

Features

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

Applications

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

Product Identification

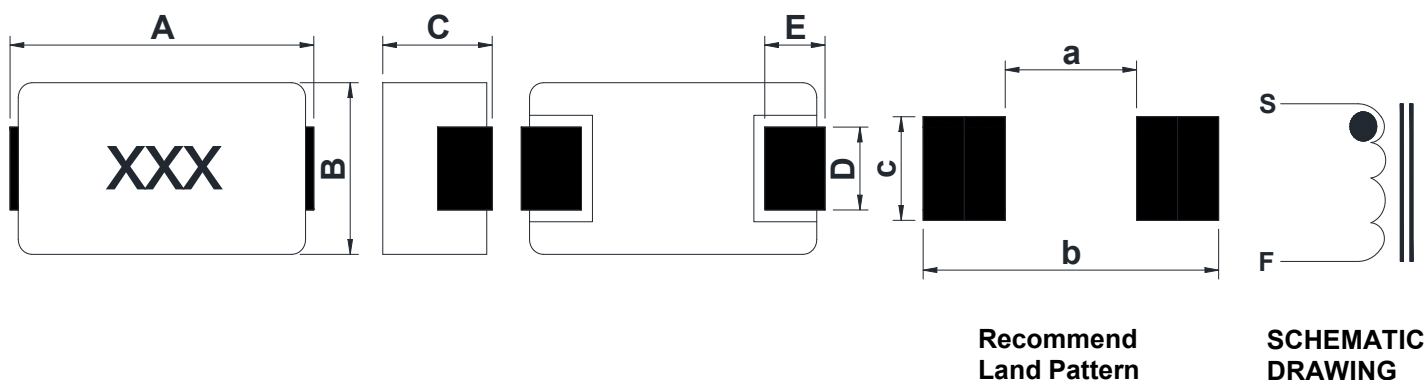
MPIB XXXX - XXX M

① ② ③ ④

- ① Series name
- ② Product dimensions (1064:10*6*4.0 mm)
- ③ Inductance Value (R12:0.12uH)
- ④ Inductance Tolerance (M= $\pm 20\%$)

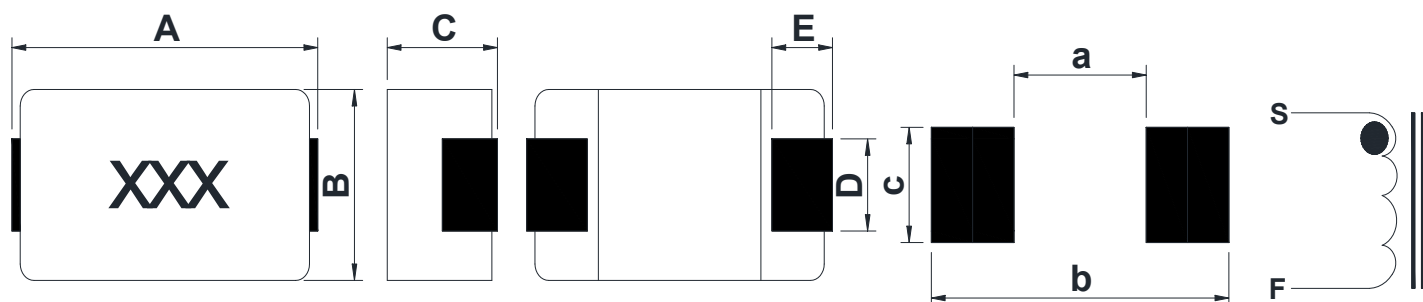
MOLDING POWER INDUCTORS

Dimensions (unit:mm)



