High Current, Power Inductors

FAU0630-XXXMT Power Choke

RoHS compliant



Description

- AEC-Q200 qualified
- Halogen Free
- 155°C maximum total temperature operation
- 7.3x6.8x 3.0mm maximum surface mount package
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- RoHS compliant

Applications

Engine and Powertrain Systems

- Electric pumps, motor control and auxiliaries
- Powertrain control module (PCU)
- Engine Control unit (ECU)
- Transmission Control Unit (TCU)

Body electronics

- Central body control module
- Vehicle access control system
- Headlamps, tail lamps and interior lighting
- Heating ventilation and air conditioning controllers(HVAC)
- Doors, window lift and seat control

Chassis and safety electronics

- Airbag control unit
- Electronic stability control system (ESC)

Driver assistance systems

- Adaptive cruise control (ACC)
- Automatic parking control
- Collision avoidance system
- Car black box system

Environmental Data

- Storage temperature range: -55°C to +155 °C
- Operating temperature range: -55°C to +155°C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Description		
FAU0630-1R0MT	1.0μH	±20 %
Model	Inductance Value	Inductance Tolerance

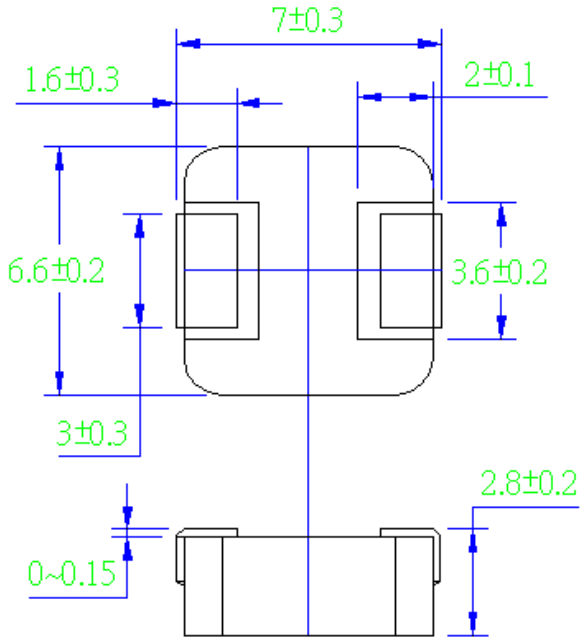
Global Part Number					
F A U	0 6 3 0	1 R 0	M	T	
Automotive Series	Dimensions	Inductance Value	Tol.	Tape carrier Package	

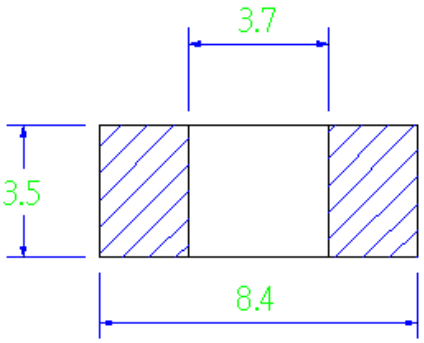
Part No.	Inductance	DC Resistance		Heating Rating Current	Saturation Current
	L0 (μH)	DCR (mΩ)		Idc (A)	Isat (A)
	±20 %, 100 kHz, 1V	TYP.	MAX.	TYP.	TYP.
FAU0630-R10MT	0.1	0.63	0.72	33.0	70.0
FAU0630-R15MT	0.15	1.03	1.18	24.0	36.0
FAU0630-R33MT	0.33	2.9	3.3	21.5	25.0
FAU0630-R47MT	0.47	3.7	4.3	15.0	20.0
FAU0630-R56MT	0.56	3.8	4.4	14.5	15.0
FAU0630-R68MT	0.68	4.8	5.5	14.0	14.5
FAU0630-R82MT	0.82	5.5	6.5	13.5	14.0
FAU0630-1R0MT	1.0	6.5	7.5	13.0	13.5
FAU0630-1R2MT	1.2	8.5	10.0	12.5	13.0
FAU0630-1R5MT	1.5	9.5	11.0	11.0	11.5
FAU0630-2R2MT	2.2	12.5	14.5	9.5	9.5
FAU0630-3R3MT	3.3	24.5	28.0	8.5	9.0
FAU0630-4R7MT	4.7	40.0	46.5	6.2	7.5
FAU0630-6R8MT	6.8	54.0	62.0	5.0	7.0
FAU0630-8R2MT	8.2	58.0	66.5	4.5	5.6
FAU0630-100MT	10.0	65.0	75.0	4.1	5.0
FAU0630-150MT	15.0	96.0	110.5	3.5	4.0
FAU0630-220MT	22.0	135.0	155.0	2.5	3.0
FAU0630-330MT	33.0	200.0	230.0	2.1	2.8

Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 155 °C
3. Idc(A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 155 °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 application.

