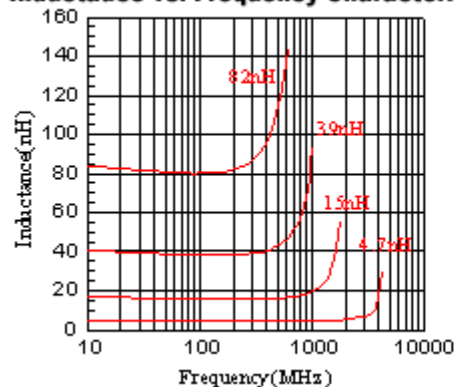


- Ceramic Chip Inductors (0805)

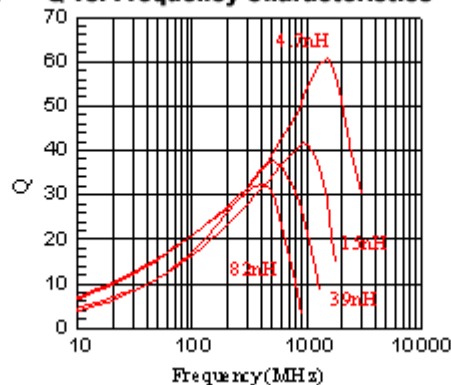
Part Number		Inductance (nH) @100MHz	Q Typical		SRF (MHz) Typ.	RDC (Ω) Max.	IDC (mA) Max
			100MHz	800MHz			
CHL-201209	-1N5□	1.5	21	61	>6000	0.10	300
CHL-201209	-1N8□	1.8	18	55	>6000	0.10	300
CHL-201209	-2N2□	2.2	18	53	>6000	0.10	300
CHL-201209	-2N7□	2.7	19	56	>6000	0.10	300
CHL-201209	-3N3□	3.3	16	47	>6000	0.13	300
CHL-201209	-3N9□	3.9	18	54	>6000	0.15	300
CHL-201209	-4N7□	4.7	18	55	>6000	0.20	300
CHL-201209	-5N6□	5.6	20	60	5400	0.23	300
CHL-201209	-6N8□	6.8	20	63	4200	0.25	300
CHL-201209	-8N2□	8.2	21	63	3700	0.28	300
CHL-201209	-10N□	10.0	20	60	3100	0.3	300
CHL-201209	-12N□	12.0	21	60	3000	0.35	300
CHL-201209	-15N□	15.0	22	63	2600	0.40	300
CHL-201209	-18N□	18.0	24	63	2300	0.45	300
CHL-201209	-22N□	22.0	23	60	2100	0.50	300
CHL-201209	-27N□	27.0	23	58	1800	0.55	300
CHL-201209	-33N□	33.0	24	55	1700	0.60	300
CHL-201209	-39N□	39.0	23	47	1400	0.65	300
CHL-201209	-47N□	47.0	23	43	1200	0.70	300
CHL-201209	-56N□	56.0	23	39	1100	0.75	300
CHL-201209	-68N□	68.0	25	30	900	0.80	300
CHL-201209	-82N□	82.0	24	-	800	0.90	300
CHL-201209	-R10□	100.0	23	-	800	0.90	300
CHL-201209	-R12□	120.0	22	-	700	0.95	300
CHL-201209	-R15□	150.0	22	-	700	1.00	300
CHL-201209	-R18□	180.0	23	-	600	1.10	300
CHL-201209	-R22□	220.0	20	-	550	1.20	300
CHL-201209	-R27□	270.0	20	-	480	1.30	300
CHL-201209	-R33□	330.0	22	-	400	1.40	300
CHL-201209	-R39□	390.0	17	-	400	1.30	300
CHL-201209	-R47□	470.0	17	-	350	1.50	300
CHL-201209	-R56□	560.0	15	-	230	5.00	50
CHL-201209	-R68□	680.0	14	-	180	5.50	50

Testing Instrument: HP 8753E

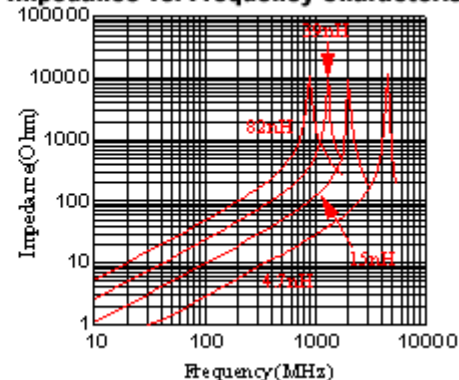
Inductance vs. Frequency Characteristics



