Specification For Approval

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

Customer：

Customer P/N：

Description： Common Mode Choke

HT P/N： CM1210A- SERIES

Revision No.： Version: 1.0

Date：

Notes： Standard

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IATF 16949:2016 / ISO 9001:2015 / ISO 14001:2015

HT Documented		Customer Approval
Approved	Jack	
Checked	George	
Prepared	Cherrie	

List of editions

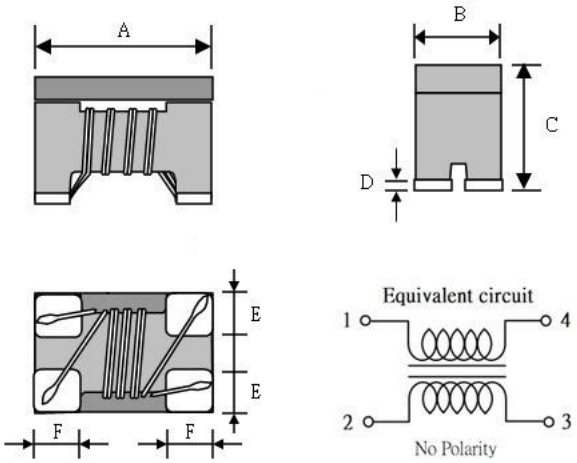
Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

Version	Revision Item	Before Revision	After Revision	Date
1.0	First Version			

Specification

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

■ Style and Dimensions (mm)



CM1210	Dimensions
A	1.2 ± 0.2
B	1.0 ± 0.2
C	0.9 Max.
D	0.15 Max.
E	0.36 Typ.
F	0.33 Typ.

■ Explanation Of Part Numbers

① ② ③ ④ ⑤

CM 1210 A - 900 S

① Product name
② Shapes and dimensions
③ Shielding Type for 1 GHz
④ Impedance【at 100MHz】900:90Ω
⑤ Tolerance：S＝±25％；M＝±20％

■ Electrical Characteristics

P/N	Z(Ω) Common Mode	DCR (Ω)	Rated current (mA)	Rated Voltage	Insulation Resistance	Withstanding Voltage
	Impedance at 100MHz	Max.	Max.	Vdc (V) Typ.	IR (MΩ) Min	Vdc (V) Typ.
CM1210A-670□	67	0.40	300	100	10	250
CM1210A-900□	90	0.50	280	100	10	250
CM1210A-121□	120	0.55	270	100	10	250
CM1210A-161□	160	0.58	260	100	10	250
CM1210A-181□	180	0.60	260	100	10	250
CM1210A-251□	250	0.70	230	100	10	250
CM1210A-331□	330	0.80	200	100	10	250
CM1210A-471□	470	0.60	250	100	10	250
CM1210A-601□	600	0.70	200	100	10	250
CM1210A-681□	680	0.75	180	100	10	250
CM1210A-801□	800	0.80	150	100	10	250
CM1210A-102□	1000	0.85	120	100	10	250

Specification

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
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■ Electrical Characteristics

※Operating temperature : -40 to +105℃

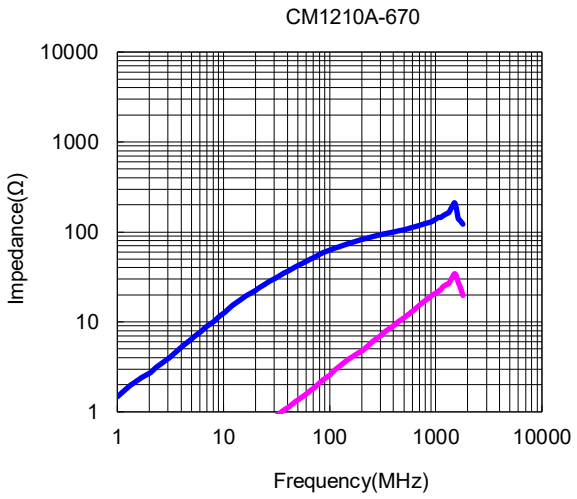
Storage temp. and humidity: Less than 40℃ and 60% RH.