•Dimensions-mm





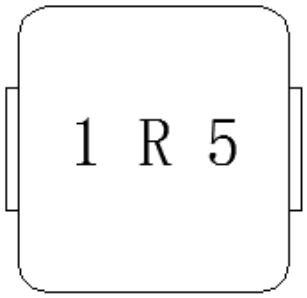
Recommend Land Pattern Dimensions

•Marking

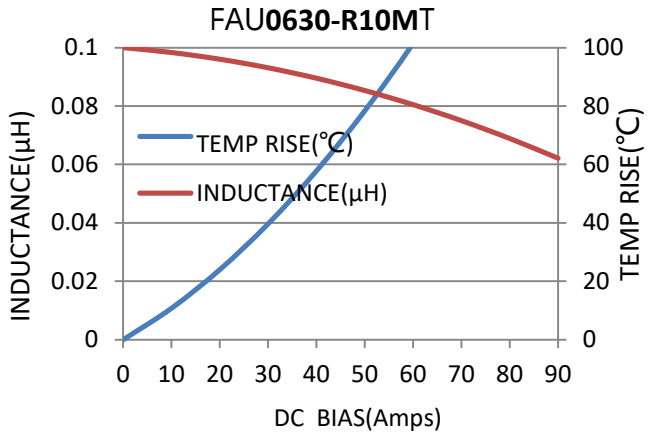
The inductor is marked with a 3-digit code

