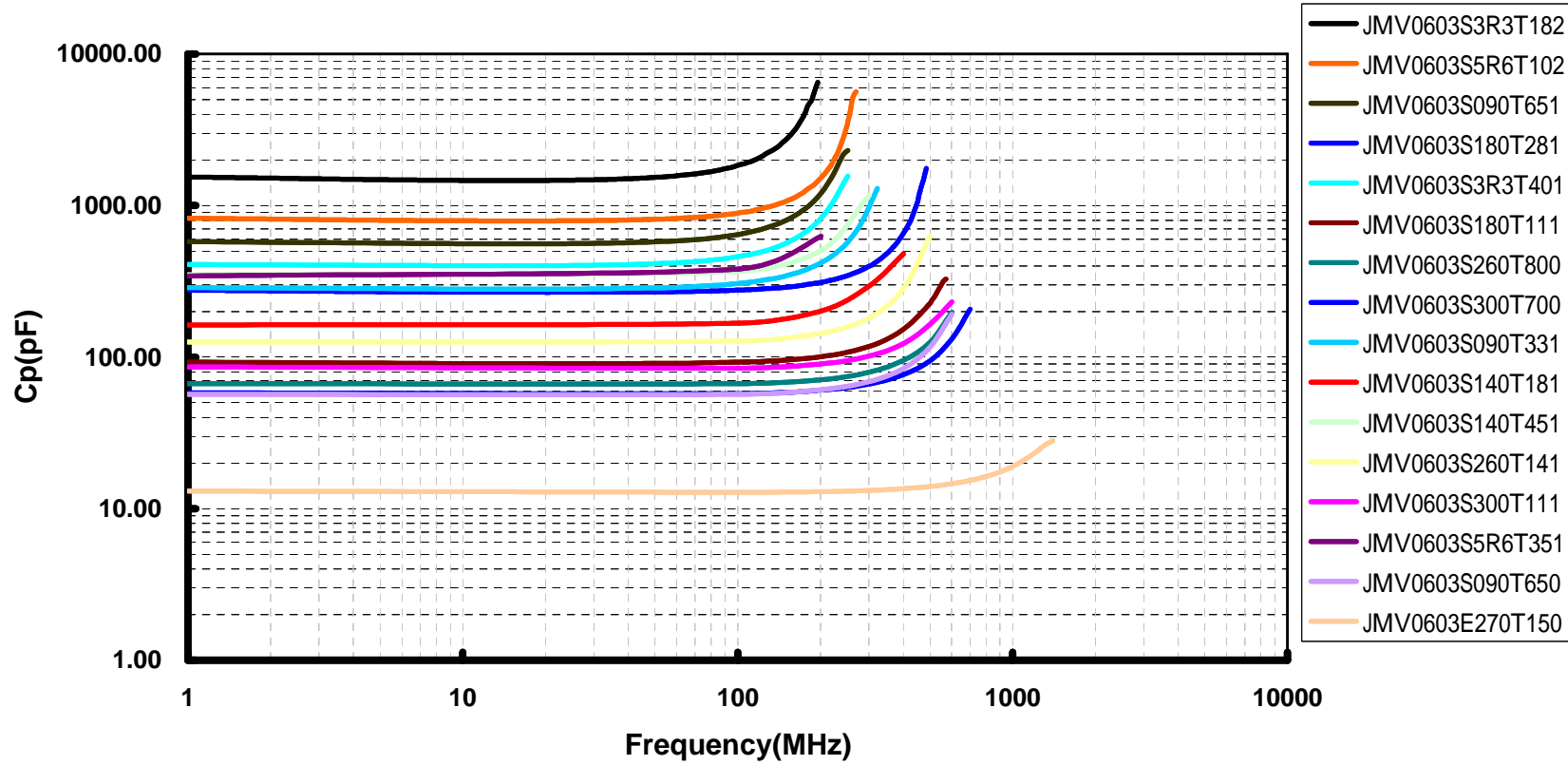
Inductor/MLV Storage condition Temperature: 30 / Humidity : 60% RH(Moisture Sensitivity Levels:2a)

