Patron

Passive Elektronic

SMD Molding Power Inductor (Flat Wire)

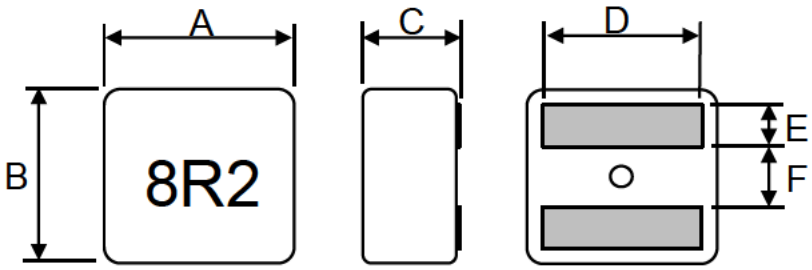
⊕ Feature

- •High current，low DCR，high efficiency.
- •Magnetically Shielded Structure.
- •Low profile construction and miniature size.

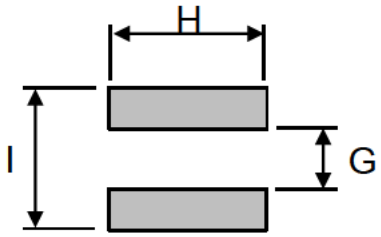
⊕ Applications

- •DC to DC converters.
- •Power line filtering.
- •DVC/DSC/PDA, LCD display.

⊕ Shapes And Dimensions



⊕Recommended PCB Pattern



Part No.	Dimensions(mm)								
	A	B	C	D	E	F	G	H	I
Patron XAL5050-822MEC	5.50 ±0.2	5.30 ±0.2	4.80 ±0.2	4.30 ±0.3	1.10 ±0.3	2.30 ±0.3	2.00 Ref	4.70 Ref	4.50 Ref

⊕ Electrical Characteristics：

Part No.	Inductance (μH)	Isat (A)	Isat (A)	Irms (A)	Irms (A)	DCR (mΩ)	DCR (mΩ)	Test Frequency
Patron XAL5050-822MEC	8.2 ± 20%	5.6 Max	6.1 Typ	5.6 Max	6.1 Typ	32.5 Max	30.3 Typ	100KHz/0.1V

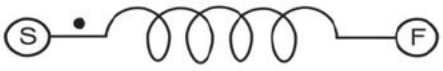
※Isat：Will cause L0 to drop approximately 30%(Internal control standards at 40% max)

※Irms：DC Current that will cause an approximate △T of 40℃.

※All test data is referenced to 25℃ ambient.

※Test Instrument：L (WK6500B), RDC(HIOKI RM3542A), Isat & Irms (WK3260B+WK3265B)

⊕ Equivalent Circuit Schematic：



⊕ Material List：

No.	Location	Material
1	Core	Alloy Powder or Equivalent
2	Wire	Flat Enamelled copper wire
3	Solder	Sn99.3 Cu0.7
4	Ink	Black

1.Operating temperature -40℃ ~ +125℃

2.Storage conditions -40℃ ~ +125℃

3.Befor Unpacking Storage environment： 0°C~+40°C ; RH10%~70%

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TEST DATA FOR PREPRODUCTION SAMPLES

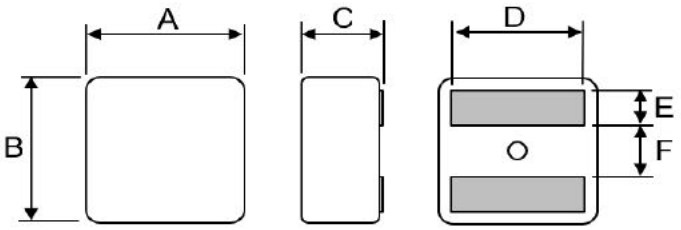
Customer		Test Date	2021/12/22		
Part No.	Patron XAL5050-822MEC	Sample Quantity	5	PCS	
Lot No		Test Temp	25℃	Test Humidity	62%