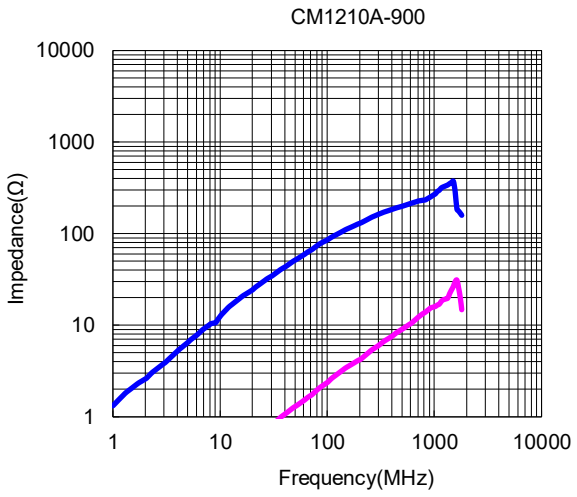
Typical Heat Rating DC Current would cause an approximately △T of 40℃

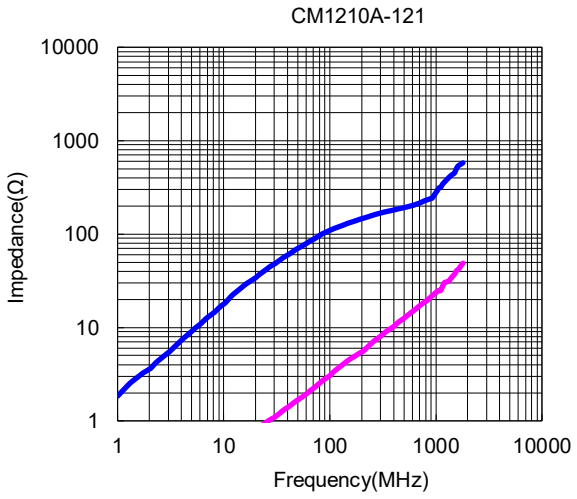
If Use Wave soldering is there will be some risk.

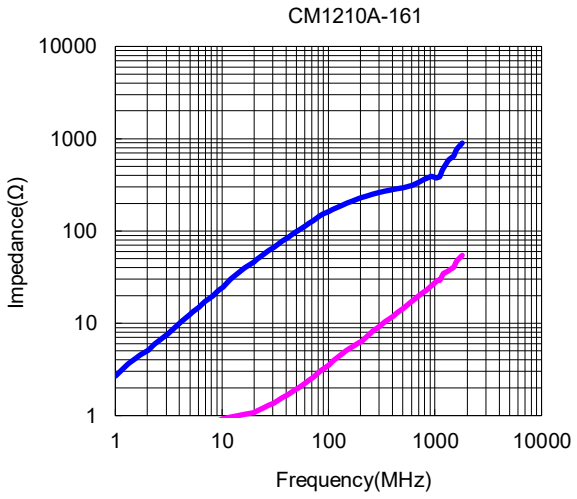
Re-flow soldering temperatures below 240 degrees, there will be unwitting risk.

