



## SPECIFICATION FOR APPROVAL

**CUSTOMER**

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**CUSTOMER'S P/N**

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**DATE** 16/Dec/2021 **REVISION NO.** A

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**PART NO.** AMPI107807GDR18MT

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**DRAWN NO.**

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**Signature**

<b>Approved by</b>	<b>Checked by</b>	<b>Drawn by</b>

**ARLITECH ELECTRONIC CORP.**

14F NO. 646 SEC.5, CHUNG HSING RD.,  
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**RoHS+HF**



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## PRODUCT IDENTIFICATION

AMPI   107807   GD   R18   M   T  
①                      ②                      ③                      ④                      ⑤                      ⑥

① Product Series:AMPI=Arlitech Molding Power Inductors

② Dimension:Length\*Width\*High

③ Type:Type Code

④ Inductance(uH):R18=0.18

⑤ Tolerance:M=±20%

⑥ Package:T=Taping

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<b>SHAPE &amp; DIMENSION (UNIT: mm)</b>																			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td style="text-align: center;">A</td><td style="text-align: center;">7.9±0.2</td></tr> <tr><td style="text-align: center;">B</td><td style="text-align: center;">11.2±0.5</td></tr> <tr><td style="text-align: center;">C</td><td style="text-align: center;">6.8±0.2</td></tr> <tr><td style="text-align: center;">D</td><td style="text-align: center;">5.0±0.5</td></tr> <tr><td style="text-align: center;">E</td><td style="text-align: center;">2.0±0.5</td></tr> <tr><td style="text-align: center;">W</td><td style="text-align: center;">0.20+0</td></tr> <tr><td style="text-align: center;">G</td><td style="text-align: center;">5.7</td></tr> <tr><td style="text-align: center;">H</td><td style="text-align: center;">12.5</td></tr> <tr><td style="text-align: center;">I</td><td style="text-align: center;">5.5</td></tr> </tbody> </table>	A	7.9±0.2	B	11.2±0.5	C	6.8±0.2	D	5.0±0.5	E	2.0±0.5	W	0.20+0	G	5.7	H	12.5	I	5.5
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H	12.5																		
I	5.5																		
<p style="color: red; font-size: small;">Recommended land pattern</p>																			

<b>ELECTRICAL SPECIFICATION</b>			
MEAS. ITEM	SPEC.	TEST FREQ.	CONDITIONS
<b>L<sub>0</sub></b>	0.18 μH ± 20%	100KHz/1V	Ta=20~25°C · Idc=0A
<b>DCR</b>	0.66mΩ Typ 0.72mΩ Max		Ta=20°C
<b>Isat</b>	140A Typ.	100KHz/1V	ΔL/L ≒ 30%
<b>Irms</b>	50A Typ.	100KHz/1V	ΔT ≒ 40°C

<b>GENERAL SPECIFICATION</b>	
Electrical specifications :	at 20~25°C
Operation Temperature :	-40~+125°C (Including self-temperature rise)
Storage Temperature :	-40~85°C(after PCBA);-5~35°C(before PCBA)
Storage R.H. :	40~70%(before PCBA)
Resistance to solder heat:	260°C/10 seconds
Coating:	Gray

**NOTE:**

- ※ Test Instrument : LCR METER(Chroma3250,Test1790), BIAS CURRENT SOURCE(Chroma1320,Chroma1320S)
- ※ Isat : For Inductance drop approximately 30% from its value without bias current.
- ※ Irms : Typical Heat Rating D.C current would cause an approximately ΔT of 40°C (Ta=20~25°C)

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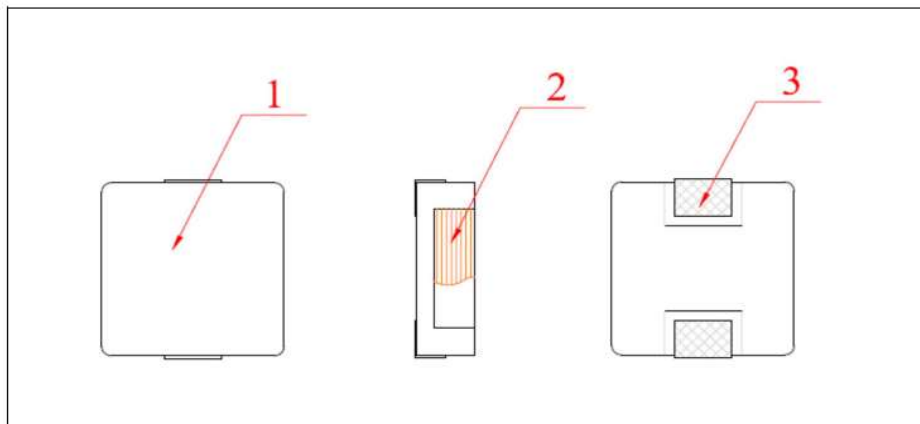
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## MATERIAL LIST