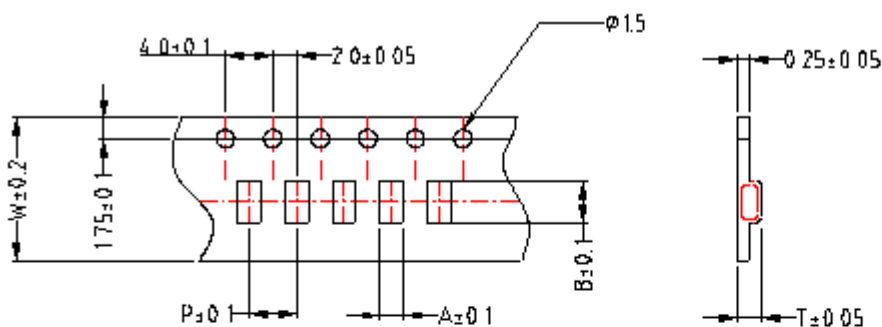
Q vs. Frequency Characteristics



Impedance vs. Frequency Characteristics



Packing Tape Dimensions & Packaging

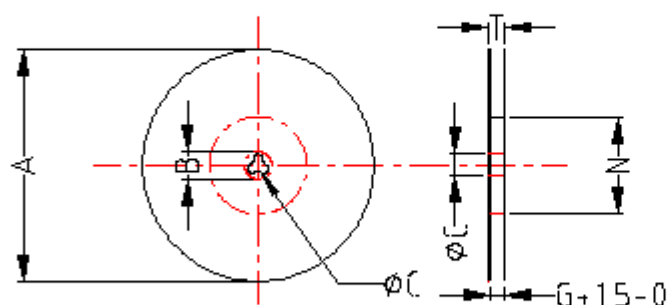


TAPE MATERIAL:
CARRIER TAPE:
POLYSTYRENE
COVER TAPE:
POLYETHYLENE

UNIT:mm

TYPE	A	B	T	W	P	CHIPS/REEL
160808	1.08	1.88	1.05	8	4	4000
201209	1.42	2.24	1.04	8	4	4000
201212	1.50	2.30	1.60	8	4	2000
321611	1.88	3.50	1.27	8	4	3000
322513	2.85	3.56	1.66	8	4	2000
451616	1.95	4.95	1.93	12	4	2000
453215	3.66	4.95	1.83	12	8	1000

CARRIER TYPE REELS



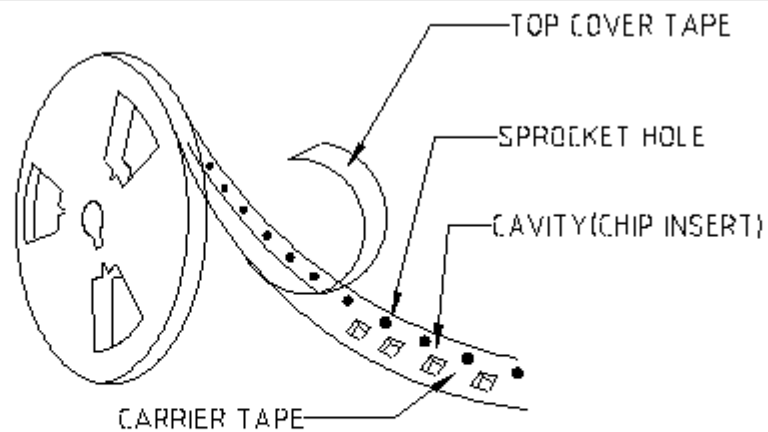
Material: Plastic/ Paper
W is the tape width

W	8mm	12mm
A	178.0±2.0	178.0±2.0
B	21.0±0.8	21.0±0.8
C	13.0±0.8	13.0±0.8
G	10.0	14.0
N	75.0	75.0
T	12.5	16.5