series	A	B	C	D	E	a (typ)	b (typ)	c (typ)
MPIB1063	10.10±0.50	5.50±0.50	3.00 MAX	2.80±0.50	2.20±0.50	4.80	10.80	3.50
MPIB1064	10.10±0.50	5.50±0.50	4.00 MAX	2.80±0.50	2.20±0.50	4.80	10.80	3.50
MPIB1065	10.10±0.50	5.50±0.50	5.00 MAX	2.80±0.50	2.20±0.50	4.80	10.80	3.50
MPIB1073	10.10±0.50	7.00±0.50	3.00 MAX	2.50±0.50	2.00±0.50	5.50	12.50	3.50
MPIB1074	10.10±0.50	7.00±0.50	4.00 MAX	2.50±0.50	2.00±0.50	5.50	12.50	3.50
MPIB1075	10.10±0.50	7.00±0.50	5.00 MAX	2.50±0.50	2.00±0.50	5.50	12.50	3.50
MPIB1084	11.30±0.50	8.30±0.50	4.00 MAX	4.40±0.50	2.20±0.50	5.00	12.50	5.00
MPIB1085	11.30±0.50	8.30±0.50	5.00 MAX	4.40±0.50	2.20±0.50	5.00	12.50	5.00
MPIB1087	11.30±0.50	8.30±0.50	7.00 MAX	4.40±0.50	2.20±0.50	5.00	12.50	5.00
MPIB1174	11.20±0.50	7.20±0.50	4.00 MAX	2.8±0.50	2.20±0.50	5.50	12.50	3.50
MPIB1175	11.20±0.50	7.20±0.50	5.00 MAX	2.8±0.50	2.20±0.50	5.50	12.50	3.50
MPIB130830	12.80±0.50	8.00±0.50	3.00 MAX	3.50±0.50	2.50±0.50	6.00	14.50	5.00
MPIB130840	12.80±0.50	8.00±0.50	4.00 MAX	3.50±0.50	2.50±0.50	6.00	14.50	5.00
MPIB130850	12.80±0.50	8.00±0.50	5.00 MAX	3.50±0.50	2.50±0.50	6.00	14.50	5.00
MPIB1685	17.50 MAX	8.70±0.30	5.00 MAX	4.00±0.50	3.00±0.50	9.00	18.00	5.50

MOLDING POWER INDUCTORS



Recommend
Land Pattern

SCHEMATIC
DRAWING

Remarks:

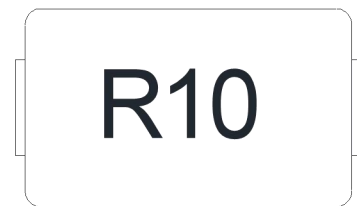
series	A	B	C	D	E	a (typ)	b (typ)	c (typ)
MPIB1075D	10.10±0.50	7.00±0.50	5.00 MAX	3.50±0.50	2.20±0.50	5.50	12.50	3.50
MPIB1076D	10.10±0.50	7.00±0.50	6.00 MAX	3.50±0.50	2.20±0.50	5.50	12.50	3.50
MPIB1274	12.20±0.50	6.90±0.50	4.00 MAX	4.00±0.50	2.40±0.50	6.00	14.00	5.00
MPIB1275	12.20±0.50	6.90±0.50	5.00 MAX	4.00±0.50	2.40±0.50	6.00	14.00	5.00
MPIB1384	12.80±0.50	8.00±0.50	4.00MAX	4.20±0.50	2.50±0.50	6.00	14.50	5.00
MPIB1385	12.80±0.50	8.00±0.50	5.00MAX	4.20±0.50	2.50±0.50	6.00	14.50	5.00

MOLDING POWER INDUCTORS

Marking

- The inductor is marked with a 3-digit code

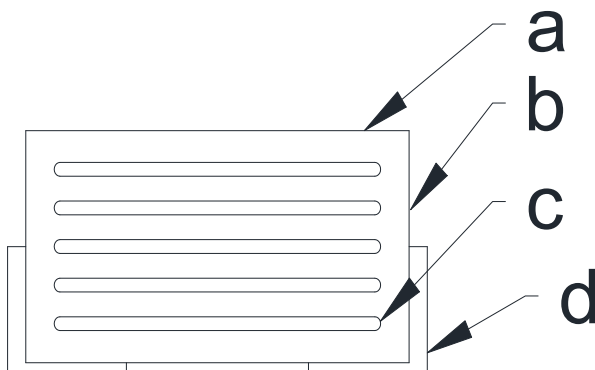
Nominal	Inductance
Example	Nominal Value
R10	0.10 μ H
R20	0.20 μ H
1R0	1.00 μ H



Note:Using Ink for marking

Structure and Components

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



Electrical characteristics

- **MPIB106** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1063-R12M-XA	0.12	1.04(0.90)	70.0	35.0
MPIB1063-R15M-XA	0.15	1.04(0.90)	60.0	35.0
MPIB1064-R10M-XA	0.10	0.75(0.60)	120.0	45.0
MPIB1064-R12M-XA	0.12	0.75(0.60)	100.0	40.0
MPIB1064-R15M-XA	0.15	0.75(0.60)	80.0	35.0
MPIB1064-R18M-XA	0.18	0.75(0.60)	60.0	30.0
MPIB1064-R36M-XA	0.36	1.60(1.40)	50.0	24.0
MPIB1065-R24M-XA	0.24	1.05(0.86)	60.0	37.0
MPIB1065-R33M-XA	0.33	1.60(1.40)	50.0	30.0

