MND-06CZE1R8M-XB-RU Datasheet

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DiGi Electronics Part Number	MND-06CZE1R8M-XB-RU-DG
Manufacturer	Mag Layers
Manufacturer Product Number	MND-06CZE1R8M-XB-RU
Description	FIXED IND 1.8UH 14A 10.52 MOHM S
Detailed Description	1.8 µH Shielded Molded Inductor 14 A 10.5mOhm Max Nonstandard

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MND-06CZE1R8M-XB-RU	Mag Layers
Series:	Product Status:
XB	Active
Type:	Material - Core:
Molded	Metal
Inductance:	Tolerance:
1.8 µH	±20%
Current Rating (Amps):	Shielding:
14 A	Shielded
DC Resistance (DCR):	Q @ Freq:
10.5mOhm Max	-
Frequency - Self Resonant:	Ratings:
-	-
Operating Temperature:	Inductance Frequency - Test:
-55°C ~ 125°C	100 kHz
Features:	Mounting Type:
-	Surface Mount
Package / Case:	Supplier Device Package:
Nonstandard	-
Size / Dimension:	Height - Seated (Max):
0.157" L x 0.157" W (4.00mm x 4.00mm)	0.118" (3.00mm)

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH info available upon request	EAR99
HTSUS:	
8504.50.4000	

APPROVAL SHEET (RoHS)

CUSTOMER :

CUSTOMER'S PART NO :

DESCRIPTION :

PART NO. : MND-06CZE1R8M-XB-RU

DATE : 2021/08/03

AUTHORIZED BY : *SGT*

	FULLY APPROVED	PARTIALLY APPROVED	REJECTED
SIGN			
SUGGESTION			

MAG. LAYERS USA
US OFFICE
5406 Bolsa Avenue, Huntington Beach, CA 92649, USA
TEL: (714) 898-8377 FAX: (714) 898-8399
http://www.maglayersusa.com
E-mail：info@maglayersusa.com

Part number				Spec. number.	
MND-06CZE1R8M-XB-RU				11218187	
Revision history					
Rev.	Date	Description	Approved by	Checked by	Author
01	7/16/2020	Final release	Mark	Andy	Irene

Application

DC to DC converter

Features

RoHS compliant & halogen free

Low resistance and high current rating

Magnetic core made by high performance magnetic metal powder

Product Identification

①	②	③	④	⑤	⑥
MND -	06CZ	E 1R8	M -	XB -	R U

① Product Code

② Dimensions

③ Inductance: 1R8 = 1.8 μH

④ Inductance Tolerance: M = ±20%

⑤ Series Type: XB Type

⑥ Pattern code-RT, RU Blank

Note: Please refer to the “Product Dimension” for detail dimensions.

Electrical Performance

Part number	Inductance ±20%@0A (μH)	Rdc(mΩ)		Heat rating current (Idc)[1] DC amps (A)	Saturation current (Isat)[2] DC amps (A)
		Typ.	Max.		
MND-06CZE1R8M-XB-RU	1.8	9.57	10.52	14.0	18.2

Test frequency: 100KHz, 0.25V.

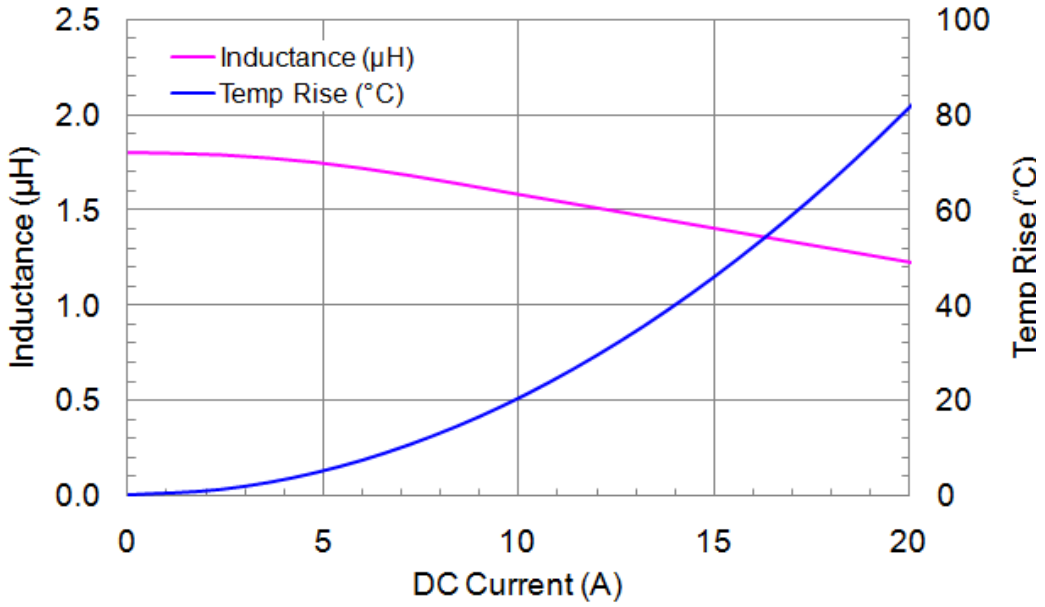
Test instruments: Inductance/saturation current: Keysight 4285A or equivalent.