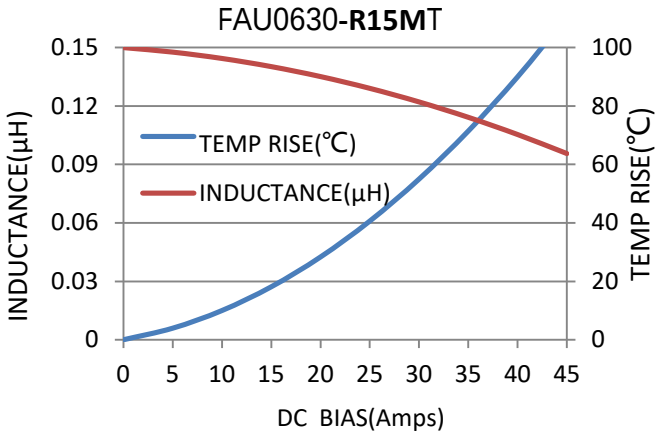
Example - -1.5→1R5

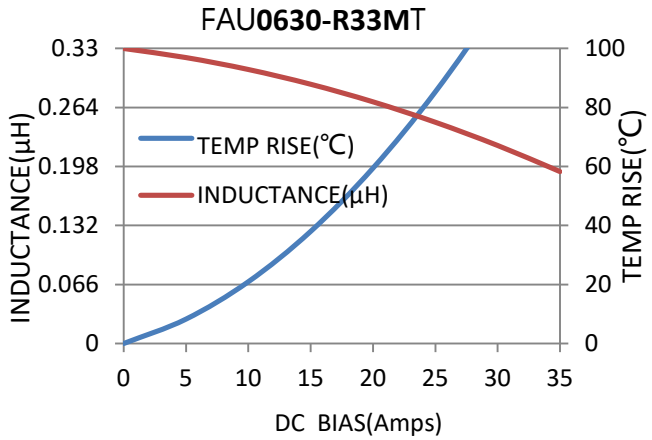
Note：Using Laser for marking

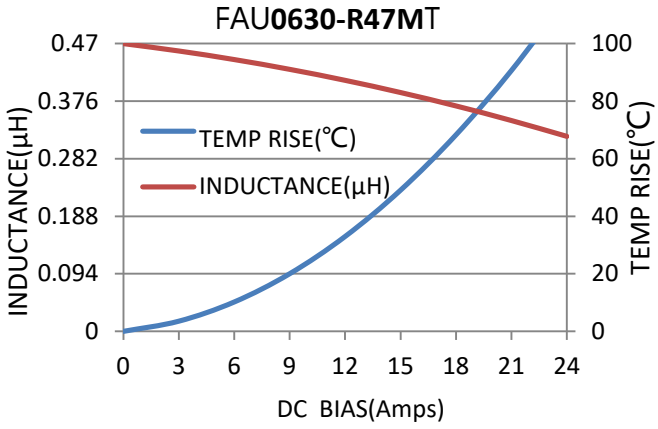


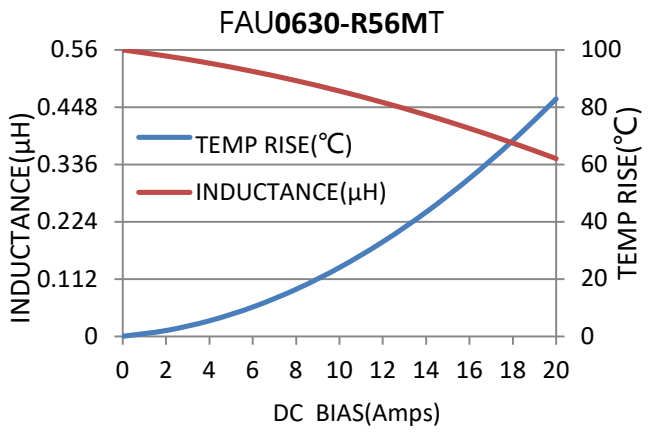
Performance Graphs	
Test Instruments	Test Condition
Wayne kerr 3260B/G LCR Meter Wayne kerr 3265B Bias Current Source	Temperature: 26 ± 3℃ Humidity: < 70% RH Frequency: 100 KHz, 1.0V

