

# Molded Inductor



**AMPLA7050Q**

Request Samples



Check Inventory



7.3 x 6.6 x 4.8 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## Features

- AEC-Q200 Qualified
- Shielded construction
- Soft saturation
- High current density
- Designed for switching frequencies between 100KHz-2MHz

## Applications

- Body electronics and comfort system
- Infotainment and entertainment
- Electric vehicles
- Lighting
- Solar inverters and power
- Industrial and robotics
- Medium and high-power switch mode power supplies.

## Electrical Specifications

Part Number*	Inductance (uH)	Tolerance (%)	Irms (A)	Isat (A)	DC Resistance (mΩ)		Type
					Typ	Max	
AMPLA7050Q-R22MT	0.22	20	25	35	1.6	1.9	Lead Frame
AMPLA7050Q-R33MT	0.33	20	25	32	2.5	3.0	Lead Frame
AMPLA7050Q-R40MT	0.40	20	23	31	3.1	3.7	Lead Frame
AMPLA7050Q-R47MT	0.47	20	22	30	3.5	3.9	Lead Frame
AMPLA7050Q-R56MT	0.56	20	20	27	3.6	4.2	Lead Frame
AMPLA7050Q-R60MT	0.6	20	19	25	3.8	4.3	Lead Frame
AMPLA7050Q-R68MT	0.68	20	18	24	4.0	4.5	Lead Frame
AMPLA7050Q-R82MT	0.82	20	16.5	22	4.6	4.9	Lead Frame
AMPLA7050Q-1R0MT	1	20	15	20	6.1	6.5	Lead Frame
AMPLA7050Q-1R2MT	1.2	20	14	18	6.7	7.5	Lead Frame
AMPLA7050Q-1R5MT	1.5	20	12	16.5	8.6	9.0	Lead Frame
AMPLA7050Q-1R8MT	1.8	20	12	15	9.5	11	Lead Frame
AMPLA7050Q-2R2MT	2.2	20	10	14	11.2	12	Lead Frame
AMPLA7050Q-3R3MT	3.3	20	8.0	12	19	20.9	Lead Frame
AMPLA7050Q-4R7MT	4.7	20	6.5	10	28	30.8	Lead Frame
AMPLA7050Q-5R6MT	5.6	20	6.0	9.0	43.5	49	Lead Frame
AMPLA7050Q-6R8MT	6.8	20	5.5	8.5	46	51.5	Lead Frame
AMPLA7050Q-8R2MT	8.2	20	5.0	8.0	56	63	Lead Frame
AMPLA7050Q-100MT	10	20	4.0	7.5	60	69	Lead Frame
AMPLA7050Q-150MT	15	20	3.5	6.0	81	92	Lead Frame
AMPLA7050Q-220MT	22	20	2.5	5.5	140	170	Lead Frame
AMPLA7050Q-470MT	47	20	1.9	2.7	290	330	Lead Frame
AMPLA7050Q-560MT	56	20	1.6	2.1	342	396	Lead Frame
AMPLA7050Q-680MT	68	20	1.2	2.0	386	445	Lead Frame

\* Please refer to Part Identification Section



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MSL Level = 1

**Inductance:** 100 KHz, 1 V, 0 Adc

**Humidity Range:** 85 ± 2% RH

**Temperature Rise Current:** Current measured when  $\Delta T$  of 40°C

**Saturation Current:** Current measured when  $\Delta L$  of 30%

## General Specifications

**Operating Temperature:** -55°C to +125°C with (40°C rise) Irms current.

**Maximum Part Temperature:** +125°C

**Components Storage Temperature:** -55°C to +125°C

**Tape and Reel packaging Temperature:** -55°C to +80°C

AMPLA7050Q series is **RoHS/ RoHS II Compliant and Pb free.**

**Moisture Sensitivity Level (MSL) – Level 1**

**AEC-Q200 Qualified**

## Part Identification

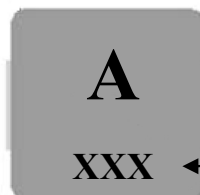
AMPLA7050Q -

**Inductance Code**  
Refer to Electrical  
Specification table  
E.g. 1R0

**Tolerance**  
M: 20%

**Packaging**  
T: 800 pcs/reel

## Marking



Inductance Code

**Marking Method = Ink Marking**



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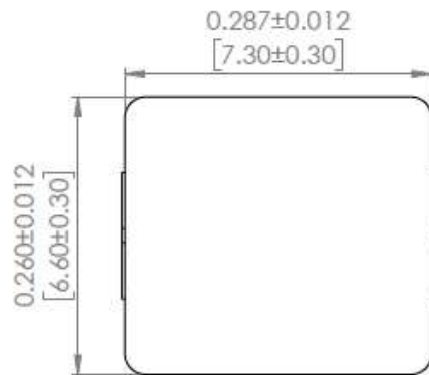