Rdc: ADEX AX1152D or equivalent.

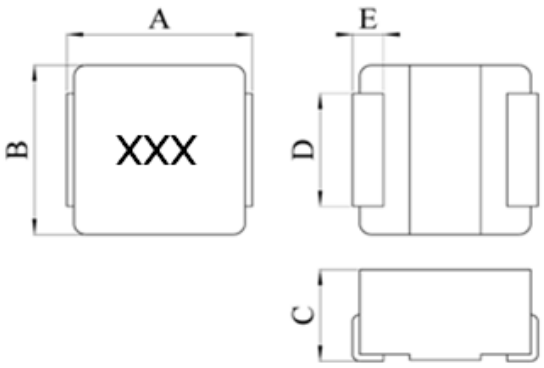
Notes:

1. The heat rating current (Idc) will cause temperature rise approximate 40°C.
2. The saturation current (Isat) will cause initial inductance drop approximate 30%.
3. All test data is referenced at 25°C ambient.
4. Operating temperature range -55°C to +125°C.
5. The part temperature (ambient + temp rise) should not exceed 125°C under the worst condition.
6. The temperature of component is affected by application conditions, e.g. circuit design, copper thickness of PCB and cooling conditions, the actual component temperature should be tested in the end application.
7. Withstand voltage: 25V DC. (Based on Maglayers test method, it may not the same under different application, it is recommended to verify first.)

Electrical Characteristics



Product Dimension

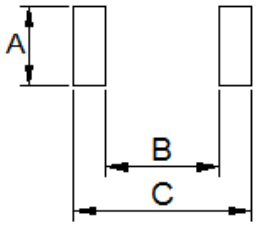


Code: XXX = 1R8 = 1.8 μH

Dimension / Part number	A	B	C	D	E
MND-06CZE1R8M-XB-RU	6.36 ± 0.2	6.56 ± 0.2	3.0 Max	4.7 ± 0.2	1.4 ± 0.5

Unit: mm

Recommended PCB Layout



Type	06CZ
A	5.0
B	2.61
C	6.7

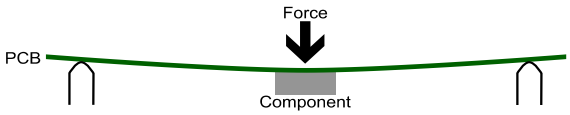
Unit: mm

Safety precaution

1. Do not make any through holes and copper pattern in the dotted line area. Except a copper pattern to the electrode.
2. Don’t design/mount any components in contact with this product.

This power choke do not have any protective function in abnormal condition such as overload, short circuit, open conditions and etc, it shall be confirmed as the end product that there is no risk of smoking, fire, dielectric withstand voltage, insulation resistance etc. in abnormal conditions to provide protective devices and/or protection circuit in the end product.It is recommended the temperature rise of choke during operation is less than 50°C.