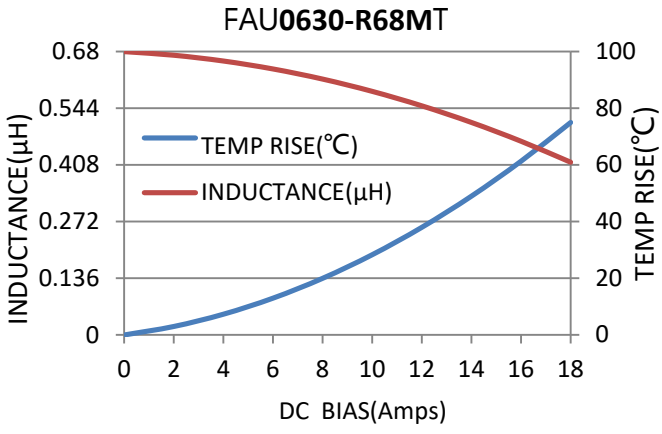




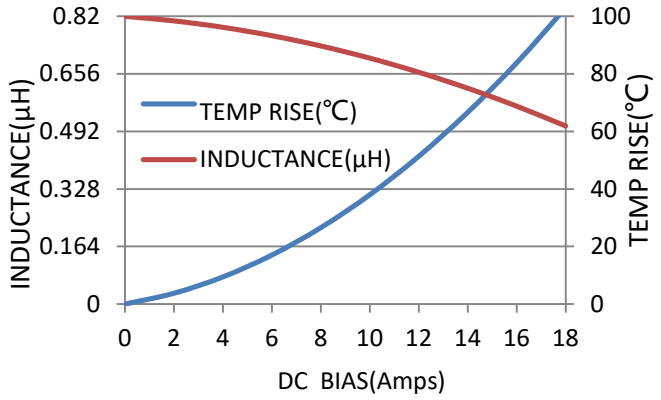




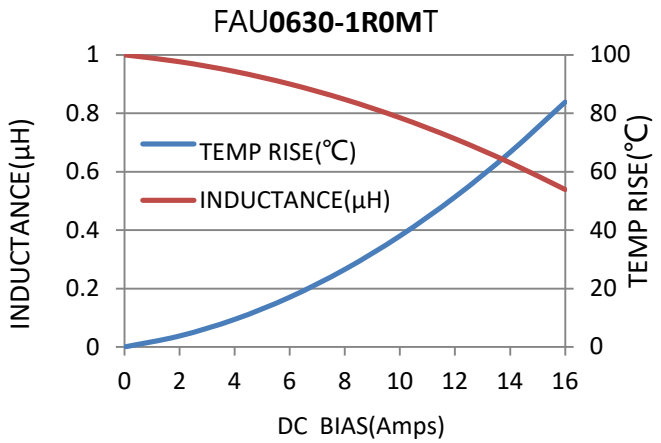




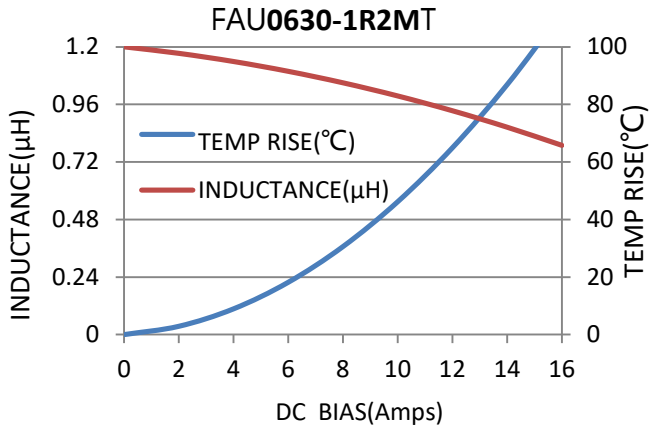
FAU**0630-R82M**T



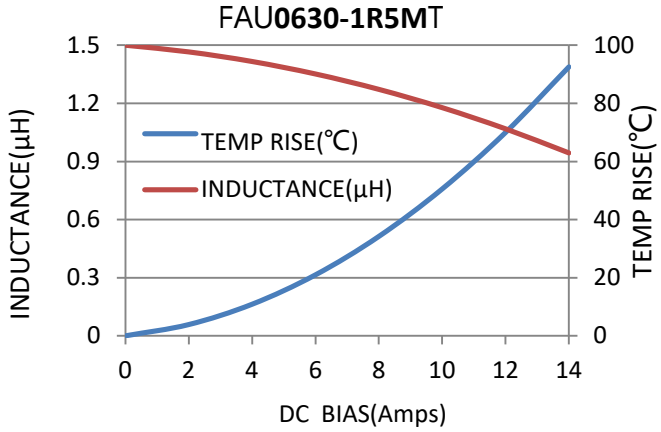
FAU**0630-1R0M**T



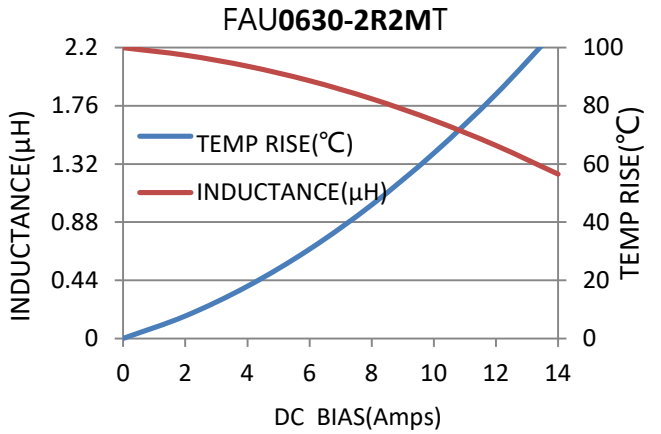
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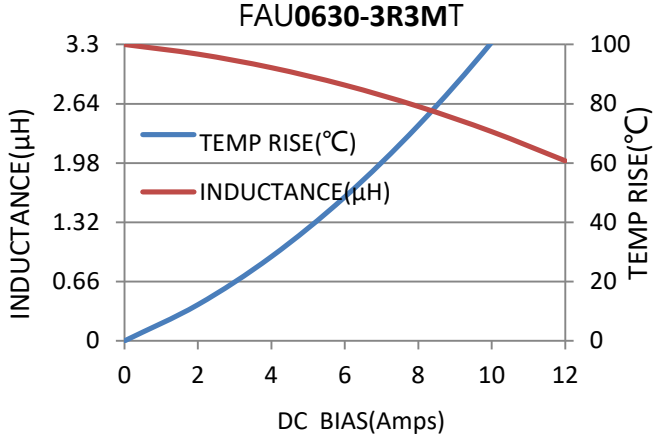
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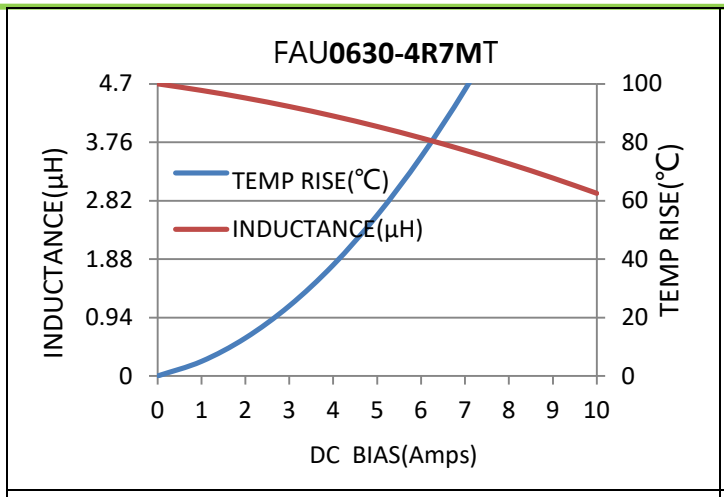


