

MOLDING POWER INDUCTORS**1. Features**

- High rated current
- Frequency up to 3MHz
- 125°C maximum total temperature operation
- Low core loss
- Ultra low buzz noise due to molding construction
- Halogen Free & ROHS compliant

2. Applications

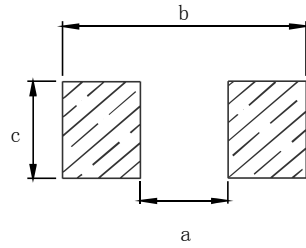
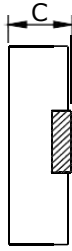
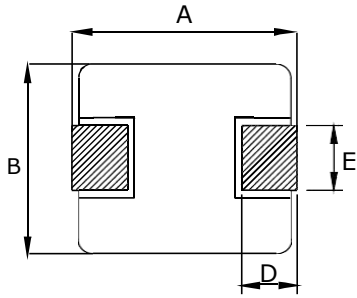
- Laptops and PCs
- Switch and servers
- Base stations
- DC/DC converters
- Battery powered devices
- SSD modules

**3. Product Identification**

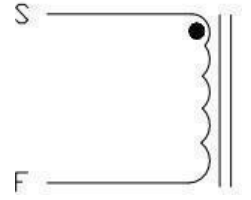
XR XXXX --- XXX M
① ② ③ ④

- ① Series name
- ② Dimensions and shape (0412~1265)
- ③ Inductance Value
- ④ Inductance Tolerance (M= ± 20%)

4. Dimensions (unit:mm)



Recommend Land Pattern



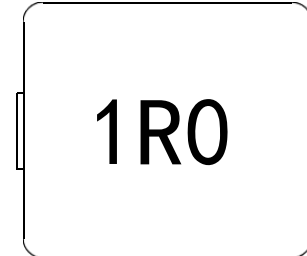
SCHEMATIC DRAWING

series	A	B	C	D	E	a typ	b typ	c typ
XR0650	7.0±0.3	6.6±0.2	4.8±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5

5. Marking

The inductor is marked with a 3-digit code

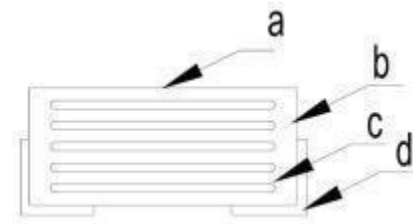
Nominal Inductance	
Example	Nominal Value
1R0	1.0 μ H
100	10 μ H
101	100 μ H



Note : Using Ink for marking

6. Structure and Components

Symbol	Components	Material
a	MARKING	Ink(black)
b	CORE	Alloy Sponge Powder
c	WIRE	Polyurethane copper wire
d	Terminal	Copper plated with Sn



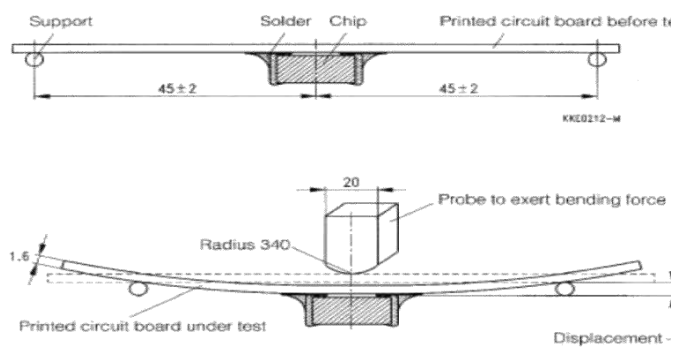
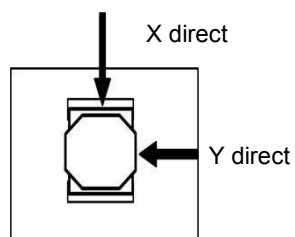
7. Electrical characteristics