MEAS Item	L (0A) (μH)	L (5.6A) (μH)	下降率	DCR (mΩ)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)		
SPEC	8.2	L(0A)*70%	30%	32.50	5.50	5.30	4.80			-	-
Upper	9.84	-	30%	32.50	5.70	5.50	5.00	-	-	-	-
Lower	6.56	4.592	-	-	5.30	5.10	4.60	-	-	-	-
Tolerance	20%	Min	Max	Max	0.20	0.20	0.20				
Test Freq.	100KHz/0.1V									-	-
1	8.02	6.52	18.70%	30.20	5.54	5.36	4.88				
2	8.12	6.54	19.46%	30.20	5.54	5.35	4.89				
3	8.10	6.55	19.14%	30.40	5.52	5.32	4.92				
4	8.04	6.51	19.03%	30.10	5.53	5.34	4.90				
5	8.02	6.50	18.95%	30.30	5.52	5.32	4.88				
6											
7											
8											
9											
10											
Average	8.06	6.52	19.06%	30.240	5.53	5.34	4.89				
Max	8.12	6.55	19.46%	30.400	5.54	5.36	4.92			0.00	0.00
Min	8.02	6.50	18.70%	30.100	5.52	5.32	4.88			0.00	0.00
Range	0.10	0.05	0.75%	0.300	0.02	0.04	0.04			0.00	0.00
StDevP	0.04	0.02	0.25%	0.102	0.01	0.02	0.01			#DIV/0!	#DIV/0!