■ Performance Curves







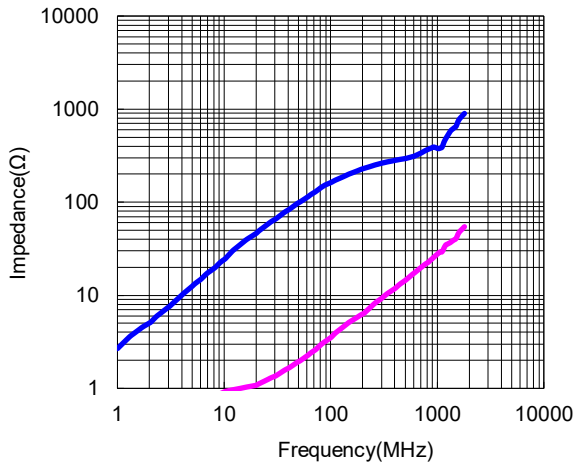


Characteristics

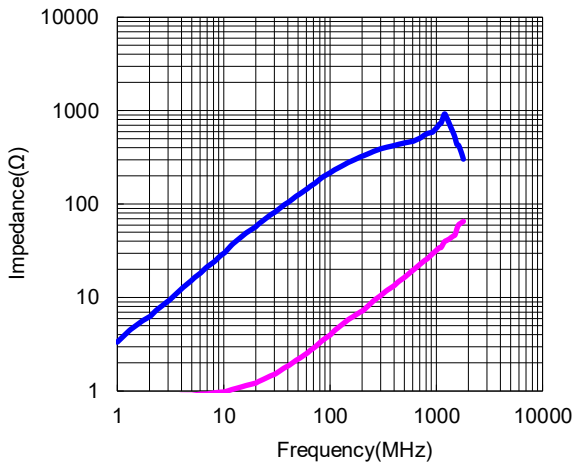
Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