•XR0650 TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (m)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX.	TYP.	TYP.
XR0650-R47M	0.47	3.9	21.0	20
XR0650-R68M	0.68	4.5	18.0	16.5
XR0650-1R0M	1.0	6.6	16.0	12
XR0650-1R5M	1.5	10	13.0	9.5
XR0650-2R2M	2.2	12.5	11.0	9
XR0650-3R3M	3.3	22.0	10.0	8.5
XR0650-4R7M	4.7	29	8	6
XR0650-5R6M	5.6	35	6.8	6
XR0650-6R8M	6.8	41	6.3	5.8
XR0650-8R2M	8.2	48	5.5	5.5
XR0650-100M	10	60	5.3	4.5
XR0650-150M	15	90	4.0	3.1
XR0650-220M	22	140	3.5	2.6
XR0650-330M	33	190	3.0	2.3
XR0650-470M	47	230	2.6	2.0
XR0650-680M	68	360	2.2	1.7
XR0650-820M	82	480	2.1	1.6
XR0650-101M	100	595	2.0	1.5

8. Reliability Test

Item	Specification and Requirement	Test Method								
Solderability	1. No case deformation or change in appearance 2. New solder coverage More than 90%	1. Preheat: $155^{\circ}\text{C} \pm 5^{\circ}\text{C}$, $60\text{S} \pm 2\text{S}$ 2. Tin: lead-free. 3. Temperature: $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$, flux $3.0\text{S} \pm 0.5\text{S}$.								
Mechanical shock	1. No case deformation or change in appearance 2. $\Delta\text{L}/\text{Lo} \leq \pm 10\%$	1. Acceleration: 100G 2. Pulse time: 6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions								
Mechanical vibration	1. No case deformation or change in appearance 2. $\Delta\text{L}/\text{Lo} \leq \pm 10\%$	1. The test samples shall be soldered to the board. Then it shall be submitted to below test conditions. <table border="1" style="margin: 10px auto;"> <tr> <td>Fre. Range</td> <td>10~55Hz</td> </tr> <tr> <td>Total Amplitude</td> <td>1.5mm</td> </tr> <tr> <td>Sweeping Method</td> <td>10Hz to 55Hz to 10Hz</td> </tr> <tr> <td>Time</td> <td>For 2 hours on each X,Y,Z axis.</td> </tr> </table> 2. Recovery: At least 2 hours of recovery under the standard condition after the test, followed by the measurement within 24 ± 2 hours.	Fre. Range	10~55Hz	Total Amplitude	1.5mm	Sweeping Method	10Hz to 55Hz to 10Hz	Time	For 2 hours on each X,Y,Z axis.
Fre. Range	10~55Hz									
Total Amplitude	1.5mm									
Sweeping Method	10Hz to 55Hz to 10Hz									
Time	For 2 hours on each X,Y,Z axis.									
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. First -55°C for 30 minutes, last 125°C for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 2 minutes. 3. Measured at room temperature after placing for 24 ± 2 hours								
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Reflow 2 times, 2. 85°C , 85%RH, 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours								
Low temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature: $-55 \pm 2^{\circ}\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours								

<p>High temperature storage</p>	<p>Inductance change: Within $\pm 10\%$ Without distinct damage in appearance</p>	<ol style="list-style-type: none"> 1. Temperature: $+125 \pm 2^\circ\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours
<p>Board Flex</p>	<p>Inductance change: Within $\pm 10\%$ Without distinct damage in appearance</p>	<ol style="list-style-type: none"> 1. Run through IR reflow for 2 times; 2. Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down 3. The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum. 4. The duration of the applied forces shall be 60 ± 5 sec. The force is to be applied only once to the board. 
<p>Terminal Strength</p>	<p>No removal or split of the termination or other defects shall occur.</p>	<ol style="list-style-type: none"> 1. The test samples shall be soldered to the board 2. Push the product vertically from the side of the sample using the thrust tester. 3. Automotive electronics: 17.7N, $60\text{S} \pm 1\text{s}$, X , Y direct. 

Recommended Soldering Technologies

(1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~180sec.

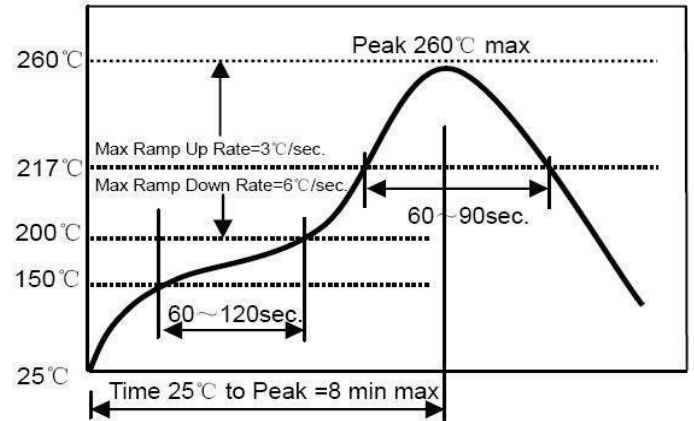
Allowed time above 217°C: 80~120sec.