Test Instrument

LCR	WK6500B
DCR	HIOKI RM3565B
IDC	WK3260B+WK3265B

Configuration



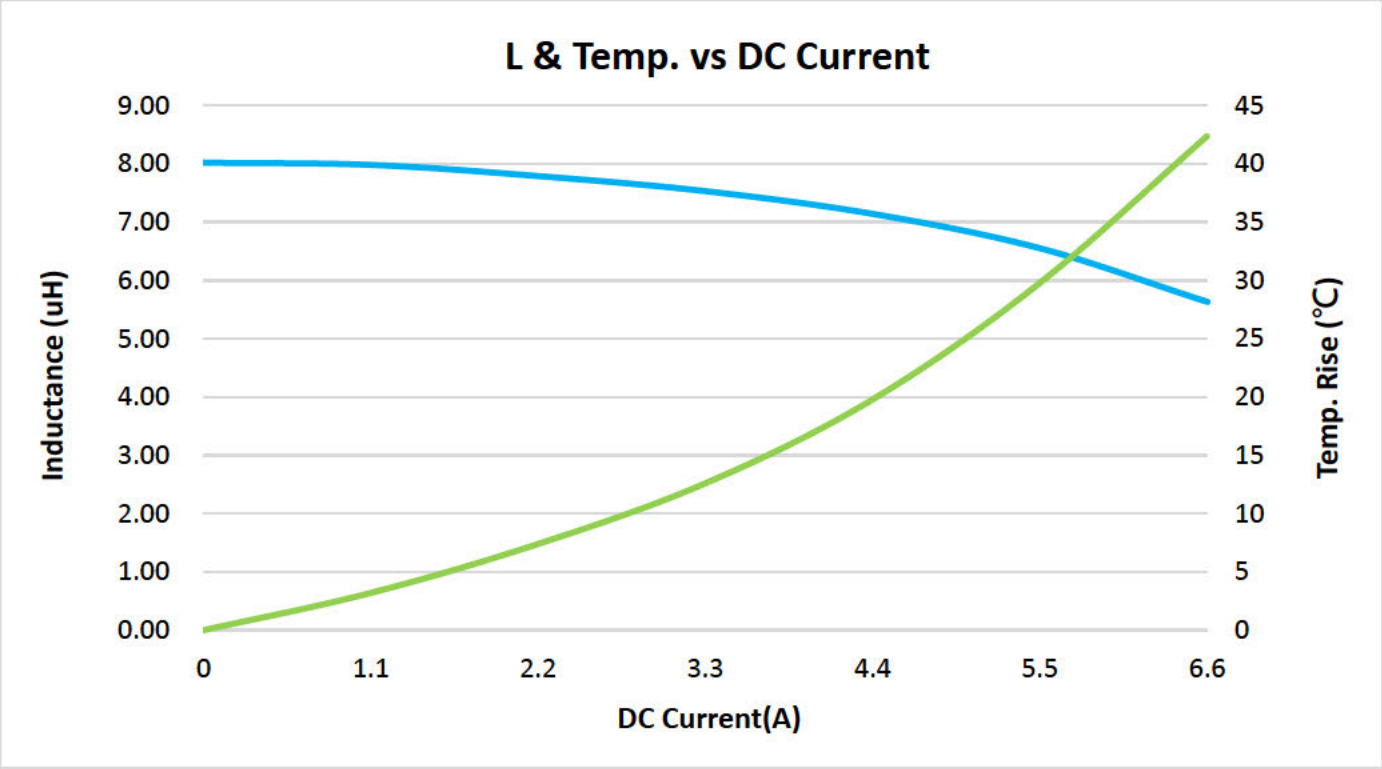
Coil Spec：

⊕ Test Condition

Part No.	Patron XAL5050-822MEC	Test Instruments	TH2817B+TH1773

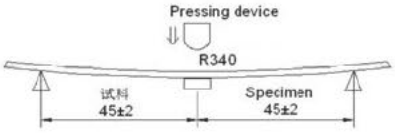
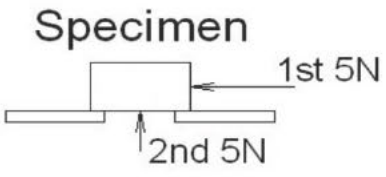
⊕ Test Curve

Current(A)	0	1.1	2.2	3.3	4.4	5.5	6.6				
L (uH)	8.02	7.98	7.79	7.53	7.14	6.55	5.63				
Temp. (℃)	0	3.2	7.4	12.6	19.8	29.8	42.4				



⊕ Remark

⊕ General Characteristics

Item	Conditions	Specification
Temperature drift	To be measured in the range of -40℃ to 125℃.	Inductance temperature coefficient 2000 ppm/℃ or less
Storage Temperature	With taping.	- 40℃ ~ + 125℃
Operating Temperature	Including self temperature rise.	- 40℃ ~ + 125℃
Bending test	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30±5s.  基板Board: 40*100mm 厚Thickness: 1.0mm	Change from an initial value L : within±10%
Adhesion strength	A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure. 	Change from an initial value L : within±10%

Vibration	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.	Change from an initial value L : within±10%
Mechanical shock	Peak acceleration: 981 m/S2 Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.	Change from an initial value L : within±10%
Free fall test	The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.	Change from an initial value L : within±10%
Solderability	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5℃ for 3±0.5 seconds.	New solder shall cover 90% minimum of the surface immersed.
Dielectric strength	100V DC shall be applied for 60s between the terminal and the core.	Without damage.

Resistance to soldering heat	The specimen shall be subjected to the reflow process under the above condition 2 times.Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.	Change from an initial value L : within±10%
Insulation resistance	100V DC shall be applied between the terminal and the core.	100mΩ or more.
Low temperature	The specimen shall be stored at a temperature of -40±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement Measurement shall be made within 1h.	Change from an initial value L : within±10%
Dry heat	The specimen shall be stored at a temperature of 125 ± 2℃ for 500± 12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

Dump heat	The specimen shall be stored at a temperature of 60±2℃ with relative humidity of 90 ~ 95% for 500 ± 2h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%
Temperature cycle	The specimen shall be subjected to 500 continuous cycles of temperature change of -40℃ for 30 min and 125℃ for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