■ Performance Curves

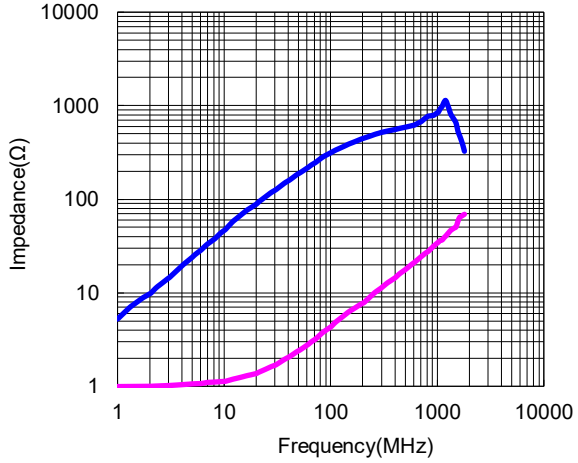
CM1210A-181



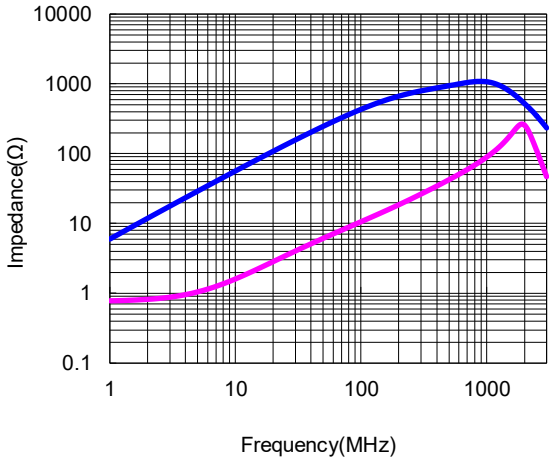
CM1210A-251



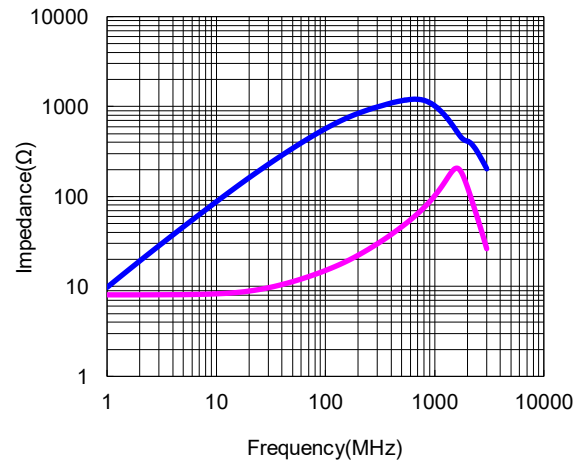
CM1210A-331



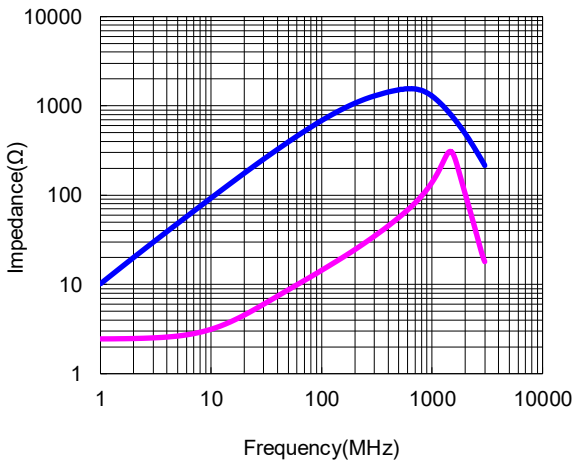
CM1210A-471



CM1210A-601



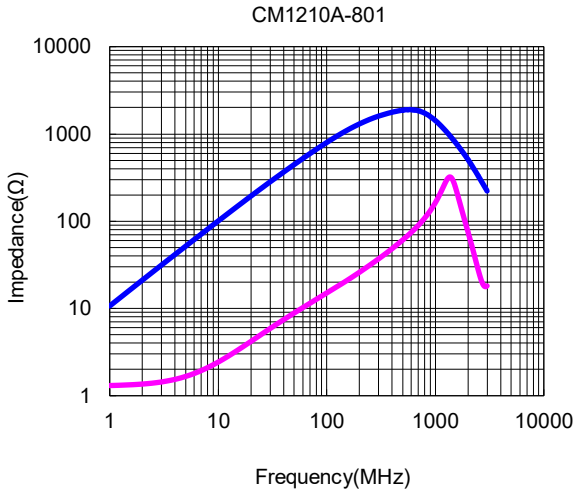
CM1210A-681

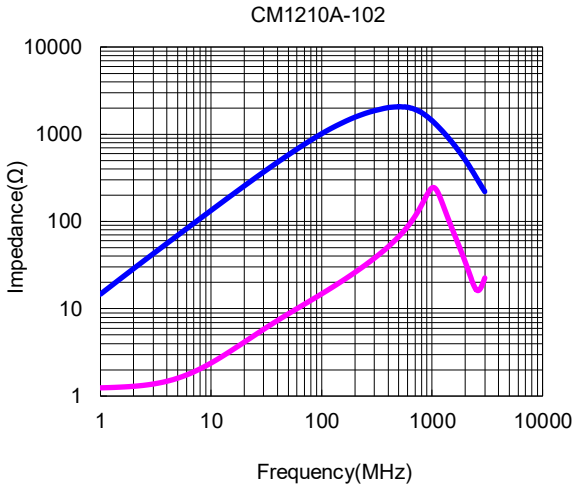


Characteristics

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

■ Performance Curves





Characteristics

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

■ Electrical Performance

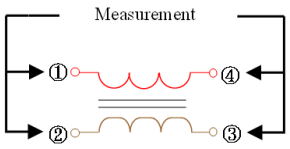
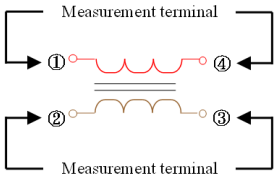
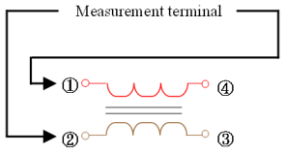
No.	Item	Specifications	Test Method
1	Impedance (Ω) (at 100MHz)	Electrical Characteristics	Measuring Equipment：Agilent E4991 or the Equivalents. Measuring Frequency：100MHz
2	DC Resistance (Ω)		Measuring Equipment：Agilent 4339B or the Equivalents. Measuring Current：100 mA max. (ref. Item 10.) (In Case of Doubt in The Above-mentioned Standard Condition, Measure by 4 Terminal Method.)
3	Heat Rating Current DC I rms.(A)		Measuring Equipment：Microtest 6379 + Microtest 6220. Typical Heat Rating DC Current would cause an approximately △T of 40℃
4	Saturation Current DC I sat. (A)		Measuring Equipment：Microtest 6379 + Microtest 6220. Base on temp. rise & ΔL/L0A≦30% Typ.
5	Insulation Resistance (I.R.)		Measuring Equipment：Chroma 19073 or the Equivalents. Test Voltage：50 V(DC) Time：Within 60 s
6	Withstanding Voltage (V)	Products shall not be damaged.	Voltage：125 V(DC) Time：60 s Charge Current：1 mA max.
7	Rated Voltage (V)		Voltage：50 V(DC) Time：60 s

Characteristics

Item P/N	CM1210A-SERIES	**Test Instrument**	E4991 / 4339 / 19073
Product	Common Mode Choke	**Test Frequency**	100 MHz / 0.5V