NO.	ITEM	MATERIAL	VENDER	Remark
1	Core	Powder	ARLITECH OR EQUIVALENT	
2	Wire	Copper Wire	JUNG SHING PACIFIC ELEKTRISOLA OR EQUIVALENT	
3	Electrode	Sn-Ag-Cu	YANKANGDA OR EQUIVALENT	

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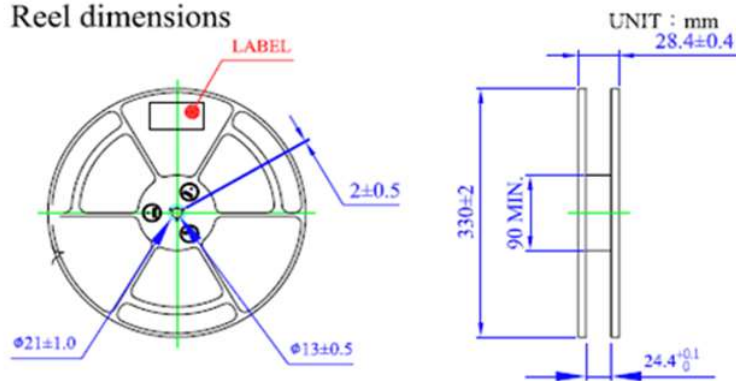
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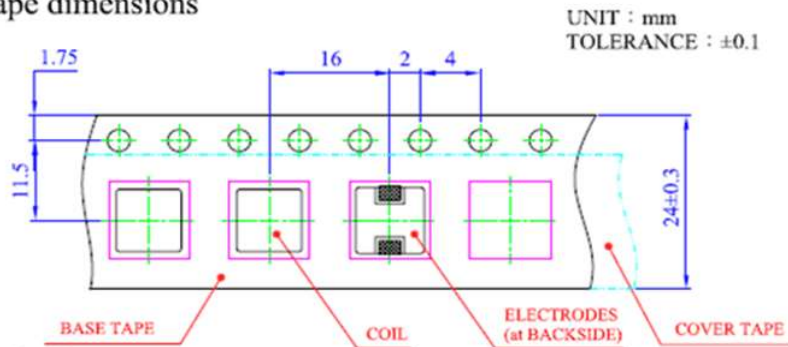
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## PACKAGING

Reel dimensions



Tape dimensions



Packaging

Quantity : **500** pcs/reel

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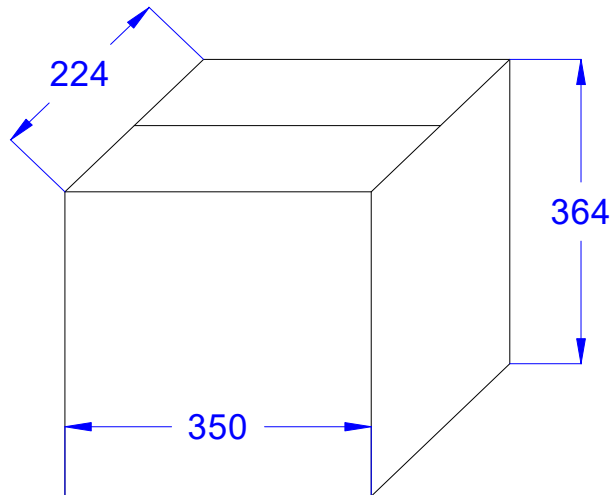
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## CARTON



500 pcs/reel

5 reel/carton

2500pcs/carton

Carton:350x224x364mm

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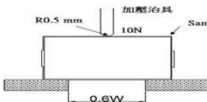