MOLDING POWER INDUCTORS

● **MPIB107** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1073-R12M-XA	0.12	0.70(0.60)	50.00	35.00
MPIB1074-R15M-XA	0.15	0.65(0.55)	75.00	55.00
MPIB1074-R22M-XA	0.22	0.82(0.71)	50.00	32.00
MPIB1074-R22M-XB	0.22	0.95(0.86)	50.00	32.00
MPIB1075-R10M-XA	0.10	0.70(0.60)	100.0	44.00
MPIB1075-R12M-XA	0.12	0.52(0.45)	100.00	45.00
MPIB1075-R12M-XB	0.12	0.70(0.60)	90.00	44.00
MPIB1075-R15M-XA	0.15	0.52(0.45)	85.00	42.00
MPIB1075-R15M-XB	0.15	0.70(0.60)	85.00	42.00
MPIB1075-R22M-XA	0.22	0.70(0.60)	60.00	35.00
MPIB1075-R22M-XB	0.22	1.05(0.91)	60.00	35.00
MPIB1075-R30M-XA	0.30	1.27(1.10)	50.00	30.00
MPIB1075-R33M-XA	0.33	1.65(1.45)	55.00	28.00
MPIB1075-R47M-XA	0.47	1.65(1.45)	50.00	25.00

MOLDING POWER INDUCTORS

● **MPIB108** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1084-R15M-XA	0.15	0.52(0.45)	75.00	45.00
MPIB1084-R15M-XB	0.15	0.80(0.62)	90.00	45.00
MPIB1084-R20M-XA	0.20	0.52(0.45)	70.00	45.00
MPIB1084-R22M-XA	0.22	0.80(0.62)	70.00	40.00
MPIB1085-R10M-XA	0.10	0.52(0.45)	80.00	45.00
MPIB1085-R15M-XA	0.15	0.52(0.45)	75.00	45.00
MPIB1085-R20M-XA	0.20	0.80(0.62)	75.00	45.00
MPIB1085-R22M-XA	0.22	0.80(0.62)	75.00	45.00
MPIB1085-R30M-XA	0.30	0.85(0.70)	75.00	45.00
MPIB1087-R42M-XA	0.42	0.86(0.75)	55.00	45.00
MPIB1087-R47M-XA	0.47	0.86(0.75)	50.00	45.00

MOLDING POWER INDUCTORS

● **MPIB117** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1174-R10M-XA	0.10	0.50(0.43)	120.00	40.00
MPIB1174-R15M-XA	0.15	0.50(0.43)	70.00	40.00
MPIB1174-R22M-XA	0.22	0.75(0.65)	60.00	30.00
MPIB1174-R33M-XA	0.33	1.21(1.05)	45.00	35.00
MPIB1175-R15M-XA	0.15	0.50(0.43)	75.00	40.00
MPIB1175-R22M-XA	0.22	0.70(0.60)	70.00	40.00
MPIB1175-R33M-XA	0.33	0.95(0.82)	60.00	35.00

MOLDING POWER INDUCTORS

● **MPIB1308** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB130830-R22M-XA	0.22	0.90(0.80)	50.00	35.00
MPIB130840-R10M-XA	0.10	0.50(0.40)	120.00	50.00
MPIB130840-R12M-XA	0.12	0.50(0.40)	100.00	45.00
MPIB130840-R15M-XA	0.15	0.60(0.50)	90.00	48.00
MPIB130840-R22M-XA	0.22	0.60(0.50)	80.00	45.00
MPIB130840-R30M-XA	0.30	0.95(0.83)	60.00	40.00
MPIB130840-R33M-XA	0.33	0.95(0.83)	60.00	35.00
MPIB130840-R47M-XA	0.47	1.40(1.15)	50.00	32.00
MPIB130850-R10M-XA	0.10	0.50(0.40)	130.00	50.00
MPIB130850-R15M-XA	0.15	0.50(0.40)	110.00	50.00
MPIB130850-R22M-XA	0.22	0.60(0.50)	100.00	45.00
MPIB130850-R33M-XA	0.33	0.75(0.65)	70.00	35.00
MPIB130850-R47M-XA	0.47	1.20(1.00)	60.00	30.00
MPIB130850-1R0M-XA	1.00	2.55(2.20)	33.00	23.00

MOLDING POWER INDUCTORS

● **MPIB168** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX.	TYP.	TYP.
MPIB1685-R21M-XA	0.21	0.60(0.52)	120.00	52.00
MPIB1685-R33M-XA	0.33	0.70(0.59)	100.00	48.00
MPIB1685-R47M-XA	0.47	1.00(0.82)	80.00	42.00
MPIB1685-R68M-XA	0.68	1.20(1.02)	70.00	40.00

