Low Profile Alloy Power Inductor / AENR Series

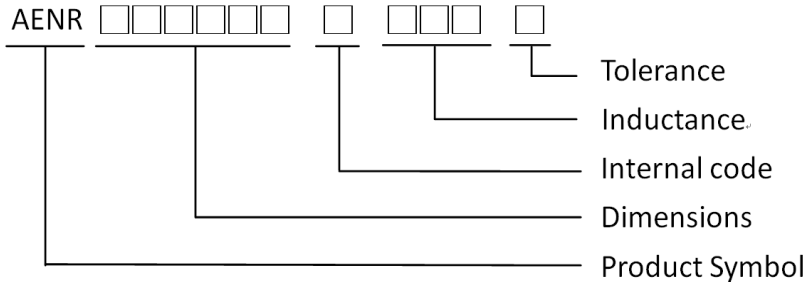
.Feature:

1. High current saturation.
2. Magnetically Shielded Structure.
3. Low profile construction and miniature size.

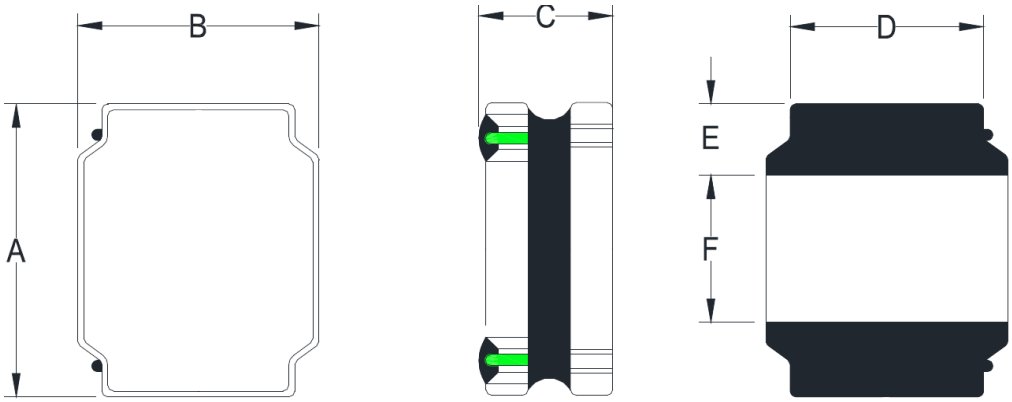
.Applications:

1. DC to DC converters.
2. Power line filtering.
3. DVC/DSC/PDA, LCD display.

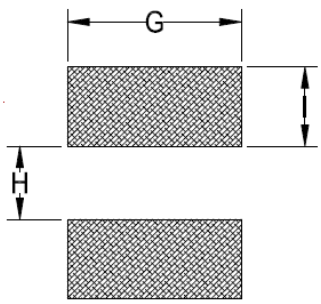
.Product Identification



.Shape and Dimension



.Recommended PCB Pattern



Dimensions in mm

TYPE	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)	I(mm)
AENR201610S	2.0±0.20	1.6±0.20	1.08	0.6±0.20	0.6±0.20	2.0±0.20	1.6 Ref	0.80 Ref	0.80 Ref
AENR252010S	2.5±0.20	2.0±0.20	1.05	1.5±0.20	0.8±0.20	0.8±0.20	2.0 Ref	0.80 Ref	0.85 Ref
AENR252012S	2.5±0.20	2.0±0.20	1.26	1.5±0.20	0.8±0.20	0.8±0.20	2.0 Ref	0.80 Ref	0.85 Ref