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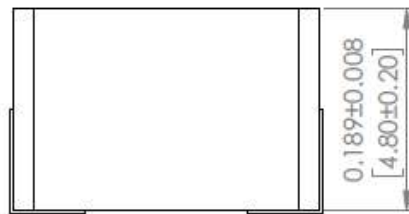
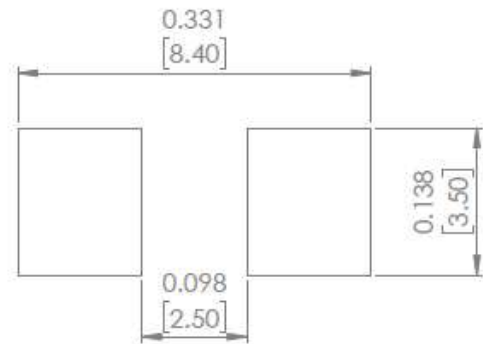
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RoHS/RoHS II Compliant  
MSL Level = 1

## Mechanical Specifications

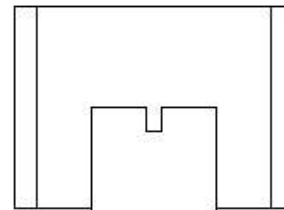


**TOP VIEW**

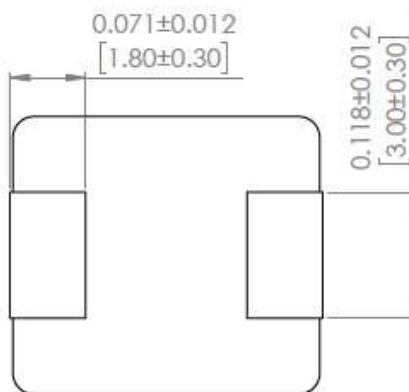
### RECOMMENDED LAND PATTERN



**FRONT VIEW**



**SIDE VIEW**



**BOTTOM VIEW**



Dimensions: mm

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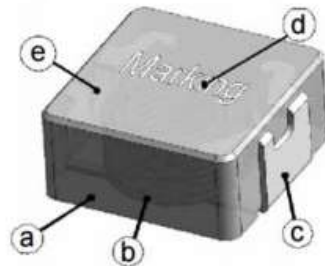


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7.3 x 6.6 x 4.8 mm  
**RoHS/RoHS II Compliant**  
MSL Level = 1

## Material Specifications



- (a) Core
- (b) Wire
- (c) Terminal
- (d) Ink
- (e) Paint

<b>a</b>	<b>Core</b>	<b>Carbonyl Powder</b>
<b>b</b>	<b>Wire</b>	<b>Copper</b>
<b>c</b>	<b>Terminal</b>	<b>Tin plating</b>
<b>d</b>	<b>Ink</b>	<b>Black</b>
<b>e</b>	<b>Paint</b>	<b>Gray</b>