MOLDING POWER INDUCTORS

● **MPIB107XD** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1075D-R10M-XA	0.10	0.45(0.36)	100.0	50.00
MPIB1075D-R12M-XA	0.12	0.45(0.36)	85.00	45.00
MPIB1075D-R15M-XA	0.15	0.45(0.36)	70.00	42.00
MPIB1075D-R20M-XA	0.20	0.60(0.50)	70.00	42.00
MPIB1076D-R12M-XA	0.12	0.50(0.40)	90.00	45.00
MPIB1076D-R15M-XA	0.15	0.50(0.40)	80.00	42.00

MOLDING POWER INDUCTORS

● **MPB127** TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1274-R12M-XA	0.12	0.52(0.47)	85.00	45
MPIB1274-R15M-XA	0.15	0.52(0.47)	75.00	45
MPIB1275-R12M-XA	0.12	0.52(0.47)	90.00	45
MPIB1275-R15M-XA	0.15	0.52(0.47)	80.00	45

MOLDING POWER INDUCTORS

● MPIB138 TYPE:

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX(TYP)	TYP.	TYP.
MPIB1384-R12M-XA	0.12	0.50(0.40)	100.00	50.00
MPIB1385-R12M-XA	0.12	0.50(0.40)	100.00	55.00
MPIB1385-R15M-XA	0.15	0.50(0.40)	90.00	50.00

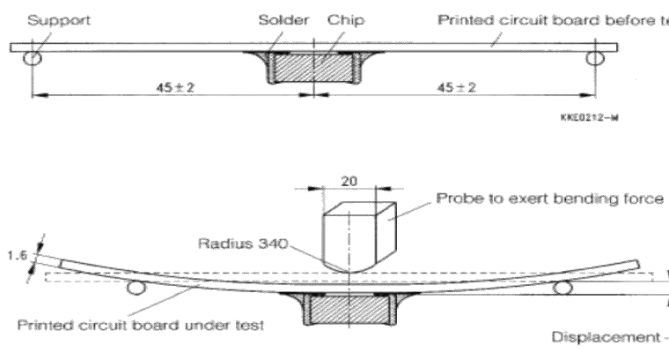
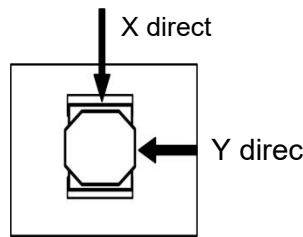
● Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 125 °C
3. Irms (A):DC current (A) that will cause an MPIBproximate ΔT of 40 °C
(reference ambient temperature is 25 °C)
4. Isat(A):DC current (A) that will cause L0 to drop MPIBproximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions.Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end MPIB plication.
6. Absolute maximum voltage 30V

Reliability Test

Item	Specification and Requirement	Test Method								
Solderability	1. No case deformation or change in MPIB pearance 2. New solder coverage More than 90%	1. Preheat: 155℃±5℃ , 2. 60S±2S 2.Tin: lead-free. 3. Temperature:245℃±5℃, flux 3.0S±0.5S.								
Mechanical shock	1. No case deformation or change in MPIB pearance 2. ΔL/Lo≦±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 MPIB pearance 2. ΔL/Lo≦±10%	1. The test samples shall be soldered to the board. Then it shall be submitted to below test conditions. <table><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 ± 10% Without distinct damage in MPIB pearance	1. First -55℃ for 30 minutes,last 125℃ 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 ± 10% Without distinct damage in MPIB pearance	1. Reflow 2 times, 2. 85℃,85%RH,1000 hours 3. Measured at room temperature after placing for 24±2hours								
Low temperature storage	Inductance change: Within ± 10% Without distinct damage in MPIB pearance	1. Temperature: -55 ± 2℃ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24±2 hours								

MOLDING POWER INDUCTORS

High temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in MPIB pearance	1. Temperature: $+125 \pm 2^\circ\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours
Board Flex	Inductance change: Within $\pm 10\%$ Without distinct damage in MPIB pearance	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 MPIB paratus shall consist of mechanical means to MPI ply a force which will bend the board (D) x = 2 mm minimum. 4. The duration of the MPI plied forces shall be 60 ± 5 sec. The force is to be MPI plied only once to the board. 
Terminal Strength	No removal or split of the termination or other defects shall occur.	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, 60S$\pm$1s, X、Y direct. 