Inductor/MLV Preservation period 6 months

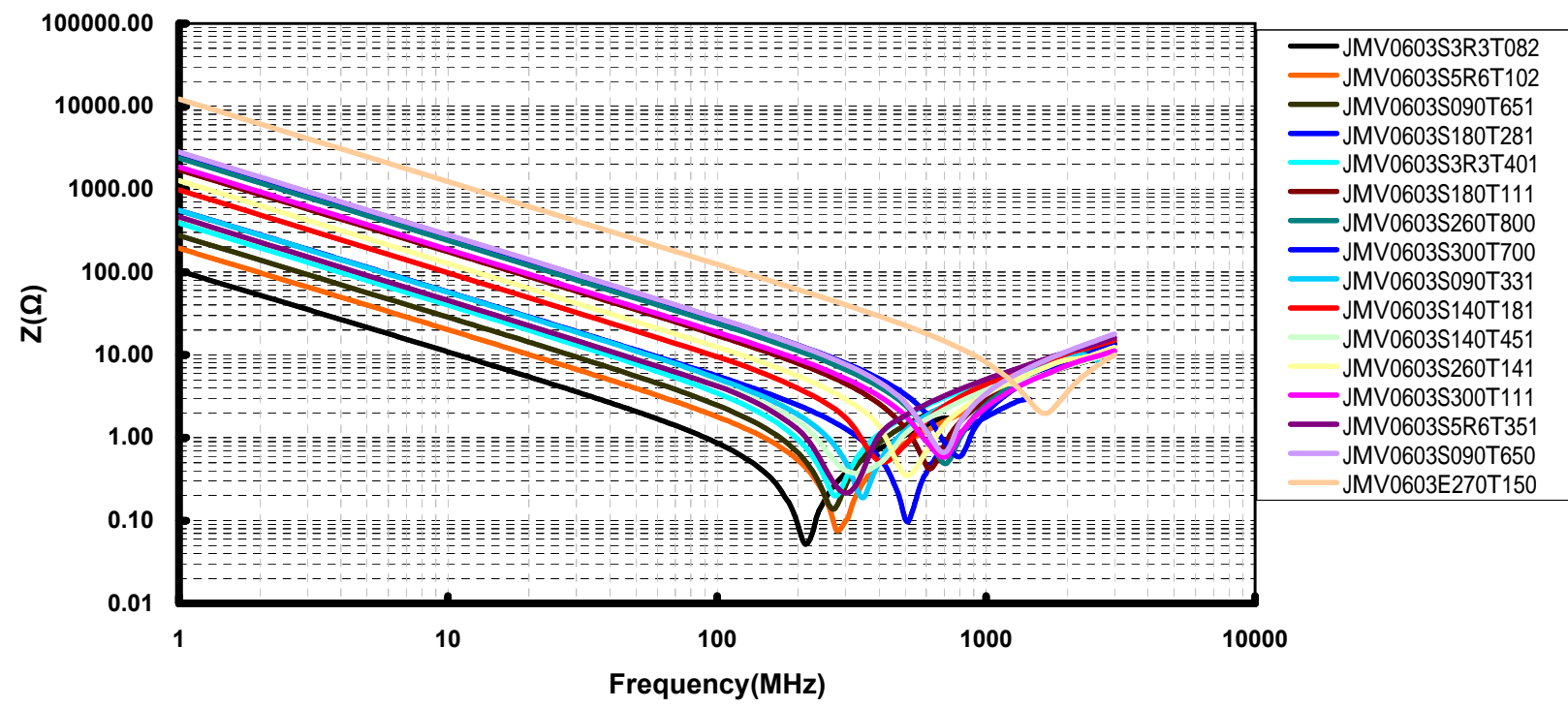
# 0603 全系列 I vs V Curve



0603 全系列 Cp vs Frequency

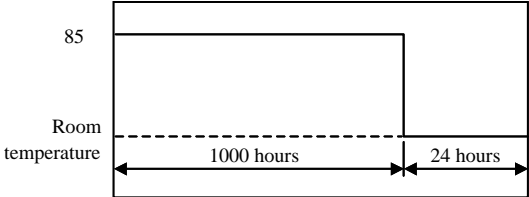
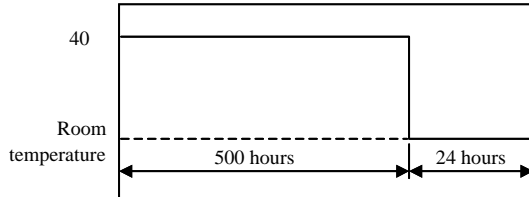
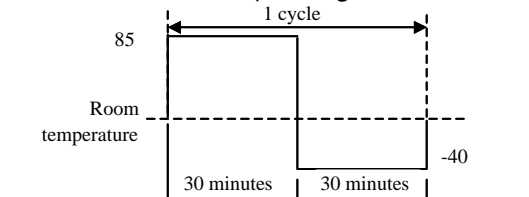
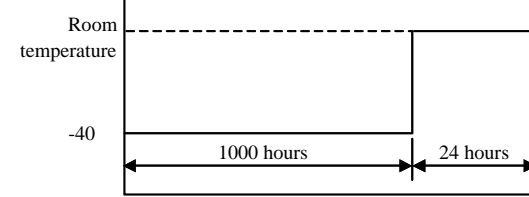