Reliability Test

Electrical performance test		
Item	**Specification**	**Test method**
Inductance	Refer to the electrical specifications.	Measured with Keysight 4285A or equivalent.
DC Resistance		Measured with ADEX AX-1152D or equivalent.
Saturation current		DC current that will cause initial inductance drop (environment temperature of 25°C).
Heat rating current		DC current that will cause temperature rise (environment temperature of 25°C).
Mechanical performance test		
Item	**Specification**	**Test method**
Bending	Inductance variation within ±10 %	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 2mm and hold for 30 seconds. Board length/width: 40 x 100 mm, thickness: 1 mm. 
Adhesion strength	Inductance variation within ±10 %	Apply 1.8 Kg force with R0.5mm pressing tool to the side of component for 60 +1 seconds.
Vibration	Inductance variation within ±10 %	The specimen be subjected to a vibration of 1.5 mm amplitude, sweep frequency 10 - 55 Hz (10 Hz to 55 Hz to 10Hz in a period of one minute) for 2 hours in each 3 (X, Y, Z) axes.
Mechanical	Inductance variation	Drop on PCB from 100 cm height three times in X, Y,

Mechanical shock	Inductance variation within ±10 %	Z directions, the terminals shall be protected before dropping.
Solderability	New solder shall covered with 90 % minimum on the surface	Immerse electrodes in flux at room temperature then immerse in solder bath after preheat. Preheat: 160±10°C, 90±3 seconds. Soldering: 245±5°C, 3±1 seconds.

Resistance to soldering heat	Inductance variation within ±10 %	IR reflow soldering method: Preheat: 150~180°C for 90~120 seconds. Peak temp: 260°C (over 230°C for 30~40 seconds) The specimen shall be subjected to above IR reflow for 2 times. Test board: 0.8mm thickness FR4. Measurement: The specimen shall be stored at room temperature for 1 hour then measuring.
Climatic test		
Item	**Specification**	**Test method**
High temperature exposure	Inductance variation within ±10 %	Place specimen in test chamber with 125°C ambient temperature for 1,000 hours, then stabilize under room temperature for 24±4 hours before measurement.
Temperature cycling	Inductance variation within ±10 %	Place specimen in test chamber for 1,000 cycles, each temperature cycle as below: Temperature / Duration -55°C / 30 minutes 125°C / 30 minutes Ramp: -55~125°C / <1 minutes then stabilize under room temperature for 24±4 hours before measurement.
High temperature humidity	Inductance variation within ±10 %	Place specimen in test chamber with 85°C, 85% relative humidity for 1,000 hours, then stabilize under room temperature for 24±4 hours before measurement.

Operational life	Inductance variation within ±10 %	Place specimen in temperature controlled chamber then apply Idc. current and adjust ambient temperature until temperature of inductor reach 125°C for 1,000 hours, then stabilize under room temperature for 24±4 hours before measurement.

Note:

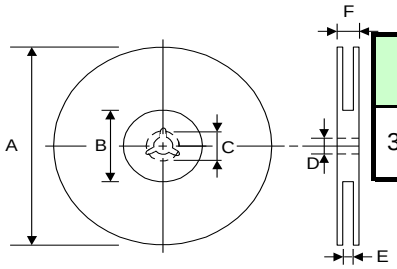
Storage condition: the temperature should be within -40°C~85°C and humidity should be less than 75%RH. The product should be used within 6 months from the time of delivery.

Packaging

Peel-off force

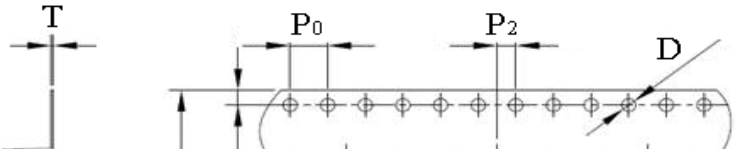
The peel off force of cover tape is 10 to 70 grams in the arrow direction.