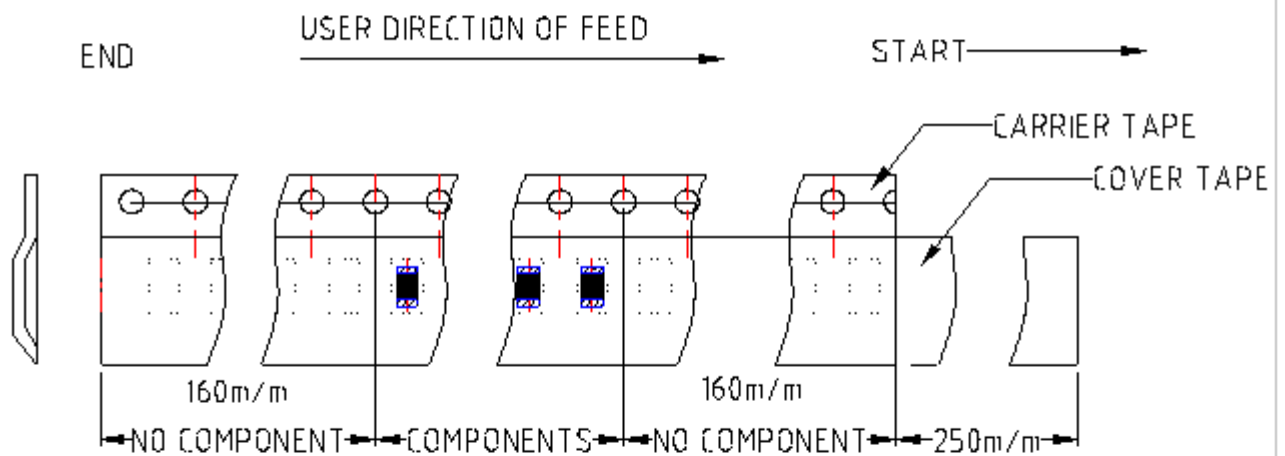
Ps. 8mm tape width: for type 160808, 201209, 201212, 321611, 322513

12mm tape width: for type 451616, 453215

Structure of Taping Reel Dimensions

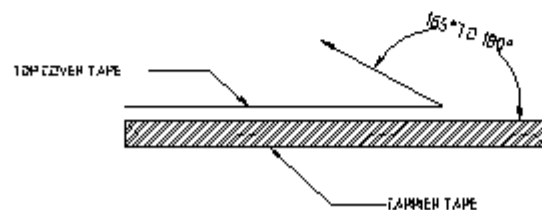


Leader & Trailer Tape



Strength of Carrier Tape & Top cover Tape

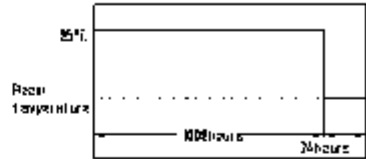
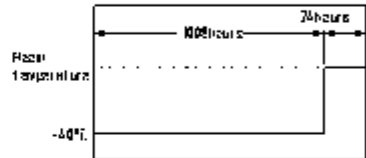
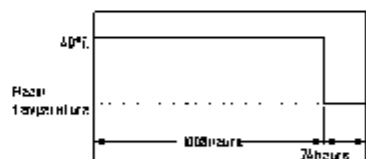
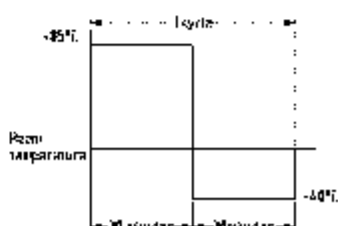
The force for tearing off cover tape is 10 to 130 grams in the arrow direction