Max temp: 260°C

Max time at max temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



(2) Iron Soldering Profile

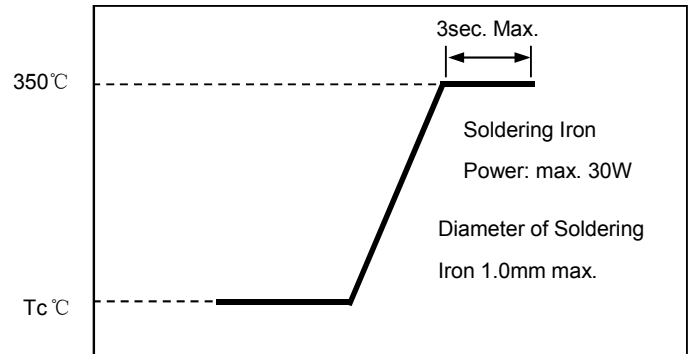
Iron soldering power: Max. 30W

Pre-heating: 150°C/60sec.

Soldering time: 3sec.Max.

Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering

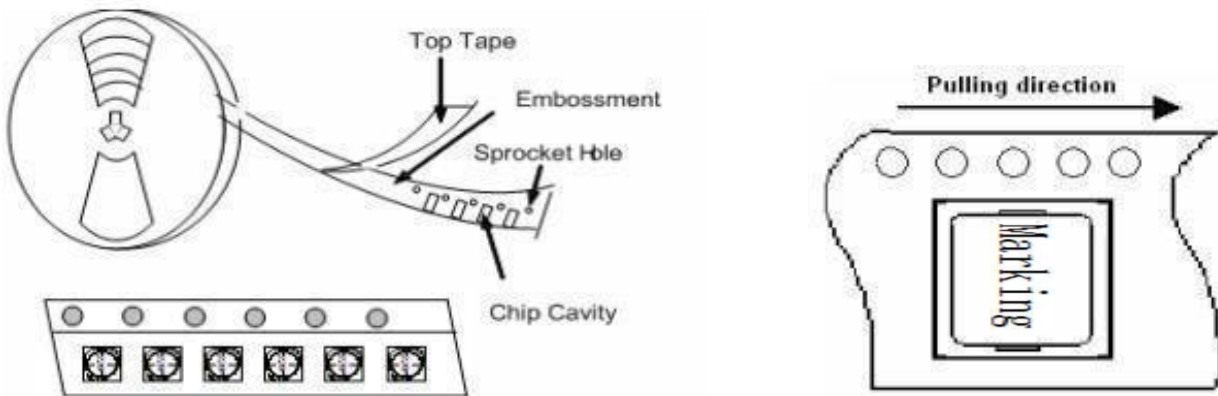


9. Packaging, Storage and Transportation

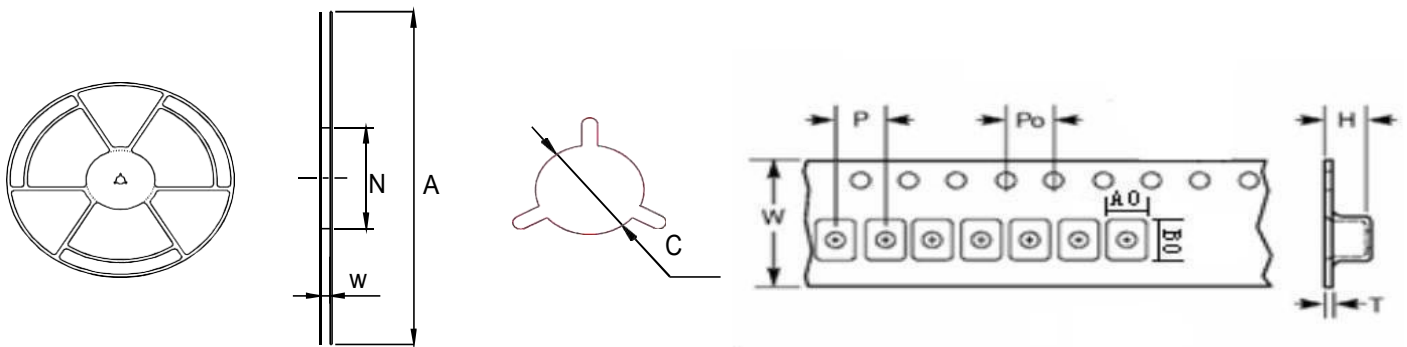
- Tape Carrier Packaging:

Type	Standard Quantity (pcs/reel)	Type	Standard Quantity (pcs/reel)
XR0412	2000/3000	XR0640	1000
XR0420	3000	XR0650	1000
XR0518	2000/2500	XR1040	500/1000
XR0520	2000/2500	XR1045	800
XR0530	1500/2000	XR1240	500
XR0620	1000/1500	XR1250	500
XR0624	1000/1500	XR1265	400/500
XR0630	1000		

- Taping Drawings (UNIT:mm)

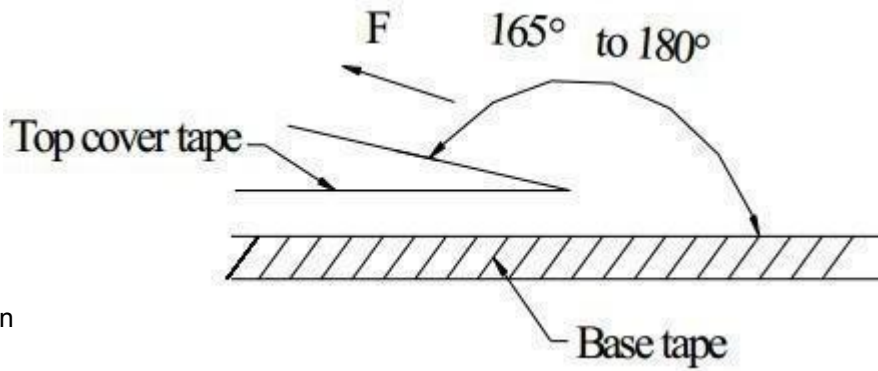


- Reel and Taping Dimensions (UNIT:mm)



Type	Reel Dimensions (mm)				Tape Dimensions (mm)							
	A	N	W	C	W	P	P0	A0	B0	H	T	
XR0412	330 +2/-0	100 +2/-0	12.4 +2/-0	13.2 ±0.2	12±0.3	8±0.1	4±0.1	4.4±0.1	4.9±0.1	1.5±0.05	0.3±0.05	
XR0420	330 +2/-0	100 +2/-0	12.4 +2/-0	13.2 ±0.2	12±0.3	8±0.1	4±0.1	4.4±0.1	4.9±0.1	2.3±0.05	0.35±0.05	
XR0518	330 +2/-0	100 +2/-0	12.4 +2/-0	13.2 ±0.2	12±0.3	8±0.1	4±0.1	5.4±0.1	5.9±0.1	2.1±0.05	0.35±0.05	
XR0520	330 +2/-0	100 +2/-0	12.4 +2/-0	13.2 ±0.2	12±0.3	8±0.1	4±0.1	5.5±0.1	5.85±0.1	2.2±0.1	0.35±0.05	
XR0530	330 +2/-0	100 +2/-0	12.4 +2/-0	13.2 ±0.2	12±0.3	8±0.1	4±0.1	5.4±0.1	5.9±0.1	3.3±0.05	0.35±0.05	
XR0620	330 +2/-0	100 +2/-0	16.4 +2/-0	13.2 ±0.2	16±0.3	12±0.1	4±0.1	6.9±0.1	7.5±0.1	2.1±0.05	0.35±0.05	
XR0624	330 +2/-0	100 +2/-0	16.4 +2/-0	13.2 ±0.2	16±0.3	12±0.1	4±0.1	6.9±0.1	7.5±0.1	2.7±0.05	0.35±0.05	
XR0630	330 +2/-0	100 +2/-0	16.4 +2/-0	13.2 ±0.2	16±0.3	12±0.1	4±0.1	6.9±0.1	7.5±0.1	3.3±0.05	0.35±0.05	
XR0640	330 +2/-0	100 +2/-0	16.4 +2/-0	13.2 ±0.2	16±0.3	12±0.1	4±0.1	6.9±0.1	7.5±0.1	4.2±0.1	0.35±0.05	
XR0650	330 +2/-0	100 +2/-0	16.4 +2/-0	13.2 ±0.2	16±0.3	12±0.1	4±0.1	6.9±0.1	7.5±0.1	5.2±0.1	0.4±0.05	
XR1040	330 +2/-0	100 +2/-0	24.4 +2/-0	13.2 ±0.2	24±0.3	16±0.1	4±0.1	10.4±0.1	11.5±0.1	4.3±0.1	0.35±0.05	
XR1045	330 +2/-0	100 +2/-0	24.4 +2/-0	13.2 ±0.2	24±0.3	16±0.1	4±0.1	10.4±0.1	11.5±0.1	4.8±0.1	0.35±0.05	
XR1240	330 +2/-0	100 +2/-0	24.4 +2/-0	13.2 ±0.2	24±0.3	16±0.1	4±0.1	13.4±0.1	14.4±0.1	4.3±0.1	0.5±0.05	
XR1250	330 +2/-0	100 +2/-0	24.4 +2/-0	13.2 ±0.2	24±0.3	16±0.1	4±0.1	13.2±0.1	14.4±0.1	5.3±0.1	0.5±0.05	
XR1265	330 +2/-0	100 +2/-0	24.4 +2/-0	13.2 ±0.2	24±0.3	16±0.1	4±0.1	13.2±0.1	14.4±0.1	6.3±0.1	0.5±0.05	