0603 全系列Z vs Frequency



# RELIABILITY TEST

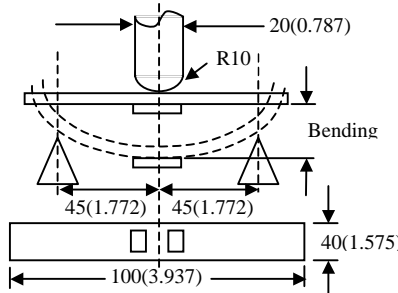
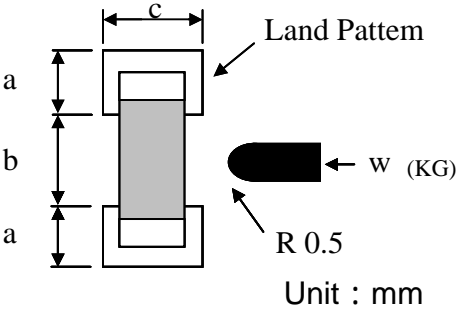
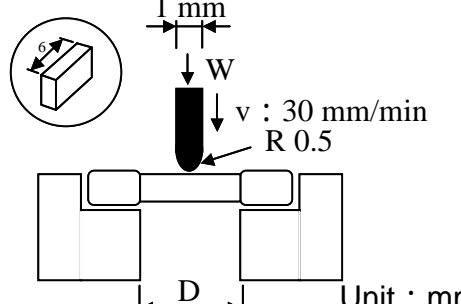
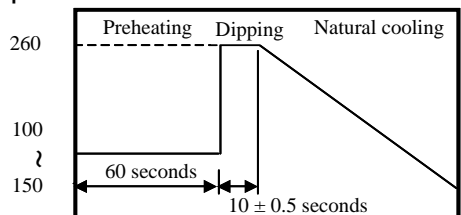
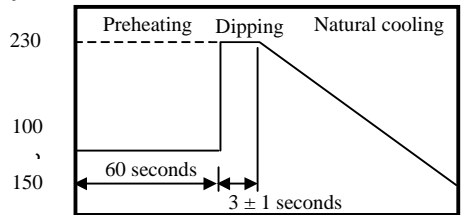
041126

Item	Performance	Test condition
Heat load resistance	Appearance:ceramic chip shall not be damaged. Vb:Within±10% of the initial value	Temperature: 85±2 Testing time:1000hours Load Voltage:Working voltage Measurement : After placing for 24 hours min. 
Humidity resistance	Appearance:ceramic chip shall not be damaged. Vb:Within±10% of the initial value	Humidity:90 to 95% RH Temperature: 40±2 Testing time:500hours Measurement : After placing for 24 hours min. 
Thermal shock	Appearance:Cracking,chipping or any other defects harmful to the characteristics shall not be allowed Vb:Within±10% of the initial value	Temperature: -40,+85 ,Kept stabilized for 30 minutes each Cycle:100 cycles Measurement : After placing for 24 hours min. 
Low temperature resistance	Appearance:Cracking,chipping or any other defects harmful to the characteristics shall not be allowed Vb:Within±10% of the initial value	Temperature: -40±2 Testing time:1000hours Measurement:After placing for 24 hours min. 
ESD test (Only for E-type)	Appearance:ceramic chip shall not be damaged. Vb:Within±10% of the initial value	Discharge:Air discharge Voltage:15KV Polarity: + , - Number:10 times in 10 seconds.
ESD life (Only for E-type)	Appearance:ceramic chip shall not be damaged. Vb:Within±10% of the initial value	Discharge:Contact discharge Voltage:8KV Polarity: + , - Number:10000 times in 10 seconds.