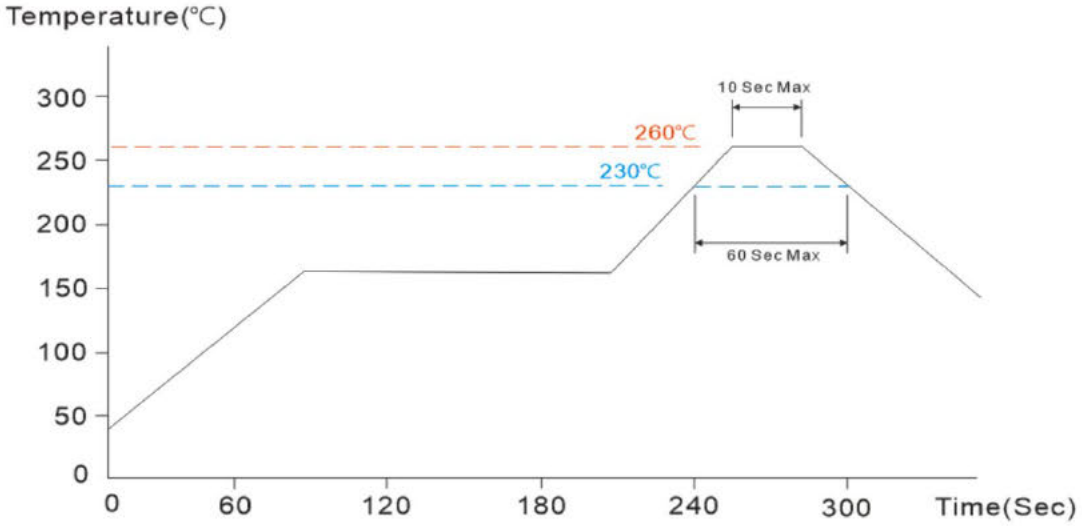
Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows;
Ambient temperature : 5℃ to 35℃, Relative humidity: 45% to 85%, Air pressure: 86kPa to 106kPa
If more strict measurement is required, measurement shall be made within following limits;
Ambient temperature : 20±2℃, Relative humidity: 65±5%, Air pressure: 86kPa to 106kPa

Prohibited Subtances

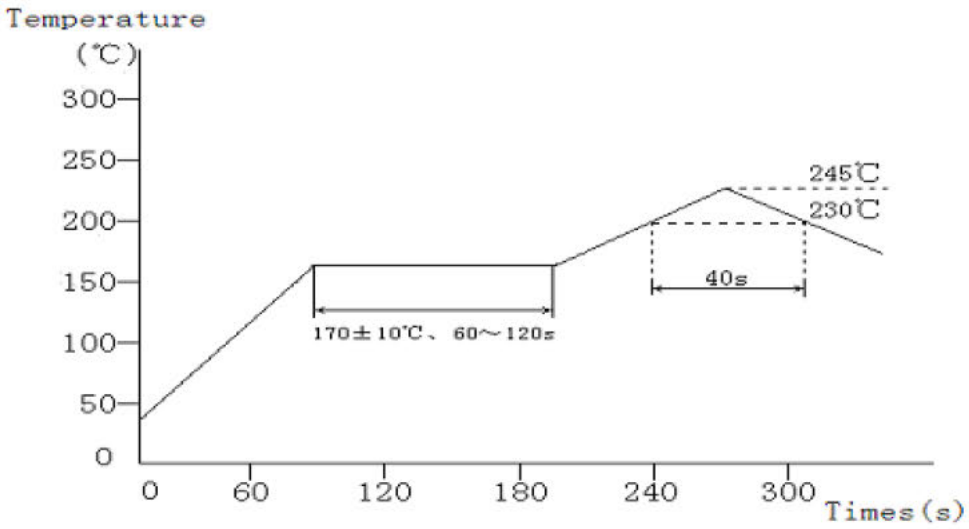
We confirm that our products and our production process accord with "rule of RoHS". All materials used in this product are registered material under the law concerning the examination and Regulation of Manufacture of Chemical Substances.

