

High Current Low DCR Molded Power Inductor

MAF06 Series

FEATURES AND APPLICATIONS

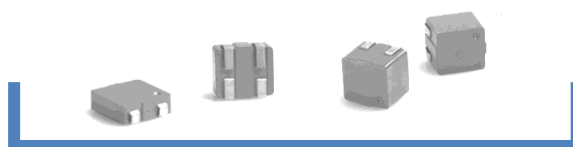
Laird MAF series high current power inductors improve performance, reliability and power efficiency. A unique design structure benefits automotive and general electronics designs. Products feature extremely low DCR with greater efficiency and enable a large current in a small size. Inductors are of magnetic shielding and molded construction and perform in operating temperatures ranging from -55°C~+155°C including self-heating rise in temperature.

FEATURES

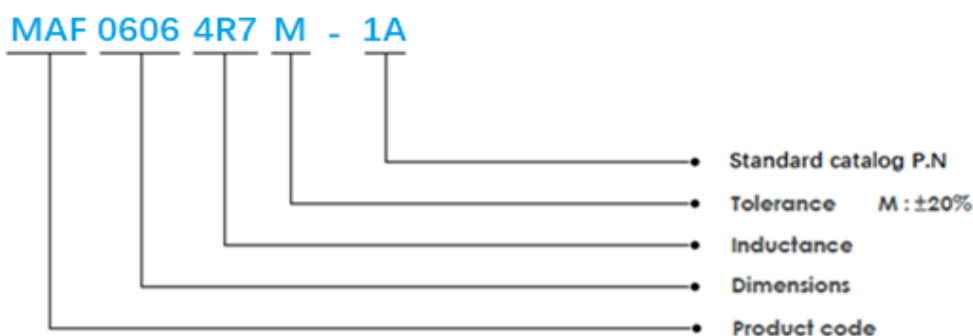
- ◆ High rated current and soft saturation realized by optimized coil and high performance powder.
- ◆ Molded with metal composite and self-shielded construction.
- ◆ High reliability with AEC-Q200 compliance.
- ◆ Extreme low DCR and high efficiency.

APPLICATIONS

- ◆ Automotive ECU Power lines, ADAS power lines.
- ◆ General DCDC power lines for Telecom, Datacom and Industrial.

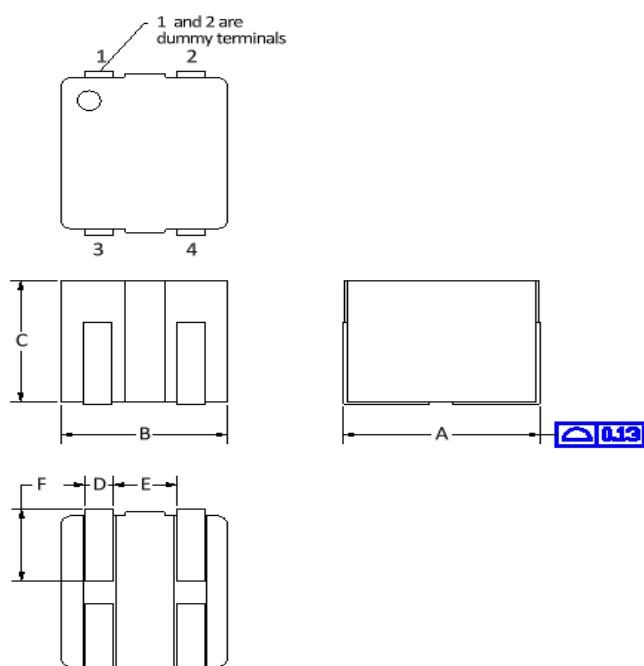


PART NUMBER EXPLANATION

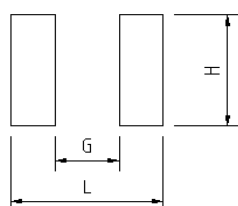


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1. DIMENSIONS



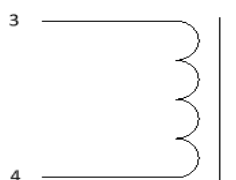
SIZE	A	B	C	D	E	F
MAF0603	7.7±0.5	7.1±0.3	3.1±0.3	1.2±0.2	2.7±0.2	3.0±0.3
MAF0606	7.7±0.5	7.1±0.3	6.1±0.3	1.2±0.2	2.7±0.2	3.0±0.3