● Recommended Soldering Technologies

(1) Re-flowing Profile

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

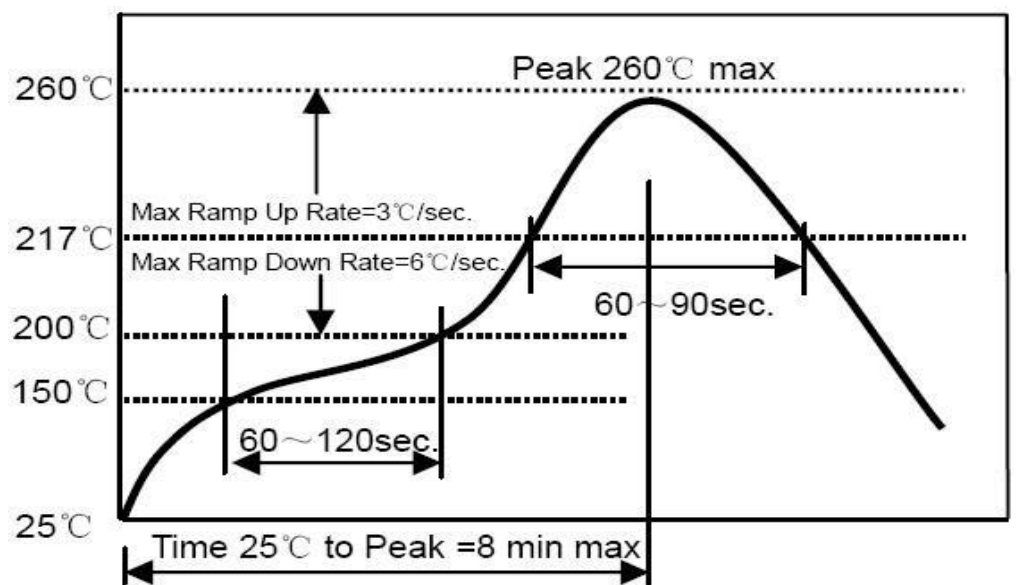
Allowed time above 217°C: 80~120sec.

Max temp: 260°C

Max time at max temp: 10sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



(2) Iron Soldering Profile

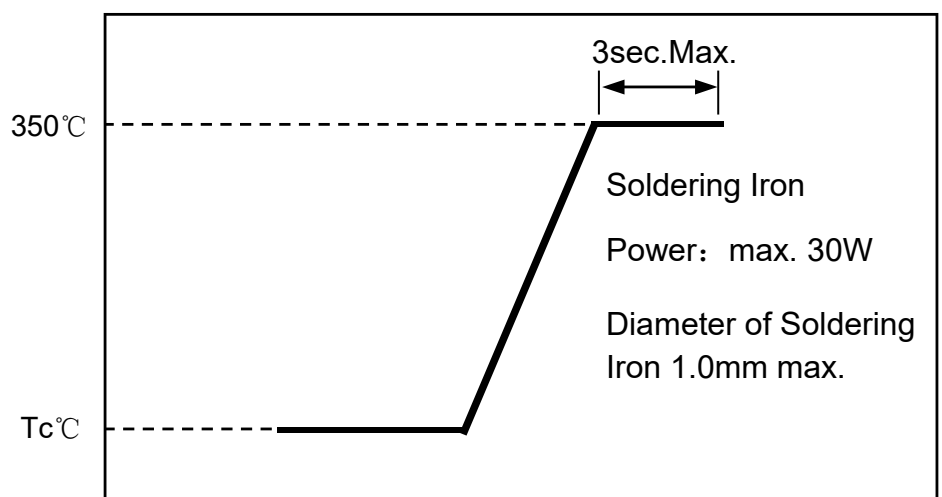
Iron soldering power: Max. 30W

Pre-heating: 150°C/60sec.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering



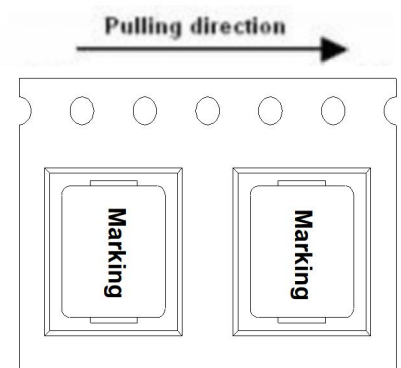
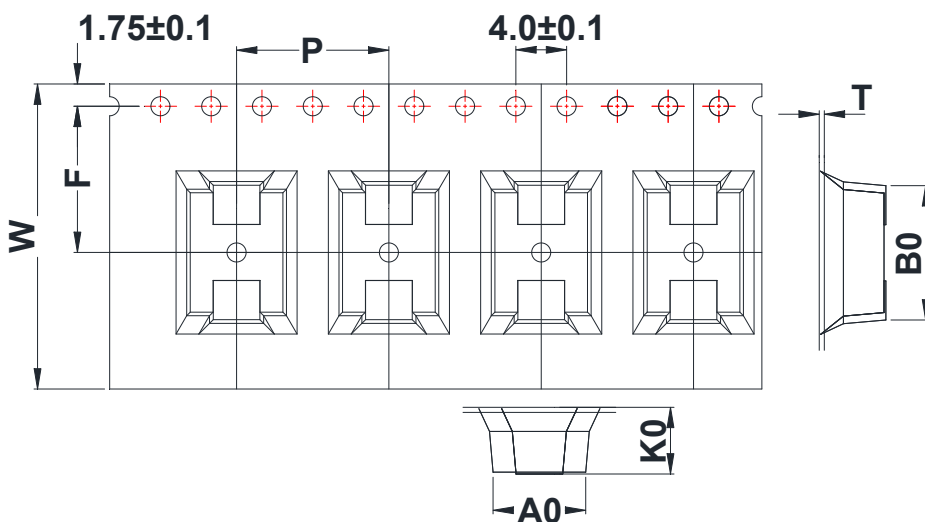
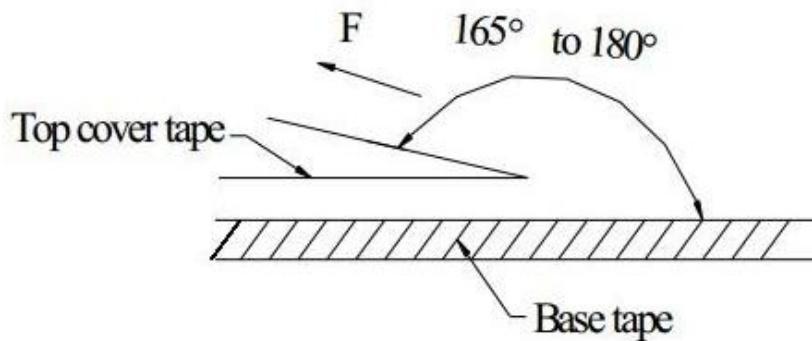
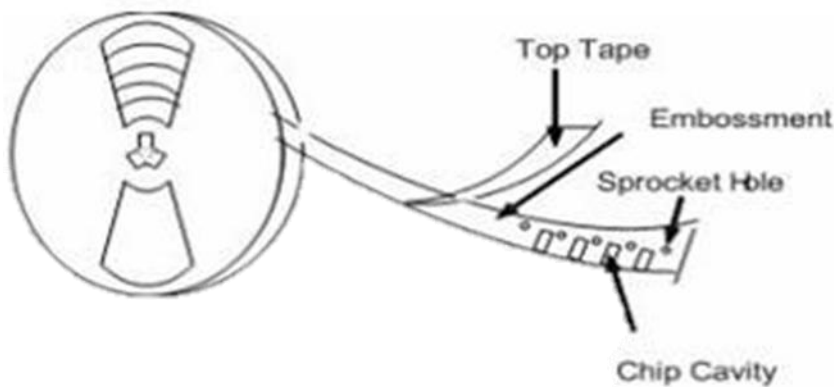
Packaging, Storage and Transportation

- Tape Packaging Dimensions (UNIT:mm)