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## RELIABILITY TEST

MECHANICAL RELIABILITY		
Test Items	Test Conditions	Criteria
Adhesion strength	<p>A static load using a R0.5 pressing tool with 10N shall be applied to the body of the specimen in the direction of the arrow and shall be hold for 10s,measure after removing pressure.</p> 	change from an initial value L:within±10%
Terminal strength	<p>Add static load 10N to inductor through hole of test board for 5±2 sec.</p> 	no detachment of terminal pin and no breakage of wire.
Vibration test	<p>Frequency: 10 ~ 55 ~ 10Hz Amplitude: 1.5mm Sweep time: 2 cycle Test Directions: X,Y,Z Test Time: 2 hours each direction</p>	change from an initial value L:within±10%
Drop test	Drop specimen three times on concrete floor from a height of 1 meter which mounted on test board.	change from an initial value L:within±10%
ENDURANCE RELIABILITY		
Test Items	Test Conditions	Criteria
Withstanding voltage	Ac voltage of 50V and Ac current of 1mA applied between inductor's terminal and core for 3 secs.	Inductors shall have no evidence of electrical and mechanical damage
Low temperature storage	Placed at -40°C for 1000 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
High temperature storage	Placed at +125°C for 1000 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
Thermal shock	Condition for 1 cycle: -40°C, 30min. ~ +125°C, 30min. Number of cycles:100	change from an initial value L:within±10%
Humidity resistance	Placed at 90 to 95%RH,+60±2°C for 500 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
High temperature dynamic operation test	Placed at +85°C for 500 hours, then measured at room ambient temperature with current test after placing 24 hours.	Inductance shall be within ±10% of the initial value. Appearance: No damage
Solderability test	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten soldr at 245±3°C for 3±0.5 seconds	New solder shall cover 90% minimum of the surface immersed.



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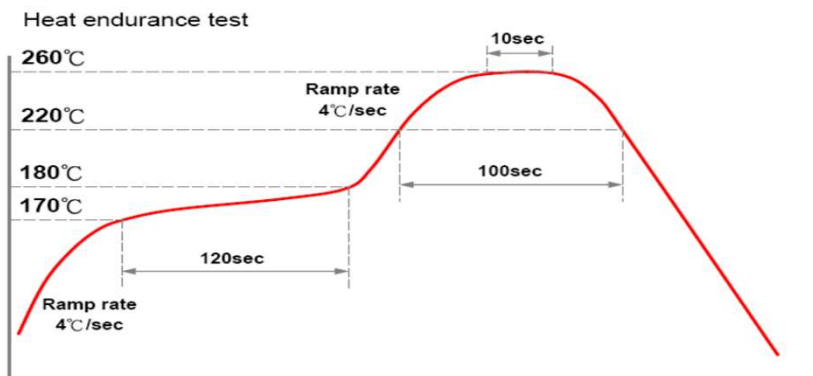
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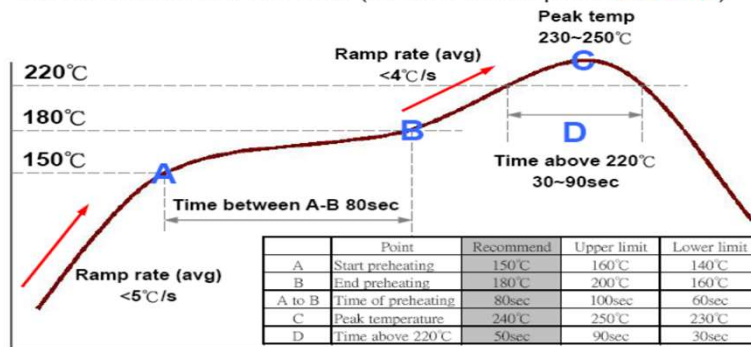
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## REFLOW-PROFILE



- ⊙ The test should be made under the conditions according to the chart, after the test it is kept for 2 hours under the normal temperature and humidity.
- ⊙ The reflow test can be done twice, but the interval should be more than one hour under the normal conditions.
- ⊙ The reflow test conditions are based on the testing instruments available in Arlitech.

**Recommended Reflow Profile (for EOC Solder paste S70G-HF)**



- ⊙ The reflow condition recommended above is according to the machine used by our company. Big differences will arise as a result of the type of machine, reflow conditions, method, etc used. Hence, before setting up your reflow conditions, please confirm with the above.

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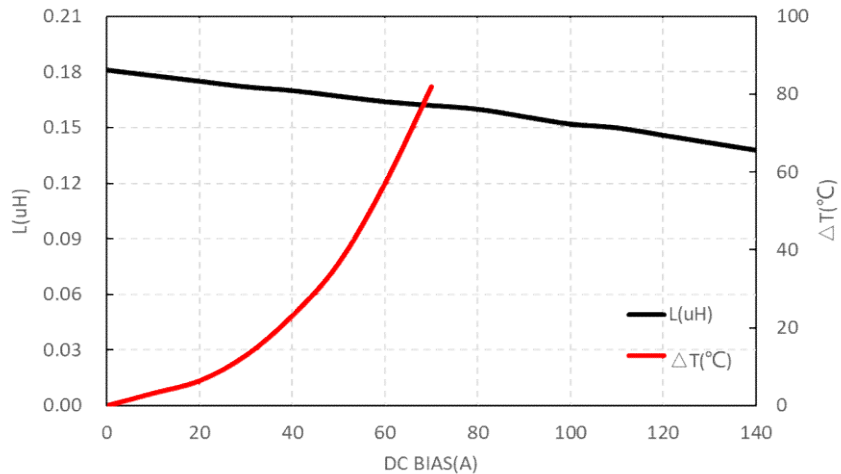
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## Isat(Saturation Current):Transient current