⊕ 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.

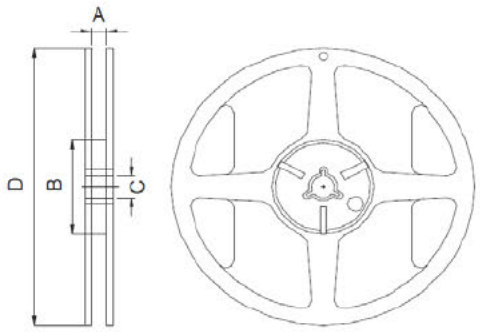
⊕ Recommended Reflow Conditions



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.

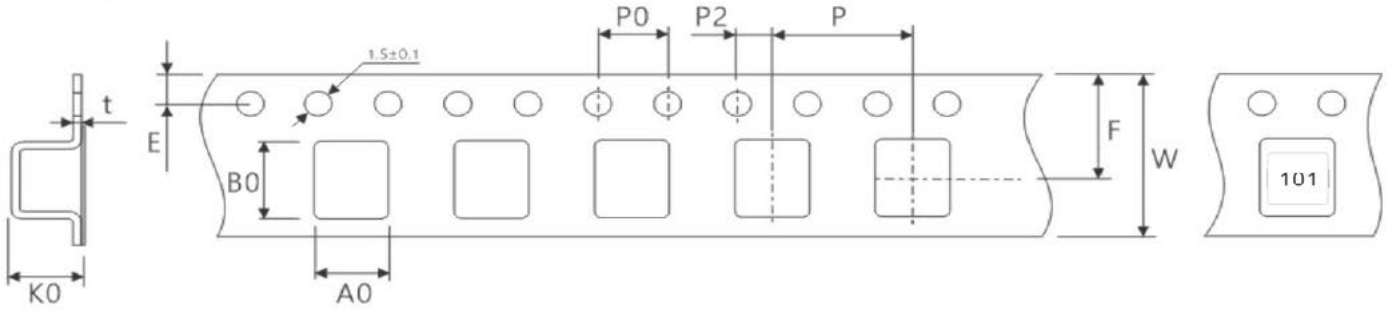
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

⊕Reel Dimension(m/m)



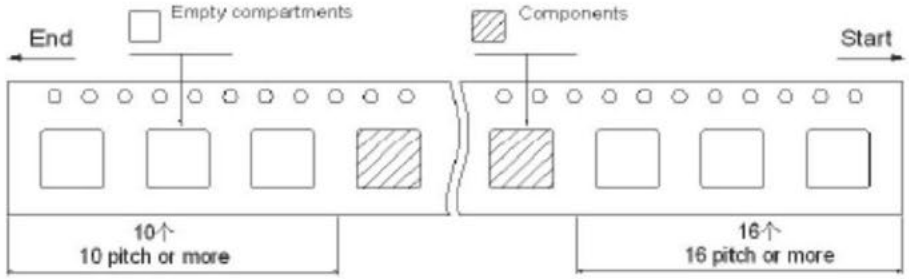
Item	A	B	C	D
13"x16	16.5±1	100±1	13±1	330±1

⊕Taping Dimension(m/m)



Item	W	Ao	Bo	Ko	E	F	P	P0
16mm	16±0.3	6.0±0.1	5.7±0.1	5.3±0.1	1.75±0.1	7.5±0.1	12.0±0.1	4.0±0.1
	P2	t						
	2.0±0.1	0.35±0.05						

⊕Taping method



⊕ Packaging Carton

Reel Packing Unit	Inner Box Packing Unit	Carton Packing Unit
1,500 PCS / Reel	1,500 PCS / Box	7,500 PCS / Box