L	G	H
5.5 ref	2.6 ref	5.7 ref

Recommended layout

2. EQUIVALENT CIRCUIT



3.SPECIFICATION

Part number	Inductance [M] (uH)	Irms(A) Typ	*Irms(A) Typ	Isat(A) Typ	DCR(mΩ) Typ	DCR(mΩ) [M] Max
MAF06031R0M-1A	1.0±20%	16.00	18.00	20.00	5.00	6.00
MAF06032R2M-1A	2.2±20%	9.00	10.50	14.00	12.50	14.00
MAF06033R3M-1A	3.3±20%	7.00	8.00	12.00	19.80	22.00
MAF06061R0M-1A	1.0±20%	18.00	19.00	20.00	4.00	5.50
MAF06062R2M-1A	2.2±20%	11.00	12.00	14.00	6.30	8.40
MAF06064R7M-1A	4.7±20%	9.80	11.50	10.00	11.70	14.00
MAF06066R8M-1A	6.8±20%	7.80	9.00	9.00	17.30	20.40
MAF0606100M-1A	10.0±20%	6.00	7.30	7.30	27.80	29.90
MAF0606150M-1A	15.0±20%	5.00	6.00	5.60	40.10	43.50

ELECTRICAL SPECIFICATIONS

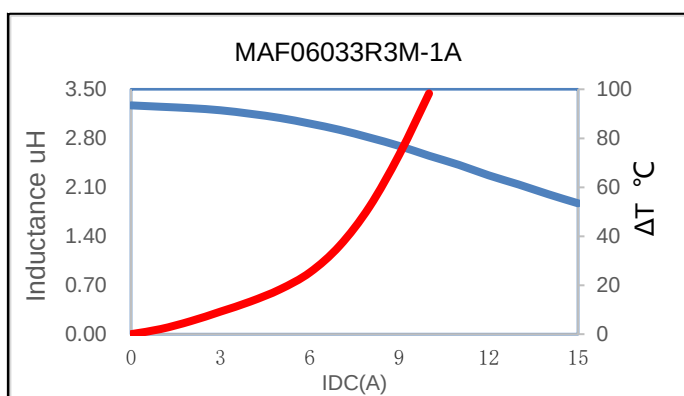
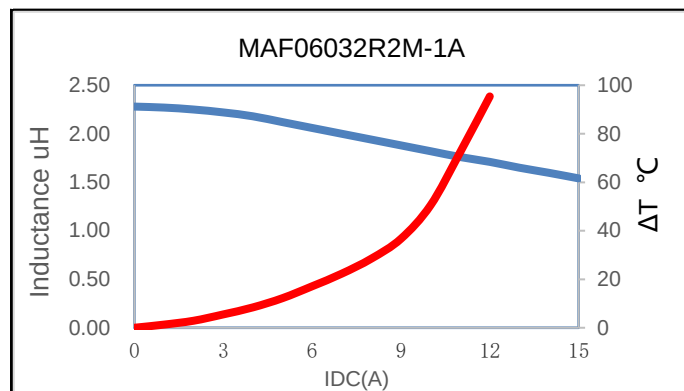
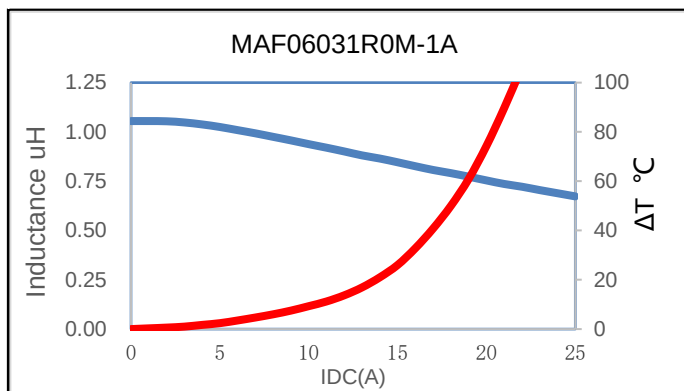
- ◆ [M] Significant Characteristic.
- ◆ All test data is referenced to 25°C ambient.
- ◆ Inductance tested at 100KHz, 0.25V.
- ◆ DC current (Irms) that will cause an approximate ΔT of 40 °C.
- ◆ *DC current testing was performed on 0.75 inch wide × 0.25 inch thick copper traces in still air, the temperature rise is approximately 40°C.
- ◆ DC current (Isat) that will cause inductance to drop approximately 30 %.
- ◆ Operating temperature range: -55°C~+155°C (including self-heating temperature rise).