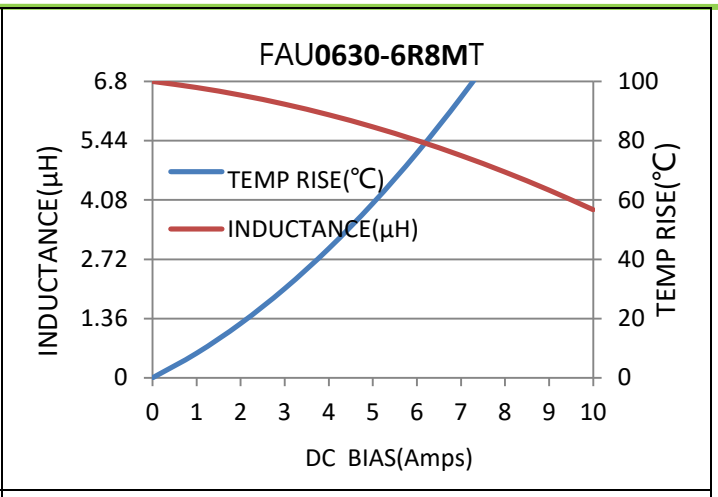
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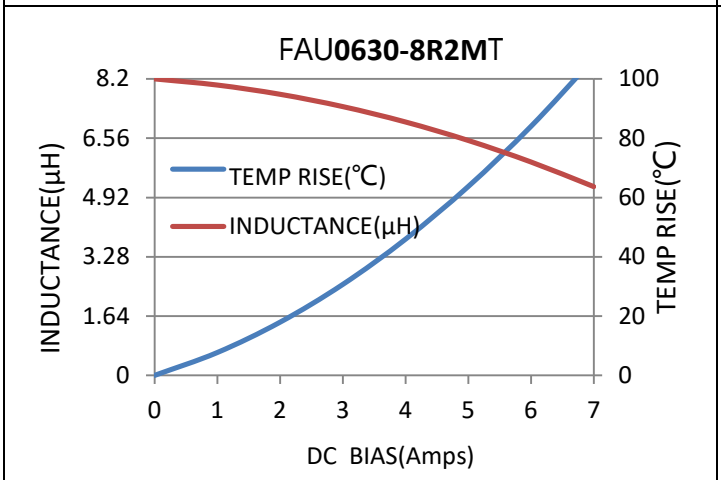


