Molding Type High Curent Power Inductor / MPF Type (Flat Wire High Current)

.Features:

1. Flat wire winding which achieve high current and a low DCR.
2. High inductance, low magnetic loss & ERS, small parasitic capacitance.
3. Magnetically shielded & SMD type.
4. No thermal aging issues
5. Magnetically shielded

.Applications:

1. DC/DC Converters, Switch and servers, PCs and Laptops
2. VRM/VRD, Battery Powered devices and SSD modules

.Product Identification

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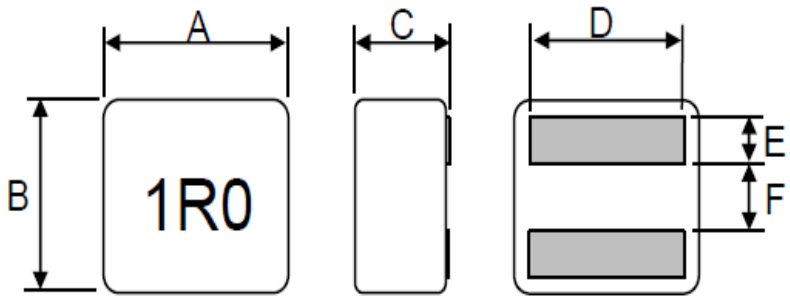
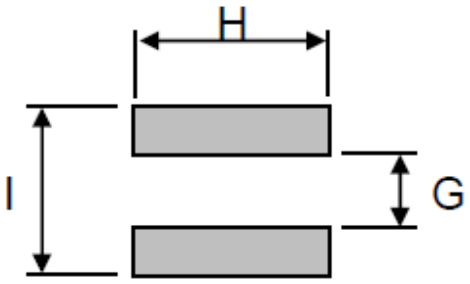
Series name	Dimensions (WxLxH)		Internal code
MPF	0420	4.1*4.1*1.9 mm	H=Alloy
	0520	5.5*5.3*1.9 mm	T= Carbonyl Iron
	0630	6.6*6.4*2.9mm	

Inductance		Tolerance	
R15	0.15uH	M	20%
1R0	1.0uH		
8R2	8.2uH		

.Shape and Dimension



.Recommended PCB Pattern



Dimensions(mm)

Type	A	B	C	D	E	F	G	H	I
MPF0420H	4.10 ± 0.2	4.10 ± 0.2	1.90 ± 0.2	3.40 ± 0.3	0.88 ± 0.3	1.60 ± 0.3	1.40 Ref	3.80 Ref	3.40 Ref
MPF0430H	4.10 ± 0.25	4.10 ± 0.25	2.80 ± 0.3	3.40 ± 0.3	0.88 ± 0.3	1.60 ± 0.3	1.40 Ref	3.80 Ref	3.40 Ref
MPF0520H	5.50 ± 0.2	5.30 ± 0.2	1.90 ± 0.2	4.30 ± 0.2	1.10 ± 0.3	2.30 ± 0.3	2.00 Ref	4.70 Ref	4.50 Ref
MPF0530H	5.50 ± 0.2	5.30 ± 0.2	2.90 ± 0.2	4.30 ± 0.2	1.10 ± 0.3	2.30 ± 0.3	2.50 Ref	4.70 Ref	4.50 Ref
MPF0630H (L≦1.2μH)	6.60 ± 0.2	6.40 ± 0.2	2.80 ± 0.2	See Remark	1.40 ± 0.3	2.60 ± 0.3	2.50 Ref	5.60 Ref	5.60 Ref
MPF0630H (L≧1.5μH)	6.60 ± 0.2	6.40 ± 0.2	2.90 ± 0.2	See Remark	1.40 ± 0.3	2.60 ± 0.3	2.50 Ref	5.60 Ref	5.60 Ref
MPF0650H	6.60 ± 0.2	6.40 ± 0.2	4.80 ± 0.2	See Remark	1.40 ± 0.3	2.60 ± 0.3	2.50 Ref	5.60 Ref	5.60 Ref
MPF0730H	7.80 ± 0.25	7.60 ± 0.2	2.90 ± 0.2	See Remark	1.75 ± 0.3	3.15 ± 0.3	2.80 Ref	7.20 Ref	7.40 Ref
MPF0770H	7.80 ± 0.25	7.60 ± 0.25	6.70 ± 0.3	See Remark	1.75 ± 0.3	3.15 ± 0.3	2.80 Ref	7.20 Ref	7.40 Ref
MPF1508H	16.5 ± 0.3	15.5 ± 0.3	7.70 ± 0.3	13.2 ± 0.5	3.2 ± 0.3	7.4 ± 0.5	6.0 Ref	15.0 Ref	15.0 Ref
MPF1510H	16.5 ± 0.3	15.5 ± 0.3	9.70 ± 0.3	13.2 ± 0.5	3.2 ± 0.3	7.4 ± 0.5	6.0 Ref	15.0 Ref	15.0 Ref