Peel force of top cover tMPIBe

The peel speed shall be about 300mm/minute

The peel force of top cover tMPIBe shall be between 0.1 to 1.3 N



MOLDING POWER INDUCTORS

Type	Tape Packaging Dimension (mm)						
	W	P	F	A0	B0	K0	T
MPIB1063	24.00±0.30	12.00±0.10	11.50±0.10	5.95 TYP	11.10 TYP	3.05±0.10	0.35±0.05
MPIB1064	24.00±0.30	12.00±0.10	11.50±0.10	5.95 TYP	11.10 TYP	4.05±0.10	0.35±0.05
MPIB1065	24.00±0.30	12.00±0.10	11.50±0.10	5.95 TYP	11.10 TYP	5.05±0.10	0.35±0.05
MPIB1073	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	10.60 TYP	3.20±0.10	0.35±0.05
MPIB1074	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	10.60 TYP	4.20±0.10	0.40±0.05
MPIB1075	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	10.60 TYP	5.25±0.10	0.40±0.05
MPIB1084	24.00±0.30	12.00±0.10	11.50±0.10	8.20 TYP	12.10 TYP	4.30±0.10	0.40±0.05
MPIB1085	24.00±0.30	12.00±0.10	11.50±0.10	8.20 TYP	12.10 TYP	5.30±0.10	0.40±0.05
MPIB1087	24.00±0.30	12.00±0.10	11.50±0.10	8.20 TYP	12.10 TYP	7.20±0.10	0.40±0.05
MPIB1174	24.00±0.30	12.00±0.10	11.50±0.10	7.60 TYP	11.70 TYP	4.20±0.10	0.40±0.05
MPIB1175	24.00±0.30	12.00±0.10	11.50±0.10	7.60 TYP	11.70 TYP	5.20±0.10	0.40±0.05
MPIB130830	24.00±0.30	12.00±0.10	11.50±0.10	8.35 TYP	13.55 TYP	3.25±0.10	0.30±0.05
MPIB130840	24.00±0.30	12.00±0.10	11.50±0.10	8.35 TYP	13.55 TYP	4.30±0.10	0.35±0.05
MPIB130850	24.00±0.30	12.00±0.10	11.50±0.10	8.40 TYP	13.60 TYP	5.30±0.10	0.35±0.05
MPIB1685	32.00±0.30	16.00±0.10	14.20±0.10	9.10 TYP	17.60 TYP	5.40 TYP	0.40±0.10
MPIB1075D	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	10.60 TYP	5.25±0.10	0.40±0.05
MPIB1076D	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	10.60 TYP	6.25±0.10	0.40±0.05
MPIB1274	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	12.70 TYP	4.10±0.10	0.35±0.05
MPIB1275	24.00±0.30	12.00±0.10	11.50±0.10	7.30 TYP	12.70 TYP	5.10±0.10	0.35±0.05
MPIB1384	24.00±0.30	12.00±0.10	11.50±0.10	8.30±0.30	13.6±0.30	4.20±0.30	0.35±0.10
MPIB1385	24.00±0.30	12.00±0.10	11.50±0.10	8.30±0.30	13.6±0.30	5.20±0.30	0.35±0.10

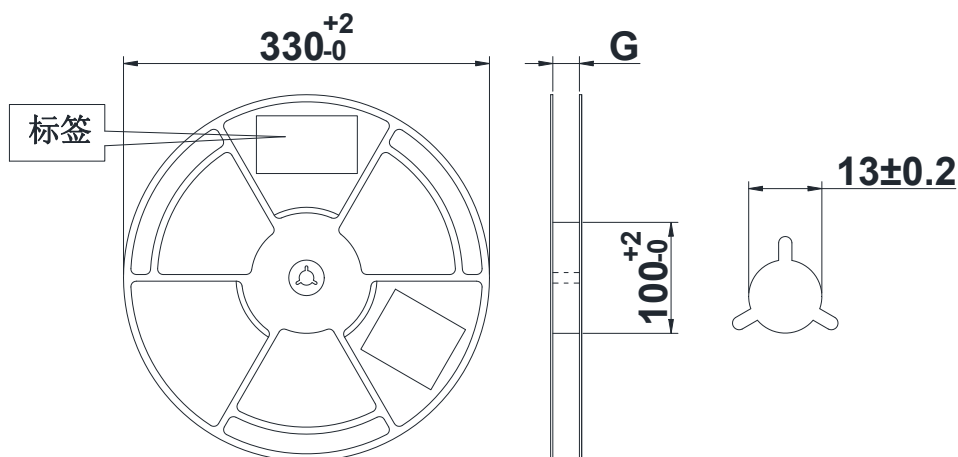
MOLDING POWER INDUCTORS

• Reel Dimensions (UNIT:mm)

Label

Label on the reel

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



Type	Reel	Qty./Size		Type	Reel	Qty./Size	
	G	pcs/reel			G	pcs/reel	
MPIB1063	24.5 ± 0.20	1000		MPIB130830	24.5 ± 0.20	1000	
MPIB1064	24.5 ± 0.20	1000		MPIB130840	24.5 ± 0.20	1000	
MPIB1065	24.5 ± 0.20	800		MPIB130850	24.5 ± 0.20	800	
MPIB1073	24.5 ± 0.20	1000		MPIB1685	32.5 ± 0.20	500	
MPIB1074	24.5 ± 0.20	800		MPIB1075D	24.5 ± 0.20	500	
MPIB1075	24.5 ± 0.20	500		MPIB1076D	24.5 ± 0.20	500	
MPIB1084	24.5 ± 0.20	1000		MPIB1274	24.5 ± 0.20	800	
MPIB1085	24.5 ± 0.20	800		MPIB1275	24.5 ± 0.20	800	
MPIB1087	24.5 ± 0.20	500		MPIB1384	24.5 ± 0.20	1000	
MPIB1174	24.5 ± 0.20	1000		MPIB1385	24.5 ± 0.20	800	
MPIB1175	24.5 ± 0.20	800					