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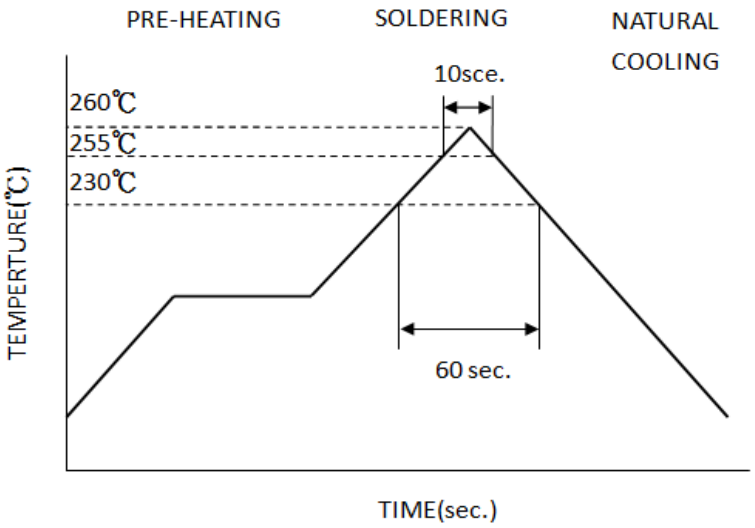
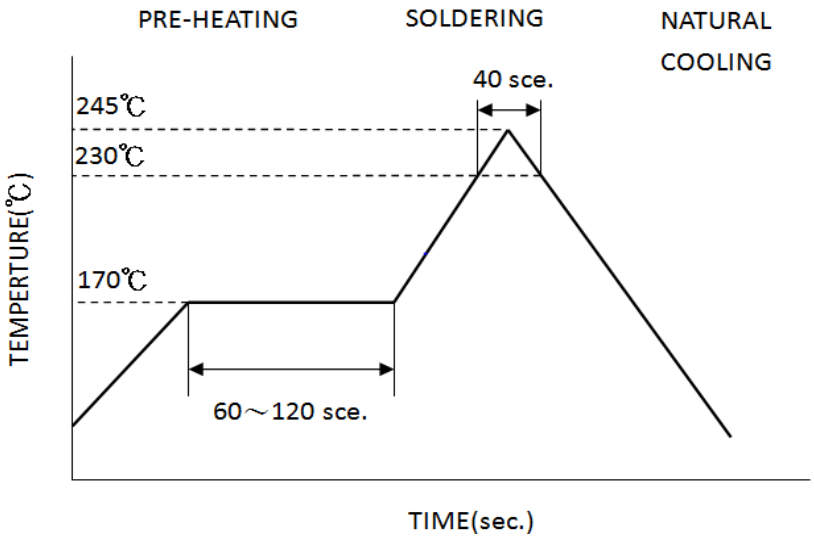
.Recommended Reflow Soldering Conditions.



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 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.

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. Electrical Characteristics（AENR201610S TYPE）

Part No.	INDUCTANCE (uH)	DC Resistance (mΩ)		Isat (A)		Irms (A)		Test Frequency
		Max.	Typ.	Max.	Typ.	(A) Max.	Typ.	
AENR201610S-R24M	0.24	40	33	4.50	5.50	3.00	3.45	1MHz / 1 V
AENR201610S-R47M	0.47	49	41	4.06	4.70	2.70	3.10	1MHz / 1 V
AENR201610S-R68M	0.68	65	57	3.50	4.00	2.50	2.80	1MHz / 1 V
AENR201610S-1R0M	1	95	78	3.30	3.80	2.00	2.30	1MHz / 1 V
AENR201610S-1R5M	1.5	130	110	1.95	2.30	1.70	2.00	1MHz / 1 V
AENR201610S-2R2M	2.2	180	160	1.90	2.15	1.40	1.60	1MHz / 1 V
AENR201610S-4R7M	4.7	425	370	1.10	1.40	0.90	1.00	1MHz / 1 V

. Electrical Characteristics（AENR252010S TYPE）

Part No.	INDUCTANCE (uH)	DC Resistance (mΩ)		Isat (A)		Irms (A)		Test Frequency
		Max.	Typ.	Max.	Typ.	(A) Max.	Typ.	
AENR252010S-R24M	0.24	33	25	6.10	7.10	3.70	4.50	1MHz / 1 V
AENR252010S-R33M	0.33	39	33	4.80	5.50	3.50	4.05	1MHz / 1 V
AENR252010S-R47M	0.47	45	40	4.40	5.20	3.20	3.60	1MHz / 1 V
AENR252010S-R68M	0.68	59	49	3.20	3.60	2.75	3.20	1MHz / 1 V
AENR252010S-1R0M	1	76	63	3.10	3.50	2.50	2.90	1MHz / 1 V
AENR252010S-1R5M	1.5	106	90	2.60	3.00	2.00	2.30	1MHz / 1 V
AENR252010S-2R2M	2.2	155	129	1.90	2.20	1.50	1.80	1MHz / 1 V
AENR252010S-3R3M	3.3	235	196	1.60	1.80	1.20	1.40	1MHz / 1 V

. Electrical Characteristics（AENR252012S TYPE）

Part No.	INDUCTANCE (uH)	DC Resistance (mΩ)		Isat (A)		Irms (A)		Test Frequency
		Max.	Typ.	Max.	Typ.	(A) Max.	Typ.	
AENR252012S-R24M	0.24	23	19	6.50	7.80	4.05	4.70	1MHz / 1 V
AENR252012S-R33M	0.33	28	23	5.35	6.30	3.70	4.30	1MHz / 1 V
AENR252012S-R47M	0.47	35	29	4.90	5.60	3.45	4.00	1MHz / 1 V
AENR252012S-R68M	0.68	45	39	3.80	4.50	3.15	3.60	1MHz / 1 V
AENR252012S-1R0M	1	54	48	3.60	4.20	3.00	3.40	1MHz / 1 V
AENR252012S-1R5M	1.5	72	60	2.90	3.50	2.40	2.80	1MHz / 1 V
AENR252012S-2R2M	2.2	120	100	2.60	3.00	1.90	2.15	1MHz / 1 V
AENR252012S-3R3M	3.3	163	136	1.70	2.10	1.80	2.05	1MHz / 1 V
AENR252012S-4R7M	4.7	260	225	1.60	1.90	1.25	1.45	1MHz / 1 V
AENR252012S-6R8M	6.8	366	305	1.20	1.40	0.95	1.10	1MHz / 1 V
AENR252012S-100M	10	480	435	1.10	1.35	0.85	1.00	1MHz / 1 V