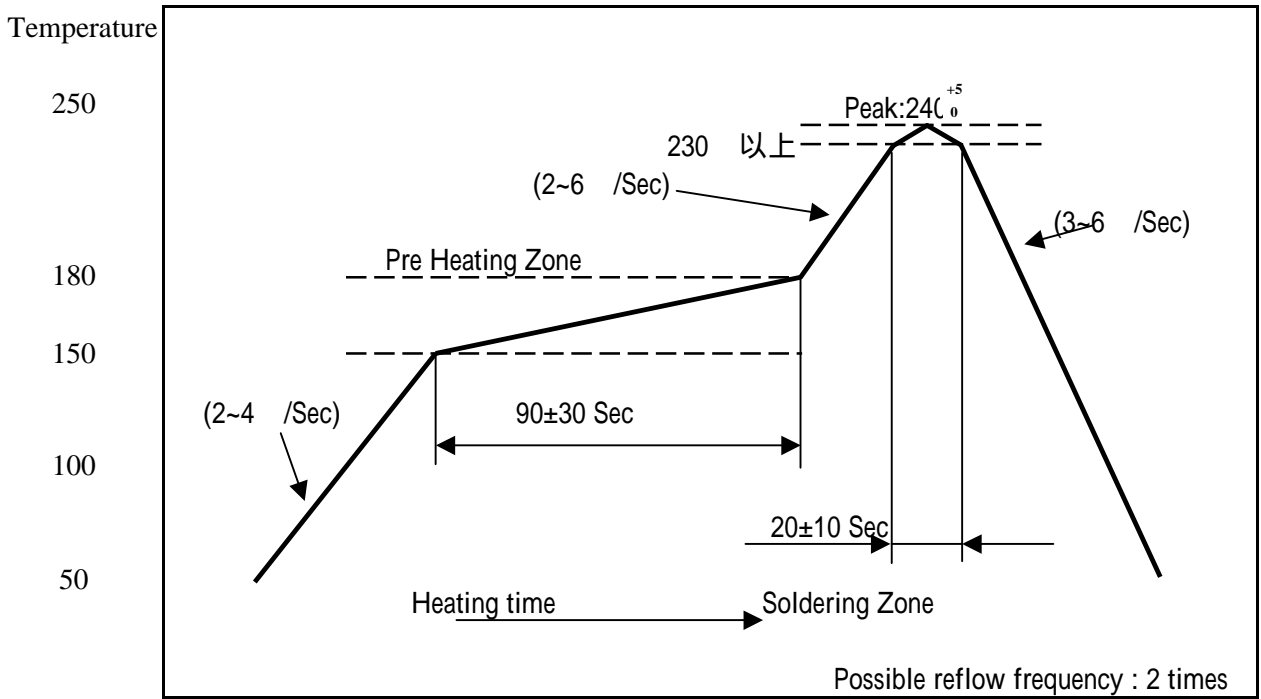


# MECHANICAL TEST

041210

Item	Performance	Test condition																									
Board flexure strength	No mechanical damage shall be noticed even when the board is bent 2mm (0.079inches)	Solder a chip on a test substrate. Bend the substrat by 2mm(0.079in) 																									
Flexure strength	The terminal electrode and chip body must not be damaged by the forces applied. <table border="1" data-bbox="327 772 997 963"> <thead> <tr> <th>SIZE</th> <th>0402</th> <th>0603</th> <th>0805</th> <th>1206</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>-</td> <td>1.0</td> <td>1.0</td> <td>1.3</td> </tr> <tr> <td>b</td> <td>-</td> <td>0.8</td> <td>1.0</td> <td>1.5</td> </tr> <tr> <td>c</td> <td>-</td> <td>1.3</td> <td>1.3</td> <td>3.0</td> </tr> <tr> <td>w</td> <td>-</td> <td>1.0</td> <td>4.0</td> <td>5.0</td> </tr> </tbody> </table>	SIZE	0402	0603	0805	1206	a	-	1.0	1.0	1.3	b	-	0.8	1.0	1.5	c	-	1.3	1.3	3.0	w	-	1.0	4.0	5.0	 <p>Unit : mm</p>
SIZE	0402	0603	0805	1206																							
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Bending strength	The ceramic ship shall not be damaged be the forces applied under the following conditions. <table border="1" data-bbox="454 1108 861 1299"> <thead> <tr> <th>TYPE</th> <th>D(mm)</th> <th>W(kg)</th> </tr> </thead> <tbody> <tr> <td>0402</td> <td>-</td> <td>-</td> </tr> <tr> <td>0603</td> <td>1.3</td> <td>2.0</td> </tr> <tr> <td>0805</td> <td>1.3</td> <td>3.0</td> </tr> <tr> <td>1206</td> <td>2.0</td> <td>4.0</td> </tr> </tbody> </table>	TYPE	D(mm)	W(kg)	0402	-	-	0603	1.3	2.0	0805	1.3	3.0	1206	2.0	4.0	 <p>Unit : mm</p>										
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Resistance to solder heat	The ceramic chip shall not be damaged. Shall be covered with solder. Vb: Within ±10% of the initial value.	Preheat:100 ~150 ,60seconds Solder temperature:260±10 Flux:Rosin Dip time:10±0.5 seconds 																									
Solderability	More than 90% of terminal electrode shall be covered with solder.	Preheat:100 ~150 ,60seconds Solder temperature:230±10 Flux:Rosin Dip time:3±1 seconds 																									

# Reflow soldering temperature profile



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