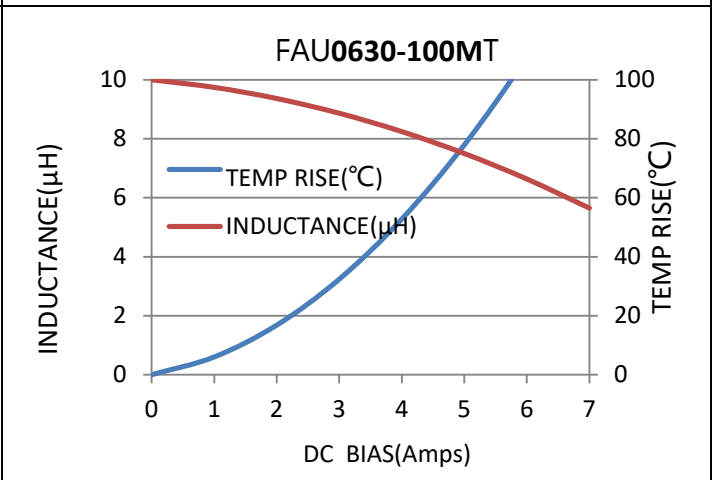
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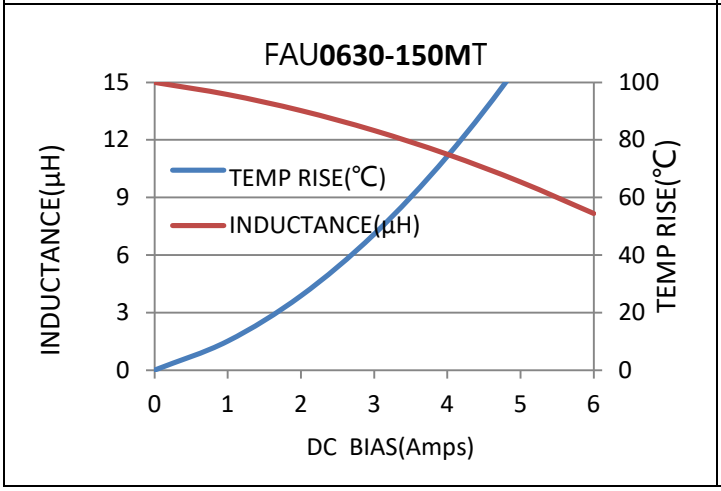


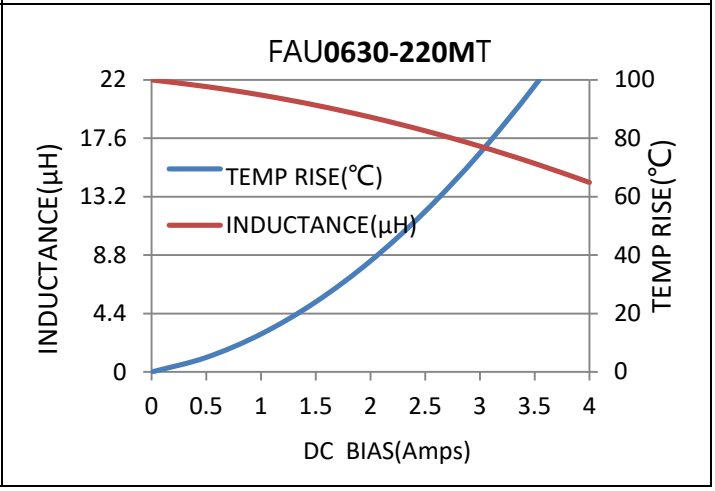

FAU0630-4R7MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
4.7
3.76
2.82
1.88
0.94
0
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10

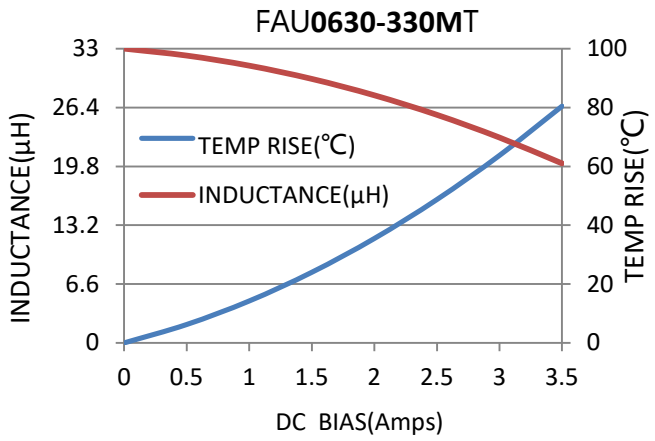

FAU0630-6R8MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
6.8
5.44
4.08
2.72
1.36
0
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10