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DC BIAS(A)	L( $\mu$ H)	$\Delta T(^{\circ}C)$
0	0.181	0.0
10	0.178	3.2
20	0.175	6.4
30	0.172	12.9
40	0.170	23.1
50	0.167	36.6
60	0.164	57.1
70	0.162	81.9
80	0.160	
90	0.156	
100	0.152	
110	0.150	
120	0.146	
130	0.142	
140	0.138	



\* DC bias current characteristics in the ambient temperature 20~25°C Frequency 100KHz/1V

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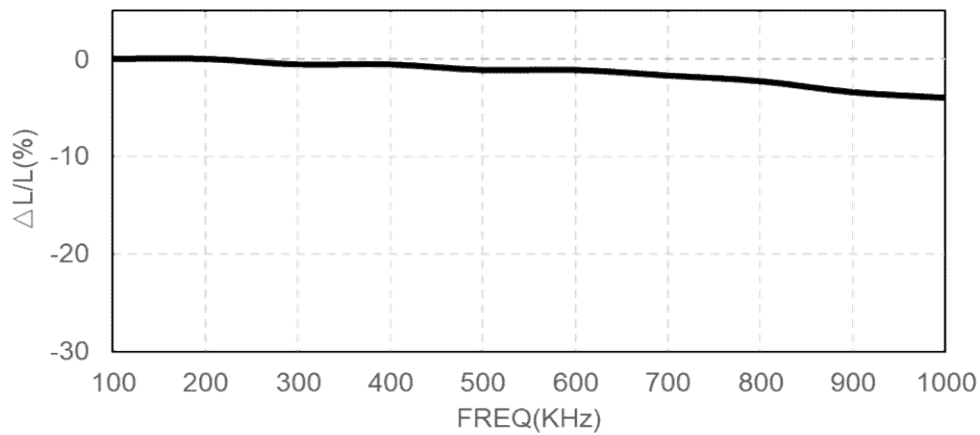
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## L-F CURVE

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FREQ(KHz)	L(uH)	$\Delta L/L(\%)$
100	0.179	0.00%
200	0.179	0.00%
300	0.178	-0.56%
400	0.178	-0.56%
500	0.177	-1.12%
600	0.177	-1.12%
700	0.176	-1.68%
800	0.175	-2.23%
900	0.173	-3.35%
1000	0.172	-3.91%



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**TEST R.H.**    40~85%

**TEST TEMP.**    20~25°C

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TEST DATA FOR PREPRODUCTION SAMPLE												
TEST RESOLUTION							DIMENSION (Unit : mm)					
MEAS. ITEM	L0 μH	DCR mΩ	Isat uH	Irms °C			A	B	C	D	E	
<b>SPEC.</b>	0.18 ± 20%	0.66Typ. 0.72Max	140A Typ. ΔL/L≒30%	50A Typ. ΔT≒40°C			7.9±0.2	11.2±0.5	6.8±0.2	5.0±0.5	2.0±0.5	
<b>TEST FREQ.</b>	100KHz/1V		100KHz/1V	100KHz/1V								
<b>1</b>	0.181	0.660	0.138	36.6			7.99	11.47	6.81	4.97	2.19	
<b>2</b>	0.179	0.658	0.136	36.9			7.99	11.45	6.80	4.89	2.11	
<b>3</b>	0.180	0.667	0.137	37.0			7.98	11.46	6.79	4.98	2.21	
<b>4</b>	0.182	0.662	0.139	36.8			7.98	11.47	6.81	4.88	2.23	
<b>5</b>	0.179	0.670	0.136	37.0			7.94	11.45	6.80	4.89	2.21	
<b>6</b>	0.180	0.663	0.137	37.6			7.96	11.48	6.81	4.98	2.18	
<b>7</b>	0.180	0.659	0.137	37.2			7.97	11.47	6.79	4.92	2.24	
<b>8</b>	0.181	0.663	0.138	37.3			7.96	11.47	6.78	4.93	2.20	
<b>9</b>	0.182	0.666	0.138	37.0			7.95	11.45	6.80	4.98	2.14	
<b>10</b>	0.181	0.658	0.138	36.9			7.99	11.46	6.82	4.98	2.17	
<b>AVG.</b>	0.1805	0.6626	0.1374	37.03			7.971	11.463	6.801	4.940	2.188	
<b>R</b>	0.003	0.012	0.003	1.0			0.05	0.03	0.04	0.10	0.13	
<b>DRAWN BY</b>							<b>CHECKED BY</b>			<b>APPROVED BY</b>		