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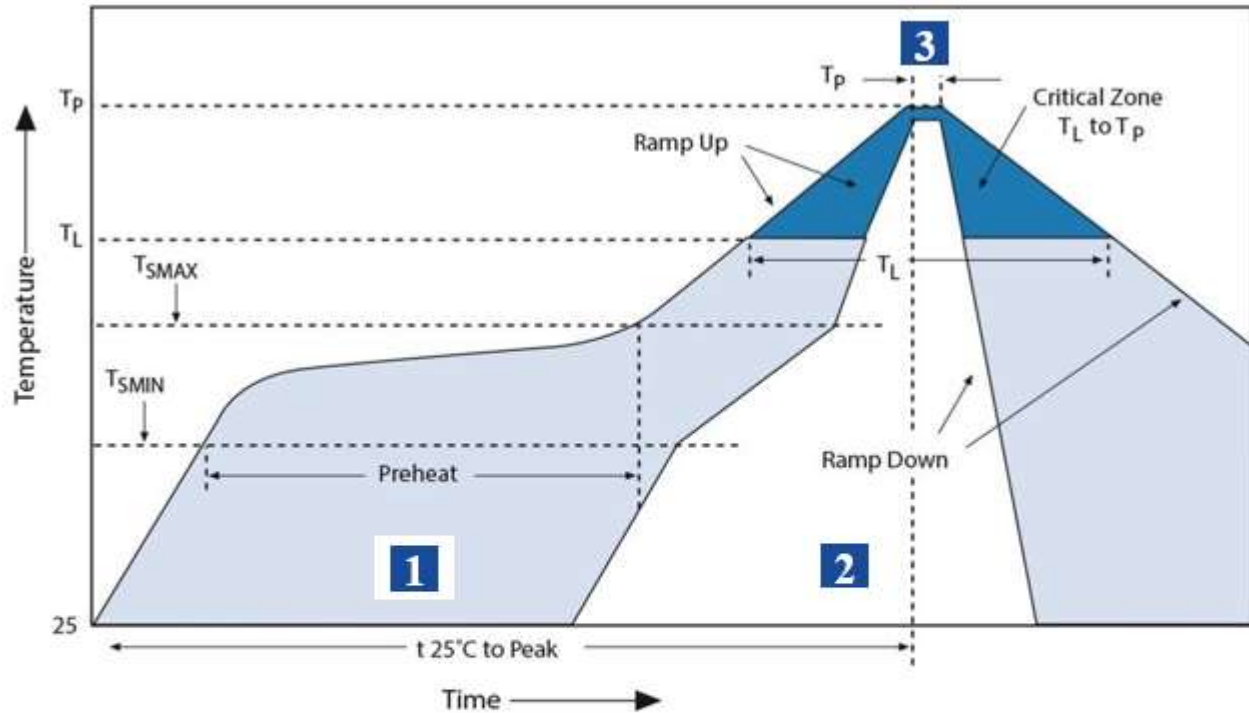


Check Inventory



7.3 x 6.6 x 4.8 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 180 sec.
2	Reflow	$T_L$ 217°C	60 ~ 150 sec.
3	Peak heat	$T_P$ 260°C	10 sec. MAX

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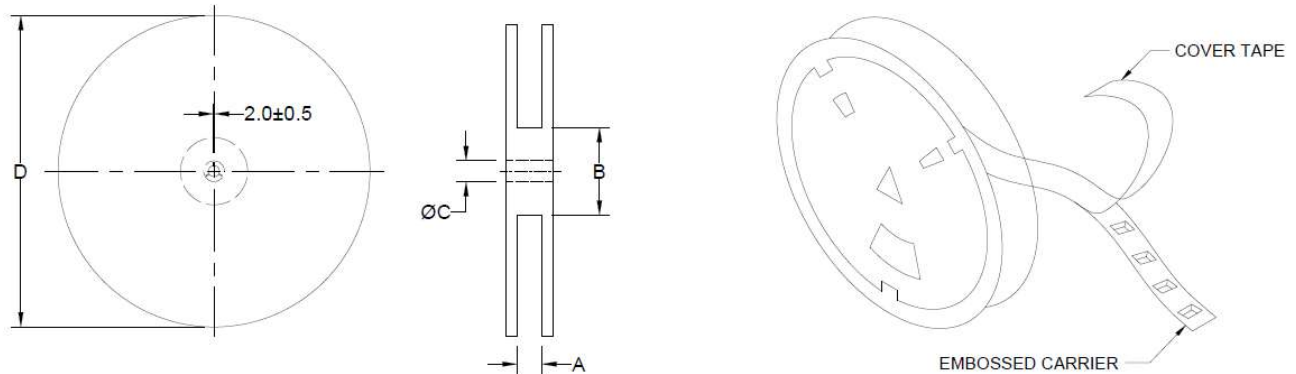
Check Inventory