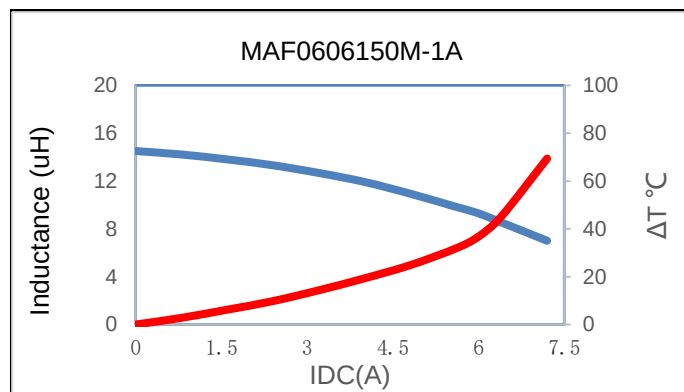
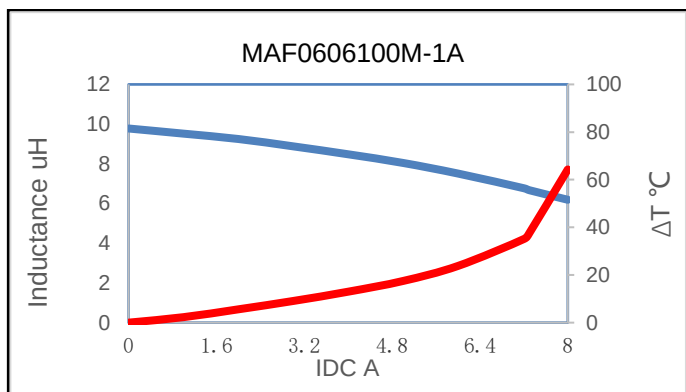
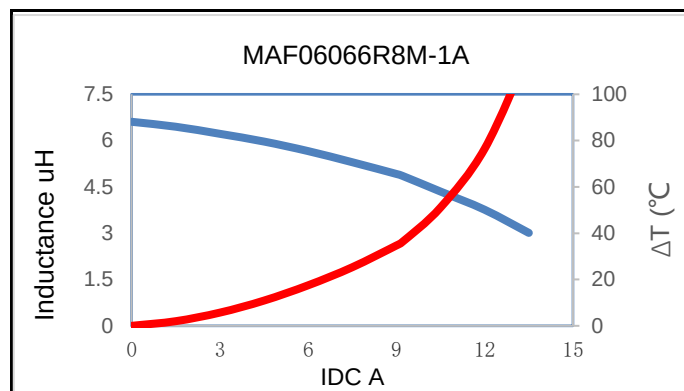
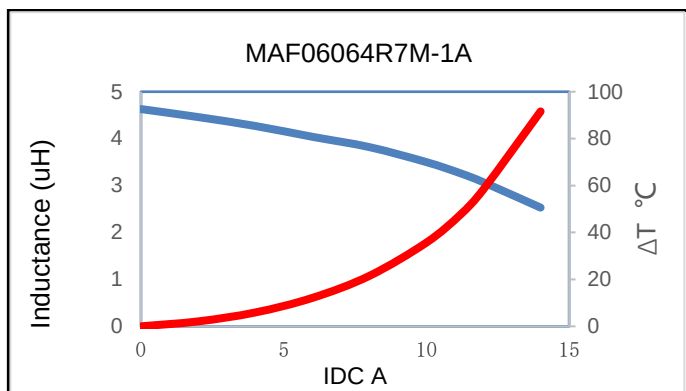
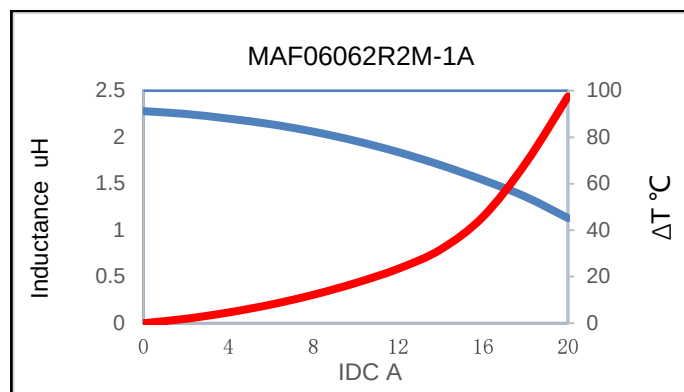
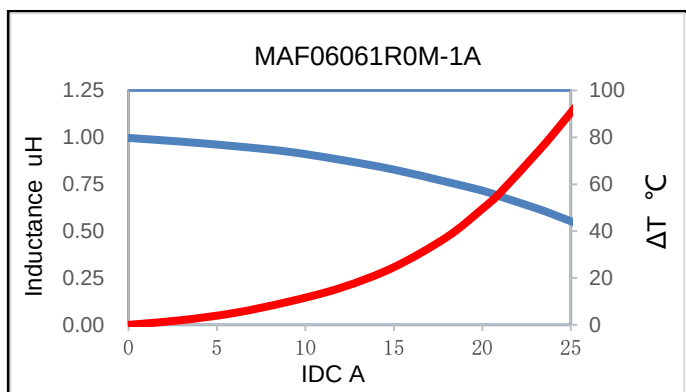
Note:

Heat Rated Current (Irms) is tested on a typical PCB and apply a constant current in still air. The temperature rise is dependent on the application system condition including PCB PAD pattern, trace width and thickness and adjacent components etc. It's suggested to verify the temperature rise of the component under the real operation application conditions.

Cleaning process: If this power choke is dipped in the cleaning agent, such as toluene, xylene, ketone, and ether system, there is a possibility that the performance decreases greatly. The high power ultrasonic washing may damage the choke body. Please contact us if you need the cleaning via the above agents or ultrasonic washing.

4. CHARACTERISTICS CURVES





5. SOLDERING

Mildly activated rosin fluxes are preferred.

Recommended temperature profiles for re - flow soldering in Figure 1 .

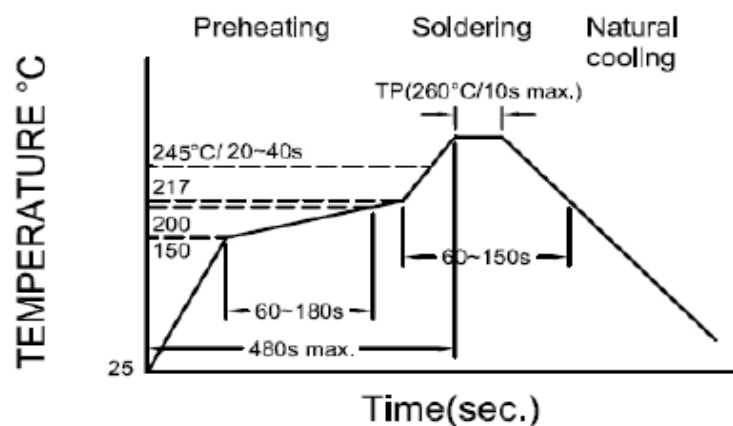
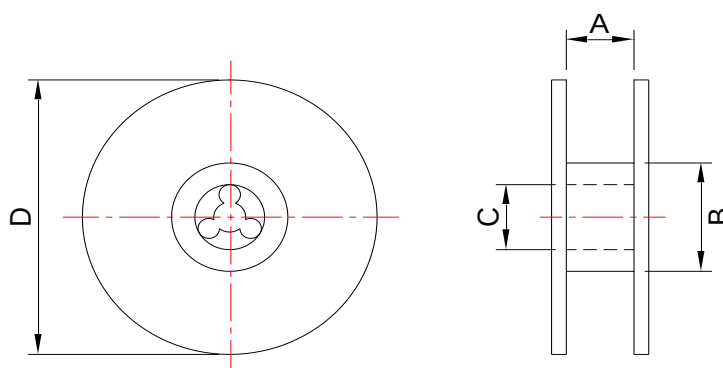


Figure 1. : Re-flow Soldering time
3 times Max.