1. Operating Temp : .-40℃to+125℃ (Including temperature Rise)
2. Storage Temp / Humidity: 0℃ to 40℃ / 70% RH
3. Resistance to Soldering Heat: 260℃for 10sec

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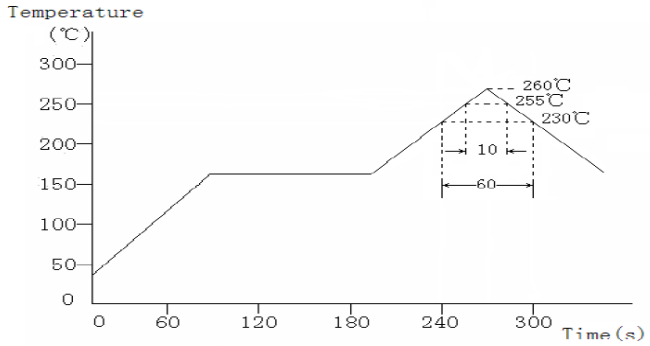
.Remarks

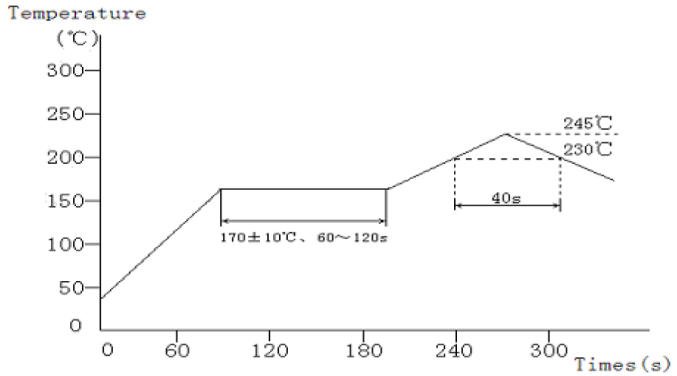
Series	D	Dimension
0630	5.00 ± 0.3	3R3 / 4R5 / 4R7
	5.05 ± 0.3	2R2
	5.10 ± 0.3	1R8
	5.15± 0.3	1R2 / 1R5
	5.20 ± 0.3	1R0
	5.30 ± 0.3	R18 / R56 / R68 / R33
0650	5.20 ± 0.3	8R2 / 6R8 / 5R6 / 4R7 / 4R3 / 3R3 / 2R2
	5.30 ± 0.3	1R8 / 1R5 / 1R2 / 1R0 / R82
0730	6.60 ± 0.3	1R0 / 1R5
	6.20 ± 0.3	2R2 / 2R7 / 3R3 / 4R7/ 5R6 / 6R8 / 8R2
0770	6.50 ± 0.3	6R8
	6.70 ± 0.3	3R3 / 4R7

. Reflow Soldering Heat Endurance



No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.
Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.
The reflow test profile may vary with the testing instruments.

. Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

Molding Type High Curent Power Inductor / MPF Type (Flat Wire High Current)

. Electrical Characteristics MPF0420H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0420H-R10M	0.10	20%	38.0	18.0	2.42	100K / 0.1
MPF0420H-R22M	0.22	20%	18.8	16.8	4.60	100K / 0.1
MPF0420H-R36M	0.36	20%	15.0	14.5	6.30	100K / 0.1
MPF0420H-R40M	0.40	20%	13.5	14.0	7.73	100K / 0.1
MPF0420H-R47M	0.47	20%	13.0	12.5	8.58	100K / 0.1
MPF0420H-R56M	0.56	20%	12.6	12.0	9.30	100K / 0.1
MPF0420H-R60M	0.60	20%	12.3	11.7	9.52	100K / 0.1
MPF0420H-R72M	0.72	20%	10.6	10.5	11.60	100K / 0.1
MPF0420H-1R0M	1.00	20%	8.8	9.6	14.60	100K / 0.1
MPF0420H-1R2M	1.20	20%	7.8	9.0	17.60	100K / 0.1
MPF0420H-1R5M	1.50	20%	7.4	7.6	23.50	100K / 0.1
MPF0420H-1R8M	1.80	20%	7.0	7.0	28.00	100K / 0.1
MPF0420H-2R2M	2.20	20%	6.0	5.6	38.70	100K / 0.1

. Electrical Characteristics MPF0430H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0430H-R75M	0.75	20%	9.0	10.0	10.80	100K / 0.1
MPF0430H-3R3M	3.30	20%	5.5	6.6	28.60	100K / 0.1
MPF0430H-4R7M	4.70	20%	4.5	5.1	44.10	100K / 0.1
MPF0430H-6R8M	6.80	20%	3.6	3.9	74.10	100K / 0.1

. Electrical Characteristics MPF0520H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0520H-R15M	0.10	20%	27.0	18.8	4.60	100K / 0.1
MPF0520H-R16M	0.16	20%	27.0	18.8	4.60	100K / 0.1
MPF0520H-R33M	0.33	20%	24.0	14.4	7.00	100K / 0.1
MPF0520H-R47M	0.47	20%	20.0	14.1	8.10	100K / 0.1
MPF0520H-R56M	0.56	20%	16.0	13.9	9.50	100K / 0.1
MPF0520H-R68M	0.68	20%	14.0	13.4	10.20	100K / 0.1
MPF0520H-R80M	0.80	20%	13.5	13.0	11.80	100K / 0.1
MPF0520H-R82M	0.82	20%	13.0	12.0	12.70	100K / 0.1
MPF0520H-1R0M	1.00	20%	12.8	10.5	13.80	100K / 0.1
MPF0520H-1R2M	1.20	20%	12.2	9.4	16.30	100K / 0.1
MPF0520H-1R5M	1.50	20%	11.7	8.8	18.70	100K / 0.1

. Electrical Characteristics MPF0530H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0530H-R15M	0.15	20%	32.5	22.2	2.31	100K / 0.1
MPF0530H-R16M	0.16	20%	32.0	22.2	2.33	100K / 0.1
MPF0530H-R33M	0.33	20%	26.0	19.2	3.52	100K / 0.1

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Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0530H-R47M	0.47	20%	24.0	18.4	4.13	100K / 0.1
MPF0530H-R56M	0.56	20%	20.2	17.7	4.52	100K / 0.1
MPF0530H-R60M	0.60	20%	20.0	17.7	4.52	100K / 0.1
MPF0530H-R80M	0.80	20%	18.0	13.1	5.65	100K / 0.1
MPF0530H-R82M	0.82	20%	17.6	12.9	5.78	100K / 0.1
MPF0530H-1R0M	1.00	20%	14.3	12.2	7.60	100K / 0.1
MPF0530H-1R2M	1.20	20%	13.5	11.0	9.70	100K / 0.1
MPF0530H-1R5M	1.50	20%	12.5	10.5	11.20	100K / 0.1
MPF0530H-1R8M	1.80	20%	11.3	10.1	12.70	100K / 0.1
MPF0530H-2R2M	2.20	20%	9.0	9.7	14.50	100K / 0.1
MPF0530H-3R3M	3.30	20%	8.7	8.1	23.10	100K / 0.1
MPF0530H-4R7M	4.70	20%	7.0	5.9	36.30	100K / 0.1