- Peel force of top cover tape
The peel speed shall be about 300mm/minute
The peel force of top cover tape shall be between 0.1 to 1.3 N



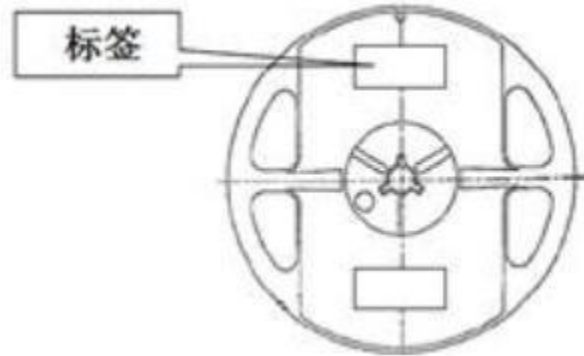
- Label makin

Label on the reel

- Customer's part Number
- Lot Number
- Quantity
- date code

Shipping Label

- Customer's part Number
- Manufacturer's part Number
- Quantity
- date code



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Fixed Inductors](#) category:

Click to view products by [MaxLinear](#) manufacturer:

Other Similar products are found below :

[CR32NP-100KC](#) [CR54NP-470LC](#) [70F224AI](#) [MGDQ4-00004-P](#) [MHQ1005P10NJ](#) [MHQ1005P1N0S](#) [MHQ1005P2N4S](#) [MHQ1005P3N6S](#)
[MHQ1005P5N1S](#) [MHQ1005P8N2J](#) [PE-53601NL](#) [PE-53602NL](#) [PG0936.113NLT](#) [9220-20](#) [9310-16](#) [PM06-2N7](#) [PM06-39NJ](#) [A01TK](#)
[1206CS-471XJ](#) [HC2-R47-R](#) [HC8-1R2-R](#) [HCF1305-3R3-R](#) [1206CS-151XG](#) [RCH664NP-140L](#) [RCH664NP-4R7M](#) [RCP1317NP-391L](#)
[RCR110DNP-331L](#) [DH2280-4R7M](#) [DS1608C-106](#) [B10TJ](#) [B82498B3101J000](#) [ELJ-RE27NJF2](#) [1812CS-153XJ](#) [1812CS-183XJ](#) [1812CS-](#)
[223XJ](#) [1812LS-104XJ](#) [1812LS-105XJ](#) [1812LS-124XJ](#) [1812LS-154XJ](#) [1812LS-223XJ](#) [1812LS-224XJ](#) [1812LS-563XJ](#) [1812LS-683XJ](#)
[1812LS-824XJ](#) [NIN-FB101JTR110F](#) [NIN-FB471JTR62F](#) [NIN-FC1R5JTR220F](#) [NIN-HCR15JTRF](#) [NIN-HCR33JTRF](#) [NIN-HDR22JTRF](#)