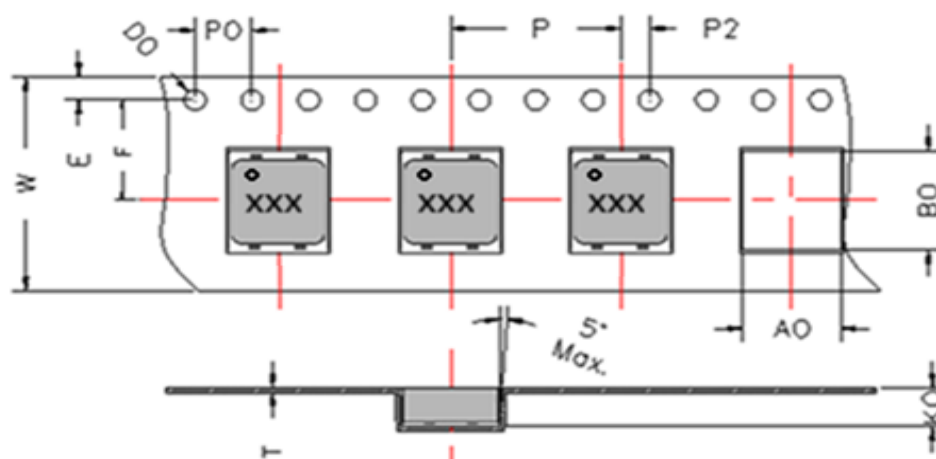
6. PACKAGING

6-1 Reel Dimension



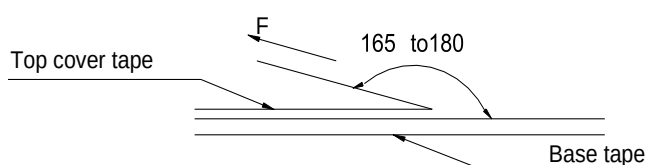
Type	A(mm)	B(mm)	C(mm)	D(mm)
13'x16	16.4+2/-0	100 ± 2	13+0.5/-0.2	330

6-2 Tape Dimension



SIZE	W	E	F	P	A0	B0	P2	PO	K0	DO	t
0603	16.0±0.3	1.75±0.1	7.50±0.1	12.00±0.1	7.6±0.1	8.6±0.1	2.0±0.1	4.0±0.1	3.3±0.1	1.5Ref.	0.35±0.05
0606	16.0±0.3	1.75±0.1	7.50±0.1	12.00±0.1	7.6±0.1	8.6±0.1	2.0±0.1	4.0±0.1	6.3±0.1	1.5Ref.	0.35±0.05

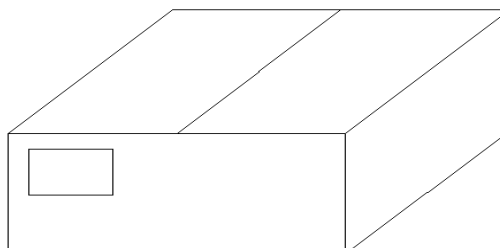
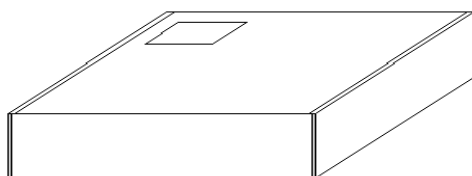
6-3 Tearing Off Force



The force required to tear off the concave tape is 10 to 130 grams in the direction of the arrow under the left condition.

Room Temp (°C)	Room Humidity (%)	Room atm (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300.0

6-4 Inner box and outer box



Packaging Quantity

SIZE	Reel	Inner box	Outer box	Unit Weight	Loading height	
MAF0603	1000pcs	2000pcs	4000pcs	0.00120Kg	<1.5m	≤ 5 Storey
MAF0606	750pcs	1500pcs	3000pcs	0.00181Kg	<1.5m	≤ 5 Storey

7. STORAGE CONDITIONS

7-1. To maintain the solderability of terminal electrodes:

Inductors are allowed twelve (12) months from date of packing for product stored in unopened, original packaging. Once the original packaging is opened the shelf life is reduced to three months (or the remainder of the 12 months if opened after 9 months).

Storage conditions: 25°C±10°C. Humidity: 30%-70%.

The packaging material should be kept where no chlorine or sulfur exists in the air.

Recommendations for products exceeding storage time: check solderability, electrical performance and product appearance.

Moisture Sensitivity Level(MSL): L1.

7-2. Transportation:

Products should be -handled with care to avoid damage or contamination from perspiration and skin oils.

Vacuum pick up is strongly recommended for individual components.

Bulk handling should ensure that abrasion and mechanical shock are minimized.