RELIABILITY TEST

ITEM	SPECIFICATION	TEST CONDITION																								
Soldering heat resistance	The chip shall not be cracks . More than 75% of terminal electrode shall be covered with solder. Impedance: within$\pm 20\%$ of the initial value. Inductance: within$\pm 10\%$ of the initial value.	Preheat:150°C,60 seconds Solder:H63A Solder:temperature:260$\pm 5^{\circ}\text{C}$ Flux: Rosin Dip time:1.0± 0.5 seconds																								
solderability	More than 90% of the terminal electrode shall be covered with new solder.	Preheat:150°C,60 seconds Solder:H63A Solder:temperature:230$\pm 5^{\circ}\text{C}$ Flux: Rosin Dip time:4± 1 seconds																								
Terminal strength	The terminal electrode and ferrite shall not be damaged by the forces applied on the right conditions.	<table border="1"> <thead> <tr> <th>TYPE</th><th>P(kgf)</th><th>TIME(S)</th></tr> </thead> <tbody> <tr><td>160808</td><td>0.5</td><td>30± 5</td></tr> <tr><td>201209</td><td>0.6</td><td>30± 5</td></tr> <tr><td>201212</td><td>0.8</td><td>30± 5</td></tr> <tr><td>321611</td><td>1.0</td><td>30± 5</td></tr> <tr><td>322513</td><td>1.0</td><td>30± 5</td></tr> <tr><td>451616</td><td>1.0</td><td>30± 5</td></tr> <tr><td>453215</td><td>1.5</td><td>30± 5</td></tr> </tbody> </table>	TYPE	P(kgf)	TIME(S)	160808	0.5	30 ± 5	201209	0.6	30 ± 5	201212	0.8	30 ± 5	321611	1.0	30 ± 5	322513	1.0	30 ± 5	451616	1.0	30 ± 5	453215	1.5	30 ± 5
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Bending strength	The ferrite shall not be damaged by the forces applied on the right conditions.	<table border="1"> <thead> <tr> <th>TYPE</th><th>A(m/m)</th><th>P(kgf)</th></tr> </thead> <tbody> <tr><td>160808</td><td>1.0</td><td>0.5</td></tr> <tr><td>201209</td><td>1.4</td><td>1.0</td></tr> <tr><td>201212</td><td>1.4</td><td>1.2</td></tr> <tr><td>321611</td><td>2.0</td><td>2.0</td></tr> <tr><td>322513</td><td>2.0</td><td>2.0</td></tr> <tr><td>451616</td><td>2.5</td><td>2.5</td></tr> <tr><td>453215</td><td>2.7</td><td>2.5</td></tr> </tbody> </table>	TYPE	A(m/m)	P(kgf)	160808	1.0	0.5	201209	1.4	1.0	201212	1.4	1.2	321611	2.0	2.0	322513	2.0	2.0	451616	2.5	2.5	453215	2.7	2.5
TYPE	A(m/m)	P(kgf)																								
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Flexure strength	The terminal electrode and ferrite shall not be damaged by the forces applied on the right conditions.	After soldering a chip to test substrate, bend the substrate by 2 mm and then return. Soldering shall be done in accordance with the recommended PC board pattern and reflow soldering.																								

RELIABILITY TEST

ITEM	SPECIFICATION	TEST CONDITION
High temperature resistance	Appearance: Ferrite shall not be damaged. Impedance : Within $\pm 20\%$ of the initial value. Inductance : Within $\pm 20\%$ of the initial value. Q: Within $\pm 30\%$ of the initial value. This test procedure was according to JESD22-A103-A	Temperature: 85°C ($+1.5^{\circ}\text{C} \sim +3.8^{\circ}\text{C}$) Testing time: 1008 hours. Measurement: After placing for 24 hours min 
Low temperature storage life test	Appearance: cracking, chipping or any other defects harmful to the characteristics shall not be allowed. Impedance: Within $\pm 20\%$ of the initial value. Inductance: Within $\pm 10\%$ of the initial value. Q: Within $\pm 30\%$ of the initial value.	Temperature: -40°C ($0.9^{\circ}\text{C} \sim +2.9^{\circ}\text{C}$) Testing time: 1008 hours. Measurement: After placing for 24 hours min 
Humidity resistance	Appearance: Ferrite shall not be damaged. Impedance: Within $\pm 20\%$ of the initial value. Inductance: Within $\pm 10\%$ of the initial value. Q: Within $\pm 30\%$ of the initial value. This test procedure was according to MIL-STD-202F method 103B	Humidity: 95%RH Temperature: $60^{\circ}\text{C} \pm 1^{\circ}\text{C}$ Testing time: 1008 hours. Measurement: After placing for 24 hours min. 
Thermal shock	Appearance: Cracking, chipping or any other defects harmful to the characteristics shall not be allowed. Impedance: Within $\pm 20\%$ of the initial value. Inductance: Within $\pm 10\%$ of the initial value. Q: Within $\pm 30\%$ of the initial value. This test procedure was according to MIL-STD-883D method 1010.7	Temperature: -40°C , $+85^{\circ}\text{C}$, kept stabilized for 30 minutes each Cycle: 100 cycles Measurement: After placing for 24 hours min. 

Note

1. Operating Temperature Range: -25°C to $+85^{\circ}\text{C}$
2. Storage Temperature Range: -40°C to $+85^{\circ}\text{C}$