. Electrical Characteristics MPF0550H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0550H-5R6M	5.60	20%	7.2	7.2	24.20	100K / 0.1
MPF0550H-6R8M	6.80	20%	6.6	6.4	28.60	100K / 0.1
MPF0550H-8R2M	8.20	20%	6.1	6.1	32.50	100K / 0.1
MPF0550H-100M	10.00	20%	5.4	5.0	43.00	100K / 0.1

. Electrical Characteristics MPF0630H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0630H-R18M	0.18	20%	39.0	32.0	1.75	100K / 0.1
MPF0630H-R33M	0.33	20%	30.0	25.0	2.50	100K / 0.1
MPF0630H-R56M	0.56	20%	29.0	22.0	3.31	100K / 0.1
MPF0630H-R68M	0.68	20%	25.0	20.0	5.17	100K / 0.1
MPF0630H-1R0M	1.00	20%	23.0	18.0	6.05	100K / 0.1
MPF0630H-1R2M	1.20	20%	22.0	16.0	7.40	100K / 0.1
MPF0630H-1R5M	1.50	20%	20.0	15.0	9.13	100K / 0.1
MPF0630H-1R8M	1.80	20%	18.2	14.0	10.20	100K / 0.1
MPF0630H-2R2M	2.20	20%	15.9	10.0	12.20	100K / 0.1
MPF0630H-3R3M	3.30	20%	12.2	8.0	20.80	100K / 0.1
MPF0630H-4R5M	4.50	20%	10.0	7.0	25.30	100K / 0.1
MPF0630H-4R7M	4.70	20%	9.0	6.0	26.00	100K / 0.1

. Electrical Characteristics MPF0650H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0650H-R82M	0.82	20%	20.0	21.0	4.18	100K / 0.1
MPF0650H-1R0M	1.00	20%	18.0	20.0	4.52	100K / 0.1
MPF0650H-1R2M	1.20	20%	16.0	18.0	5.83	100K / 0.1
MPF0650H-1R5M	1.50	20%	14.5	17.0	6.30	100K / 0.1
MPF0650H-1R8M	1.80	20%	13.5	16.0	7.10	100K / 0.1
MPF0650H-2R2M	2.20	20%	12.0	13.0	8.50	100K / 0.1
MPF0650H-3R3M	3.30	20%	10.0	11.0	12.50	100K / 0.1

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Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0650H-4R3M	4.30	20%	8.5	9.0	16.20	100K / 0.1
MPF0650H-4R7M	4.70	20%	8.0	8.5	18.40	100K / 0.1
MPF0650H-5R6M	5.60	20%	8.3	7.0	22.00	100K / 0.1
MPF0650H-6R8M	6.80	20%	7.0	6.6	25.40	100K / 0.1
MPF0650H-8R2M	8.20	20%	6.8	6.2	31.50	100K / 0.1

. Electrical Characteristics MPF0660H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0660H-4R7M	4.70	20%	10.5	11.0	14.40	100K / 0.1
MPF0660H-5R6M	5.60	20%	9.9	10.0	15.90	100K / 0.1
MPF0660H-6R8M	6.80	20%	9.2	9.0	20.80	100K / 0.1
MPF0660H-8R2M	8.20	20%	8.4	8.0	26.40	100K / 0.1
MPF0660H-100M	10.00	20%	7.6	7.0	29.82	100K / 0.1
MPF0660H-150M	15.00	20%	5.8	6.0	43.75	100K / 0.1
MPF0660H-220M	22.00	20%	5.6	5.0	60.63	100K / 0.1

. Electrical Characteristics MPF0730H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0730H-1R0M	1.20	20%	28.0	21.8	5.00	100K / 0.1
MPF0730H-1R5M	1.50	20%	23.5	15.3	8.25	100K / 0.1
MPF0730H-2R2M	2.20	20%	17.0	13.0	13.70	100K / 0.1
MPF0730H-2R7M	2.70	20%	13.5	11.4	15.40	100K / 0.1
MPF0730H-3R3M	3.30	20%	13.0	10.0	18.00	100K / 0.1
MPF0730H-4R7M	4.70	20%	12.2	9.0	26.70	100K / 0.1
MPF0730H-5R6M	5.60	20%	11.5	7.3	33.20	100K / 0.1
MPF0730H-6R8M	6.80	20%	11.0	6.8	42.50	100K / 0.1
MPF0730H-8R2M	8.20	20%	9.0	5.9	48.73	100K / 0.1