■ Terminal to be Tested

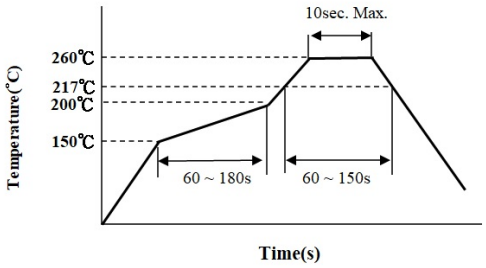
When measuring and suppling the voltage, the following terminal is applied.

No.	Item	Terminal to be Tested
1	Impedance (Ω) (Measurement Terminal)	
2	DC Resistance (Ω) (Measurement Terminal)	
3	Heat Rating Current DC I rms.(A) (Measurement Terminal)	
4	Saturation Current DC I sat. (A) (Measurement Terminal)	
5	Insulation Resistance (MΩ) (Measurement Terminal)	
6	Withstanding Voltage (V) (Measurement Terminal)	
7	Rated Voltage (V) (Measurement Terminal)	

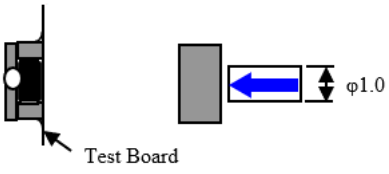
Characteristics

Item P/N	CM1210A-SERIES	Test Instrument	E4991 / 4339 / 19073
Product	Common Mode Choke	Test Frequency	100 MHz / 0.5V

■ Recommended Soldering Temp. Graph



■ Mechanical Reliability

TEST	Specification & Requirement		Method Used
Solderability	The metalized area must have 90% minimum solder coverage.		Solder temperature: 245 ± 5℃ Soldering time: 4 ± 1 sec
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.		Solder temperature: 260 ± 5℃ Soldering time: 10 ± 1 sec
Temperature cycle			Step1. 30 ± 5 minutes at -40℃ ± 5℃ Step2. 30 ± 5 minutes at +105℃ ± 5℃ Total 100continuous cycles Measurement to be made after keeping at room temperature for 24 ± 2 hours
High Temp Exposure			Temperature: 105 ± 5℃ Test duration: 500 ± 12 hours Measurement to be made after keeping at room temperature for 24 ± 2 hours
Humidity	Inductors must not have a shorted or open winding.		Humidity: 85 ± 5% R.H Temperature: 85 ± 5℃ Test duration: 500 ± 12 hours Measurement to be made after keeping at room temperature for 24 ± 2 hours
Terminal strength	Series No.	F（Kg）	Solder a chip to test substrate and then laterally apply a force in the arrow direction 
	CM1210A/C/D	0.2	
	CM1608A/C	0.5	
	CM2012A/B/C	0.5	
	CM3216A	1.0	
	3225	1.0	
	4532	1.0	

Characteristics

Item P/N	CM1210A-SERIES	Test Instrument	E4991 / 4339 / 19073
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■ Application Notice

●Storage Conditions(component level)

To maintain the solderability of terminal electrodes:

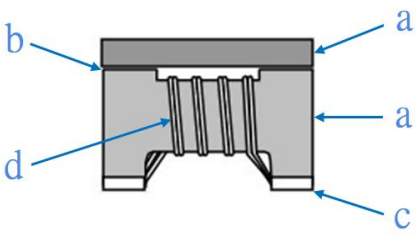
1. HUNGTRON products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
3. Recommended products should be used within 12 months form the time of delivery.
4. The packaging material should be kept where no chlorine or sulfur exists in the air.