FAU0630-8R2MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
8.2
6.56
4.92
3.28
1.64
0
100
80
60
40
20
0
0 1 2 3 4 5 6 7


FAU0630-100MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
10
8
6
4
2
0
100
80
60
40
20
0
0 1 2 3 4 5 6 7

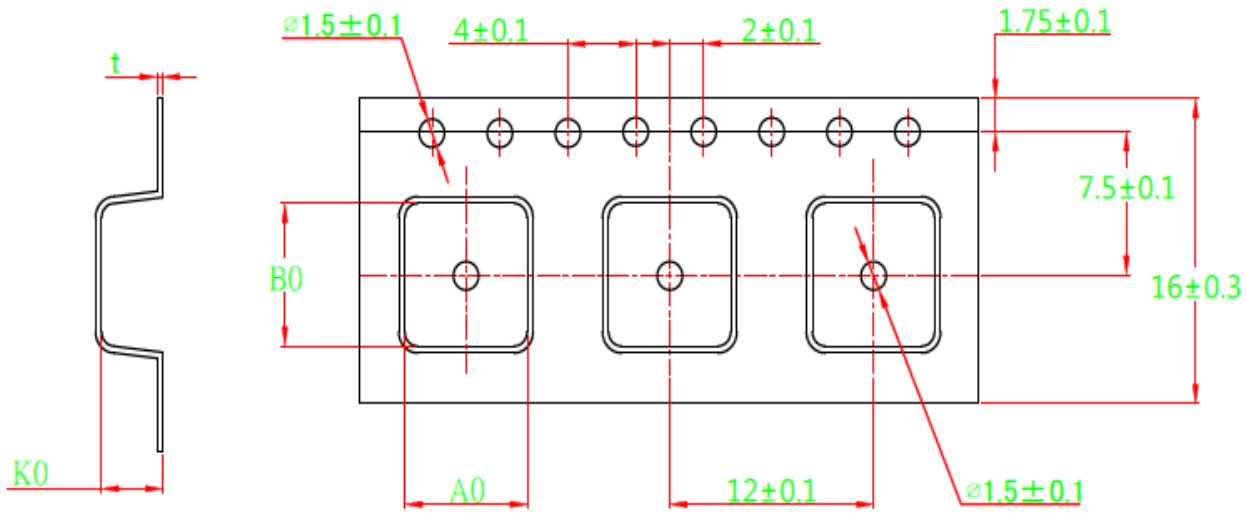

FAU0630-150MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
15
12
9
6
3
0
100
80
60
40
20
0
0 1 2 3 4 5 6


FAU0630-220MT
INDUCTANCE(μH)
TEMP RISE(℃)
DC BIAS(Amps)
TEMP RISE(℃)
INDUCTANCE(μH)
22
17.6
13.2
8.8
4.4
0
100
80
60
40
20
0
0 0.5 1 1.5 2 2.5 3 3.5 4


FAU0630-330MT
33
26.4
19.8
13.2
6.6
0
INDUCTANCE(µH)
100
80
60
40
20
0
TEMP RISE(℃)
TEMP RISE(℃)
INDUCTANCE(µH)
0
0.5
1
1.5
2
2.5
3
3.5
DC BIAS(Amps)