Note

1. Specifications which provide more details for the proper and safe use of the described product are available upon request. all specifications are subject to change without notice.
2. Isat：DC Saturation Current that will cause initial inductance to drop approximately 30% max.
3. Irms：DC Current that will cause an approximate ΔT of 40 ℃

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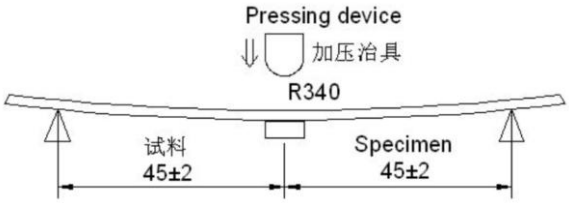
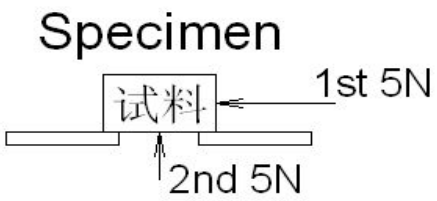
. Reliability and Test Conditions(可靠性測試條件)

General Characteristics

Item	Conditions	Specification
Temperature drift	To be measured in the range of -25℃ to 85℃.	Inductance temperature coefficient 2000 ppm/℃ or less.
Storage Temperature	With taping.	－40℃～＋105℃
Operating Temperature	Including self temperature rise.	－40℃～＋105℃
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.  Board: 40*100mm, 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 directionof 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 1hr in each of 3(X,Y,Z) axes.	Change from an initial value. L : within±10%
Mechanicalshock	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%

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Solder ability	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 of the surface 90% minimum of the surface immersed.
Dielectric strength	100V DC shall be applied for 60s between the terminal and the core. **Test method** Reflow soldering method Preheat 150~180℃ 90±30s Peak temp 250(+ 5,-0)℃ (230℃min , 30±10s)	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 1hr 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.
Dry heat	The specimen shall be stored at a temperature of 85 ± 2℃ for 500± 12hr. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. Measurement shall be made within 1hr.	Change from an initial value. L : within±10%
Dump heat	The specimen shall be stored at a temperature of 60 ± 2℃ relative humidity of 90 ~ 95%. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement, Measurement shall be made within 1hr.	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 85℃ 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 1hr.	Change from an initial value. L : within±10%

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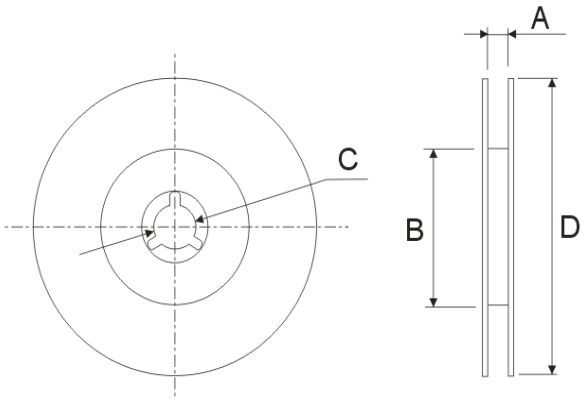
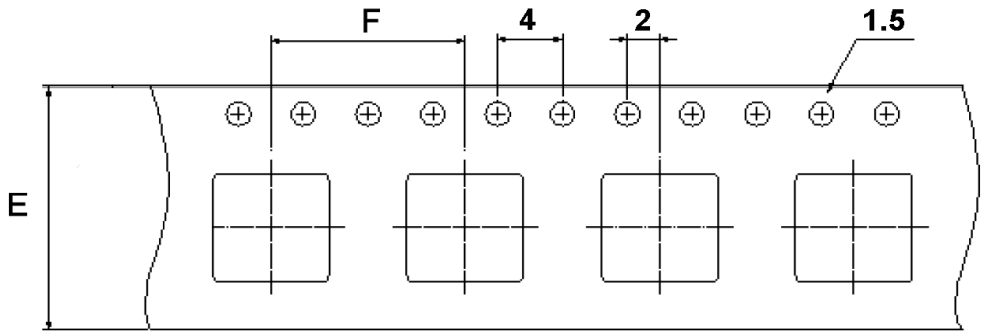
.Packing Specifications





TYPE	Packaging Quantity			Tape and Reel Dimension(mm)					
	Reel	Inner	Carton	A	B	C	D	E	F
AENR201610S	2,000	10,000	60,000	8	60	13	178	8	8
AENR252010S	2,000	10,000	60,000	8	60	13	178	8	8
AENR252012S	2,000	10,000	60,000	8	60	13	178	8	8