●Transportation

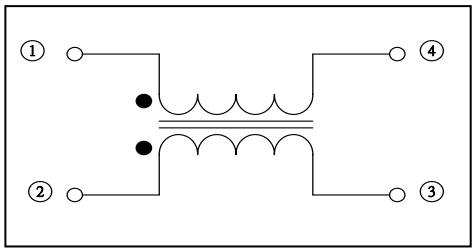
1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

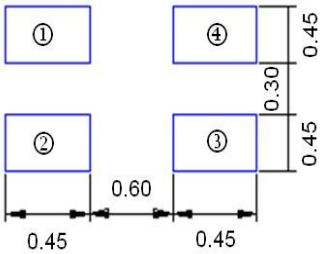
■ Product Composition Diagram

No.	Description	Specification
a.	Core	Ferrite Core
b.	Coating	Epoxy
c	Termination	Tin Pb Free
d	Wire	Enameled Copper Wire



■ Recommended Footprint

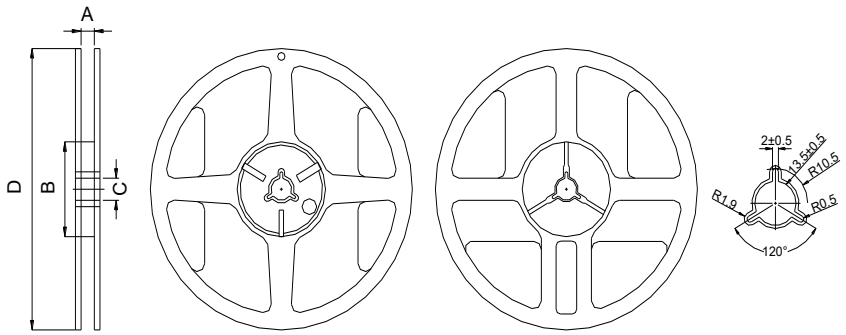




Packing For SMD

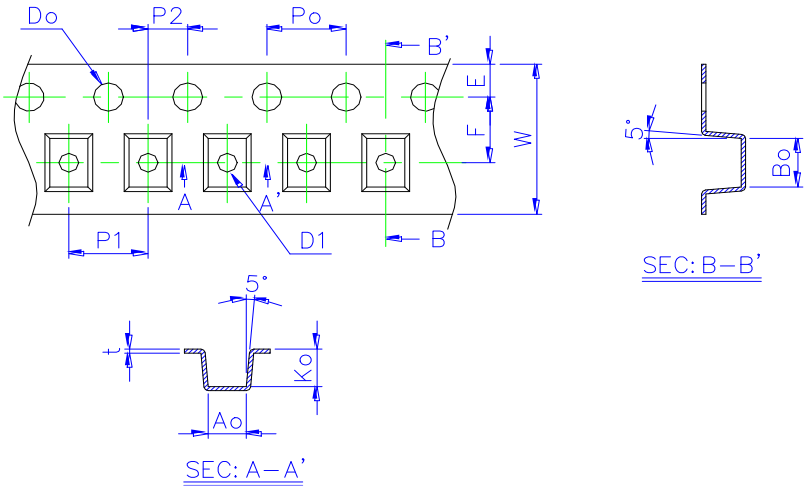
Item P/N	CM1210A-SERIES	Test Instrument	E4991 / 4339 / 19073
Product	Common Mode Choke	Test Frequency	100 MHz / 0.5V

■ Reel Dimension & Tape Dimension



7"x8mm　　7"x12mm

Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.5±0.5	60±0.5	13.5±0.5	178±1
7"x12mm	13.7±0.5	60±0.5	13.5±0.5	178±1



Size	t(mm)	Ao(mm)	Bo(mm)	Ko(mm)	W(mm)	E(mm)	F(mm)	Po(mm)	P1(mm)	P2(mm)	Do(mm)
1210	0.22±0.05	1.22±0.05	1.45±0.05	0.96±0.05	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.1,-0
1608	0.22±0.05	1.00±0.05	1.70±0.05	1.18±0.05	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.1,-0
2012	0.23±0.05	1.35±0.10	2.25±0.10	1.37±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.1,-0
3216	0.23±0.05	1.88±0.10	3.50±0.10	2.10±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.1,-0
3225	0.23±0.05	2.80±0.10	3.60±0.10	2.20±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.1,-0
4532	0.27±0.05	3.45±0.10	4.90±0.10	3.05±0.10	12.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	8.00±0.10	2.00±0.05	1.50+0.1,-0

■ Packaging Quantity

Chip Size	1210	1608	2012	3216	3225	4532
7"/ Reel	3000	2000	2000	2000	1000	500