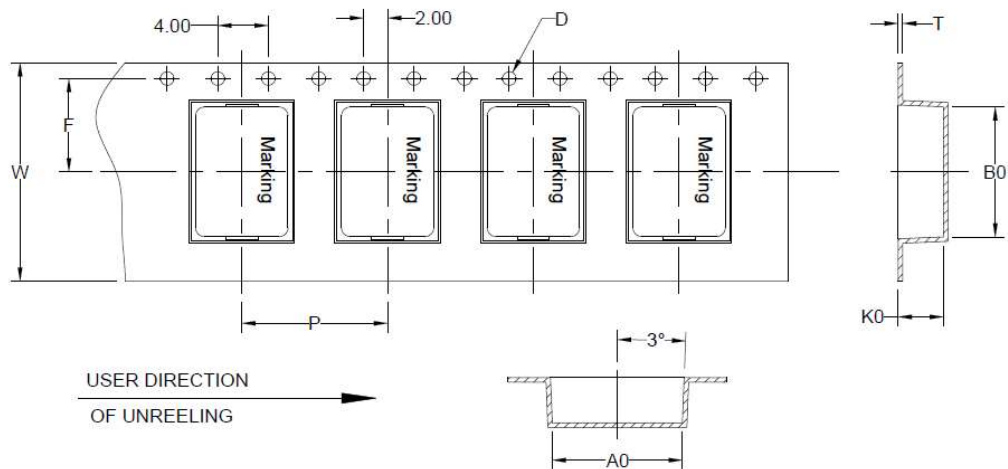
7.3 x 6.6 x 4.8 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## Packaging

Tape and Reel: 800



Type	A	B	C	D
13" x 16 mm	16.4 +2/-0	100 ± 2.0	13.0 +0.5/-0.2	330



B <sub>0</sub>	A <sub>0</sub>	K <sub>0</sub>	P	W	F	T	D
7.7 ± 0.1	7.0 ± 0.1	5.3 ± 0.1	12.0 ± 0.1	16.0 ± 0.3	7.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1

## Dimensions: mm

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## 1.0 Note

- i) The parts are manufactured in accordance with this specification. If other conditions and specifications which are required for this specification, please contact ABRACON for more information.
- ii) ABRACON will supply the parts in accordance with this specification unless we receive a written request to modify prior to an order placement.
- iii) In no case shall ABRACON be liable for any product failure from in appropriate handling or operation of the item beyond the scope of this specification.
- iv) When changing your production process, please notify ABRACON immediately.
- v) ABRACON's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. ABRACON's products are not specifically designed for Military, Aviation, Aerospace, Life-dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from ABRACON LLC. is required. Please contact ABRACON LLC for more information.

## 2.0 ABRACON LLC - TERMS & CONDITION OF SALE

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2. **Taxes:** Unless otherwise specified in the quotation, the prices do not include any taxes, import or export duties, tariffs, customs charges or any such other levies. Buyer agrees to reimburse AB the amount of any federal, state, county, municipal, or other taxes, duties, tariffs, or custom charges AB is required to pay. If Buyer is exempt from any such charges, Buyer must provide AB with appropriate documentation.
3. **Payment Terms:** For each shipment, AB will invoice Buyer for the price of the Products plus all applicable taxes, packaging, transportation, insurance and other charges. Unless otherwise stated in a separate agreement or in AB's quotation, payments are due within thirty (30) days from the date of invoice, subject to AB's approval of Buyer's credit application. All invoicing disputes must be submitted in writing to AB within ten (10) days of the receipt of the invoice accompanied by a reasonably detailed explanation of the dispute. Payment of the undisputed amounts shall be made timely. AB reserves the right to require payment in advance or C.O.D. and otherwise modified credit terms. When partial shipments are made, payments for such shipments shall become due in accordance with the above terms upon submission of invoices. If, at the request of Buyer, shipment is postponed for more than thirty (30) days, payment will become due thirty days after notice to Buyer that Products



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are ready for shipment. Any unpaid due amounts will be subject to interest at one decimal five percent (1.5%) per month, or, if less, the maximum rate allowed by law.