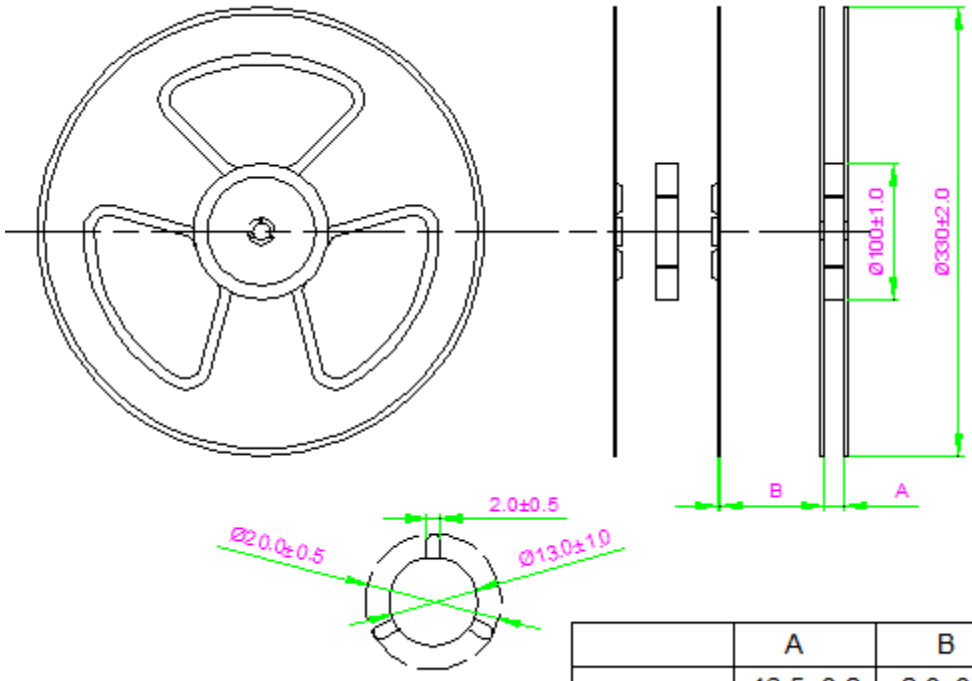
Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Precondition: 8 hours steam aging 2. Retention time: 255 ± 5 ℃ for 5 ± 0.5 seconds
Vibration	Inductance change: Within ± 10% Without mechanical damage such as break	1. Vibration frequency:(10 Hz to 2000 Hz) 2. Vibration time:Each four hours (12 times) in X, Y, Z direction: 12 hours in total 3. Amplitude: 1mm or 10 G
Shock	Inductance change: Within ± 10% Without mechanical damage such as break	1. Peak value: 100 G 2. Duration of pulse: 6ms 3. Waveform: Half-sine Shocks; 3 times in X, Y, Z direction, 9 times in total
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within ± 10% Without distinct damage in appearance	1. Repeat 1000 cycles as follow: (-55 ± 2 ℃; 30 ± 3 min) → (+155 ± 2 ℃, 30 ± 3 min) change over time of temperature: ≤10s 2. Recovery: 24 + 4 / -0 hours of recovery under the standard condition after the test.
High Temperature &Humidity	Inductance change: Within ± 10% Without distinct damage in appearance	85℃85%RH， Duration:240+4/-0 hours
Operational Life	Inductance change: Within ± 10% Without distinct damage in appearance	1.Rated current（Idc） Environment condition: 85 ℃ 2.Duration: 1000 + 4 / -0 hours
Low Temperature Store	Inductance change: Within ± 10% Without distinct damage in appearance	Store temperature: -55 ± 2 ℃,1000 + 4 / -0 hours
High Temperature Store	Inductance change: Within ± 10% Without distinct damage in appearance	Store temperature: +155 ± 2 ℃,1000 + 4 / -0 hours

Tape Packaging Dimensions



A0	B0	K0	t
7.2±0.10	7.5±0.10	3.6±0.15	0.31±0.05

Reel Dimensions

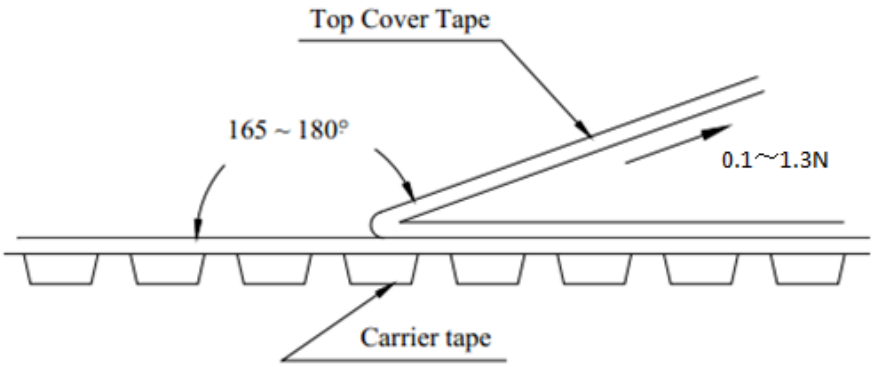


	A	B
mm	16.5±0.2	2.0±0.2

• 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



• Numbers of taping

1500pieces/reel