. Electrical Characteristics MPF0770H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF0770H-3R3M	3.30	20%	19.4	15.1	9.42	100K / 0.1
MPF0770H-4R7M	4.70	20%	15.2	13.6	14.26	100K / 0.1
MPF0770H-6R8M	6.80	20%	12.8	9.2	19.60	100K / 0.1

. Electrical Characteristics MPF1508H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF1508H-2R0M	2.00	20%	52.0	40.0	2.20	100K / 0.1
MPF1508H-2R2M	2.20	20%	49.0	37.0	2.50	100K / 0.1
MPF1508H-3R0M	3.00	20%	41.0	34.5	3.00	100K / 0.1
MPF1508H-4R2M	4.20	20%	33.0	27.0	4.70	100K / 0.1
MPF1508H-4R7M	4.70	20%	32.0	26.5	5.20	100K / 0.1
MPF1508H-5R3M	5.30	20%	31.0	26.0	5.30	100K / 0.1

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Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF1508H-6R2M	6.20	20%	31.0	23.0	6.50	100K / 0.1
MPF1508H-7R2M	7.20	20%	29.0	21.0	7.20	100K / 0.1
MPF1508H-8R2M	8.20	20%	25.0	19.0	7.90	100K / 0.1

. Electrical Characteristics MPF1510H Type

Part No.	Inductance (uH)	Tolerance (±%)	Isat (Amp) Typ.	Irms (Amp) Typ.	DCR (mΩ) Max.	Test Frequency (Hz / V)
MPF1510H-4R7M	4.70	20%	39.0	29.0	3.80	100K / 0.1
MPF1510H-5R6M	5.60	20%	37.0	28.0	4.20	100K / 0.1
MPF1510H-6R8M	6.80	20%	36.0	26.0	4.60	100K / 0.1
MPF1510H-8R2M	8.20	20%	30.0	24.0	7.20	100K / 0.1
MPF1510H-100M	10.00	20%	26.5	22.0	8.60	100K / 0.1
MPF1510H-150M	15.00	20%	23.0	18.0	11.50	100K / 0.1
MPF1510H-220M	22.00	20%	18.7	14.0	15.80	100K / 0.1
MPF1510H-330M	33.00	20%	16.7	12.0	20.00	100K / 0.1

NOTE:

1. All test data is referenced to 25℃ ambient.
2. Irms: DC current(A) that will cause an approximate △T of 40℃.
3. Isat: DC current(A) that will cause Lo to drop approximate 30%.

Molding Type High Curent Power Inductor / MPF Type (Flat Wire High Current)

. Reliability and Test Conditions(可靠性測試條件)

1. Mechanical Reliablilty

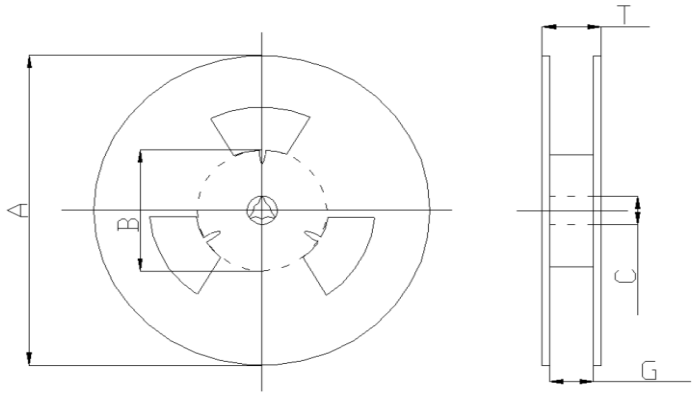
Item	Conditions	Specification
Solderability	Solder heat proof: Preheating: 180 ±10℃ 90 seconds Soldering: 260 ±5℃ for 10 ±1 sec	The surface of terminal/pin tested shall be covered with new solder by 95%
Shock	Drop down with 981m/s2 (100G) shock Attitude upon a rubber block method shock testing machinem, 3 tests	Inductance change within ± 5% Without mechanical damage.
Vibration	Vibration frequency: 10Hz to 55Hz to 10Hz 60, seconds cycle Vibration time: 2 hours	Inductance change within ± 5% Without mechanical damage.