4. **Delivery and Shipment:** Shipment dates are estimates only. Failure to deliver by a specified date shall neither entitle Buyer to any compensation nor impose any liability on AB. AB reserves the right to ship and bill ten percent more or less than the exact quantity specified on the face hereof. All shipments will be made Ex Works as per Incoterms 2000 from AB's place of shipment. In the absence of specific instructions, AB will select the carrier. Claims against AB for shortages must be made in writing within ten (10) days after the arrival of the shipment. AB is not required to notify Buyer of the shipment. Buyer shall pay all freight charges, insurance and other shipping expenses. Freight charges, insurance and other shipping expenses itemized in advance of actual shipment, if any, are estimates only that are calculated on the basis of standard tariffs and may not reflect actual costs. Buyer must pay actual costs.
5. **Purchase Order Changes and Cancellations:** Purchase orders for standard AB Products may not be canceled within sixty (60) days of the original shipping date. Purchase orders for non-standard AB Products are non-cancelable and non-returnable. All schedule changes must be requested at least thirty (30) days prior to original shipping date. Maximum schedule change "push-out" shall be no more than thirty (30) days from original shipping date. AB may terminate or cancel this order, in whole or in part, at any time prior to the completion of performance by written notice to Buyer without incurring any liability to Buyer for breach of contract or otherwise. AB reserves the right to allocate Products in its sole discretion among Buyer and other potential buyers, or defer or delay the shipment of any Product, which is in short supply due to any reason.
6. **Title and Risk of Loss:** AB's responsibility for any loss or damage ends, and title passes, when Products are delivered Ex Works as per Incoterms 2000 at AB's designated shipping location to carrier, to Buyer or to Buyer's agent, whichever occurs first.
7. **Packing:** Packaging shall be AB's standard shipping materials or as specified on the face hereof. Any cost of non-standard packaging and handling requested by Buyer shall be abided by AB provided Buyer gives reasonable prior notice and agrees in writing to pay additional costs.
8. **Security Interest:** Buyer hereby grants AB a purchase money security interest in the Products sold and in the proceeds of resale of such Products until such time as Buyer has paid all charges. AB retains all right and remedies available to AB under the Uniform Commercial Code.
9. **Specifications:** Specifications for each Product are the specifications specified in the published datasheets of such Product, as of the date of AB's quotation (the "Specifications"). Except as otherwise agreed, AB reserves the right to modify the Specifications at any time without adversely affecting the functionality.
10. **Acceptance:** Unless Buyer notifies AB in writing within ten (10) days from the date of receipt of Products that the Products fail to conform to the Specifications, the Products will be deemed accepted by Buyer. No such claim of non-conformity shall be valid if (i) the Products have been altered, modified or damaged by Buyer, (ii) the rejection notice fails to explain the non-conformance in reasonable detail and is not accompanied by a test report evidencing the non-conformity, or (iii) rejected Products are not returned to AB within thirty (30) days of rejection; provided, that no Product returns may be made without a return material authorization issued by AB.
11. **Limited Warranties and Disclaimers:** AB warrants to Buyer that each Product, for a period of twelve (12) months from shipment date thereof, will conform to the Specifications and be free from defects in materials and workmanship. AB's sole liability and Buyer's exclusive remedy for Products that fail to conform to this limited warranty ("Defective Products") is limited to repair or replacement of such Defective Products, or issue a credit or rebate of no more than the purchase price of such Defective Products, at AB's sole option and election. This warranty shall not apply: (i) if Products have been damaged or submitted to abnormal conditions (mechanical, electrical, or thermal) during transit, storage, installation, or use; or (ii) if Products are subject to Improper Use (as defined below); or (iii) if the non-conformance of Products results from misuse, neglect, improper testing, storage, installation, unauthorized repair, alteration, or excess usage at or beyond the maximum values (temperature limit, maximum voltage, and other Specification limits) defined by AB; (iv) to any other default not attributable to AB; or (v) removal, alteration, or tampering of the original AB product labeling. This warranty does not extend



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14. **Miscellaneous:** In the event of any insolvency or inability to pay debts as they become due by Buyer, or voluntary or involuntary bankruptcy proceeding by or against Buyer, or appointment of a receiver or assignee for the benefit of creditors of Buyer, AB may elect to cancel any unfulfilled obligations. No Products or underlying information or technology may be exported or re-exported, directly or indirectly, contrary to US law or US Government export controls. AB will be excused from any obligation to the extent performance thereof is caused by, or arises in connection with, acts of God, fire, flood, riots, material shortages, strikes, governmental acts, disasters, earthquakes, inability to obtain labor or materials through its regular sources, delay in delivery by AB's supplies or any other reason beyond the reasonable control of AB. In the event any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision hereof and these terms shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein. A waiver of a breach or default under these terms shall not be a waiver of any subsequent default. Failure of AB to enforce compliance with any of these terms shall not constitute a waiver of such terms. These terms are governed by the laws of the State of California without reference to conflict of law principles. The federal and state courts located within the State of California will have exclusive jurisdiction to adjudicate any dispute arising out of these terms.



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