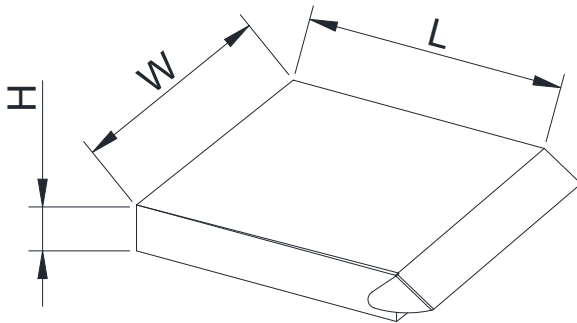
MOLDING POWER INDUCTORS

• TMPIBe Packaging Box Dimension (mm)

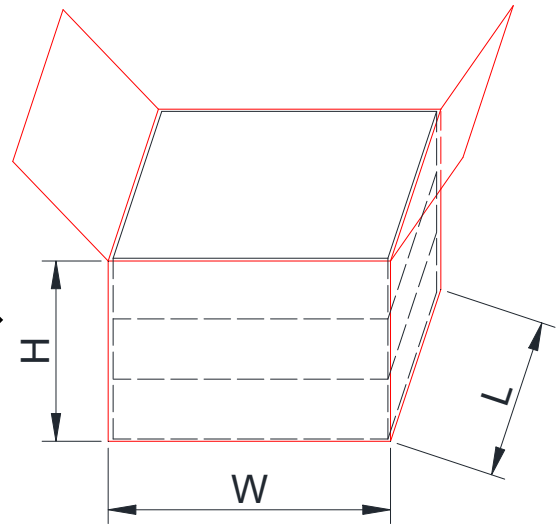
Label

Shipping Label

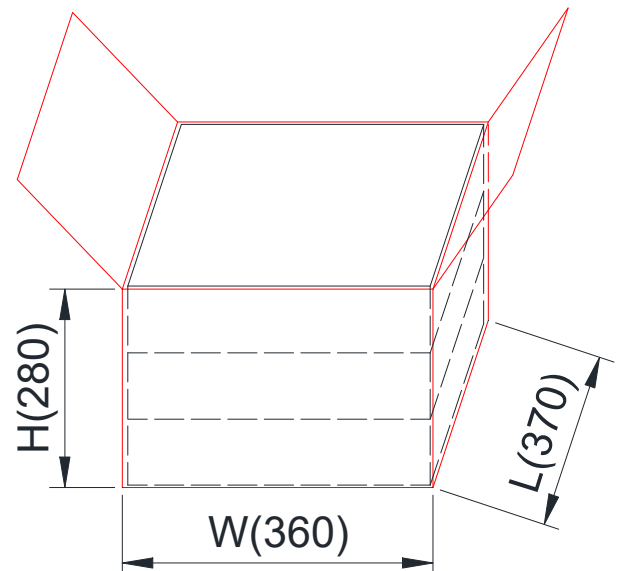
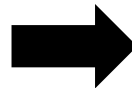
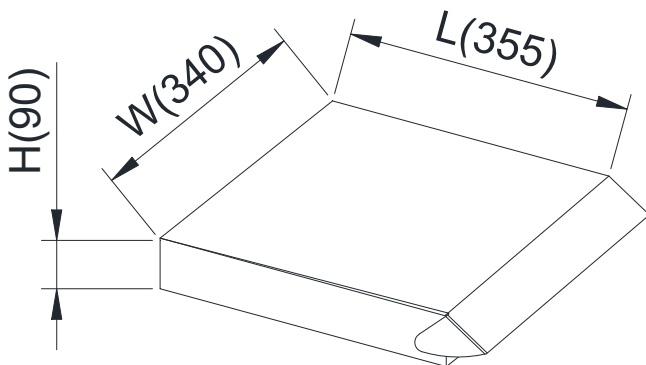
- Customer's part Number
- Manufacturer's part Number
- Quantity
- date code



2 Reel in Inner Small Box



3 Inner Box in outer Large Box



MOLDING POWER INDUCTORS

[illegible]