2. Endurance Reliablilty

Thermal Shock	-55℃, mins) -> room temp. (5 mins)→ 125℃, (30 mins) -> room temp. (5 mins) 100 cycles	Inductance change within ± 5% Without mechanical damage.
Heat Resistance	Apply IDC current @ 85℃ ambient Duration: 1000 hrs	Inductance change within ± 5% Without mechanical damage.
Humidity Resistance	Apply IDC current @ 60℃ ambient Humidity: 90~95% Duration: 1000 hrs	Inductance change within ± 5% Without mechanical damage.
Low Temp Storing	Storing Temp. -55 ±2 ℃ for total 1,000 +4/-0 hours	Inductance change within ± 5% Without mechanical damage.
High Temp. Storing	Storing Temp. 125 ±2 ℃ for total 1,000 +4/-0 hours	Inductance change within ± 5% Without mechanical damage.

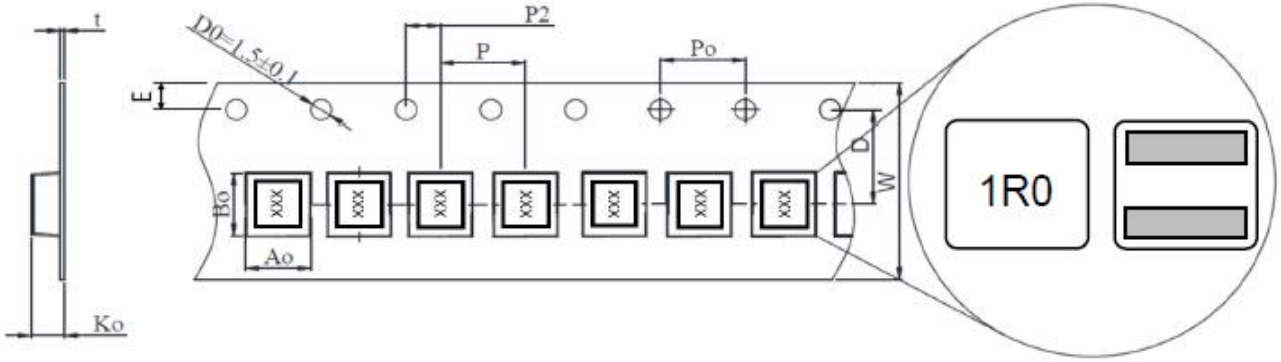
Molding Type High Curent Power Inductor / MPF Type (Flat Wire High Current

.Reel Dimension(m/m)



TYPE	Dimensions in (mm)					Reel Packing Unit
	A	B	C	G	T	PCS / REEL
MPF0420H	330	100	13	12.5	14.5	3000
MPF0520H	330	100	13	12.5	14.5	3000
MPF0530H	330	100	13	16.5	20.4	2000
MPF0630H	330	100	13	16.5	20.4	1000
MPF0730H	330	100	13	16.5	20.4	1000

.Taping Dimension(m/m)



TYPE	Dimensions in (mm)								
	W	A0	B0	K0	D	D0	E	P	P0
MPF0420H	12.0	4.4	4.6	2.3	5.5	1.5	1.8	8.0	4.0
MPF0520H	12.0	5.7	6.0	2.3	5.5	1.5	1.8	8.0	4.0
MPF0530H	16.0	5.7	6.0	3.3	7.5	1.5	1.8	8.0	4.0
MPF0630H	16.0	6.8	7.1	3.3	7.5	1.5	1.8	8.0	4.0
MPF0730H	16.0	6.8	7.1	3.3	7.5	1.5	1.8	12.0	4.0