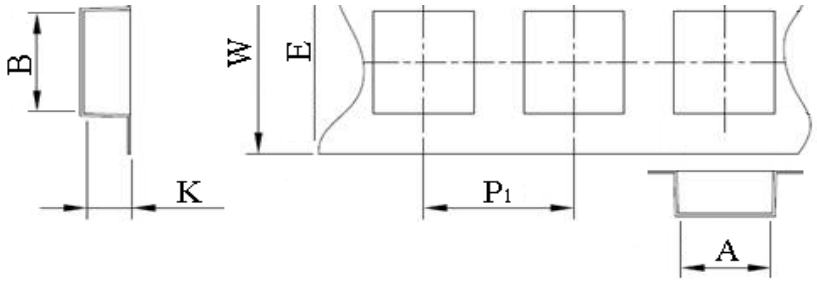
Dimensions



Type	A	B	C	D	E	F
330mm	330±2	100±1	21.5±0.5	13±1.0	16.4 +2.0/-0	21.4±2

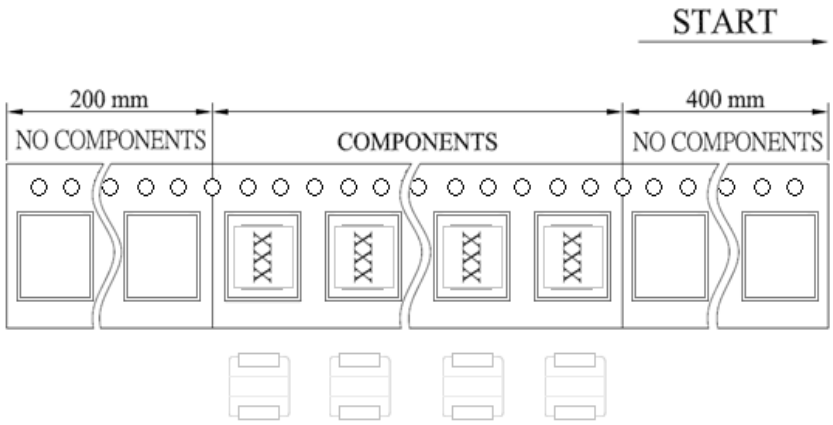
Unit: mm





TYPE	SIZE	A	B	W	P_1	K
MND	06CZ	6.8±0.1	7.1±0.1	16.0±0.3	12.0±0.1	3.4±0.1
		P_0	P_2	D	E	T
		4.0±0.1	2.0±0.1	1.5±0.1	1.75±0.1	0.35±0.05

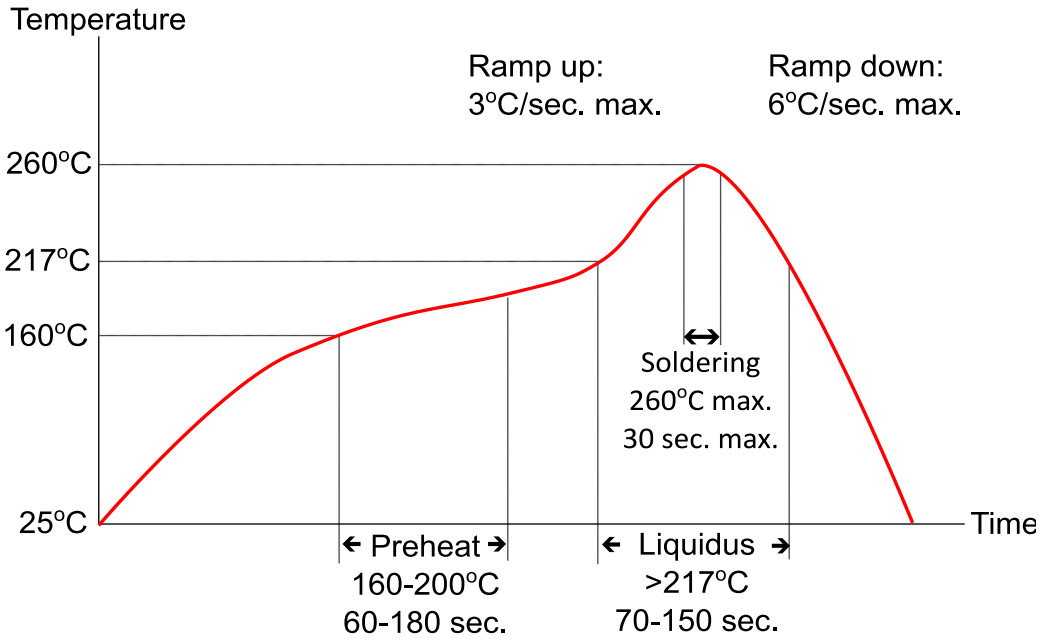
Unit: mm



Taping quantity

Series	06CZ
PCS/Reel	1000

Recommended Reflow Soldering Profile



1. **IR reflow soldering:**

   Ramp up rate: 3°C per second (max.)
   Ramp down rate: 6°C per second (max.)

Preheat temperature: 160-200°C, 60-180 seconds
Liquidus temperature: above 217°C, 70-150 seconds
Peak temperature: 260°C (max.), 30 seconds (max.)

2. **Rework flow:**

Component can withstand 3 IR reflow cycles with a cool down between each cycle.

Notes

The contents of this data sheet are subject to change without notice, please confirm the specifications and delivery conditions when placing your order.

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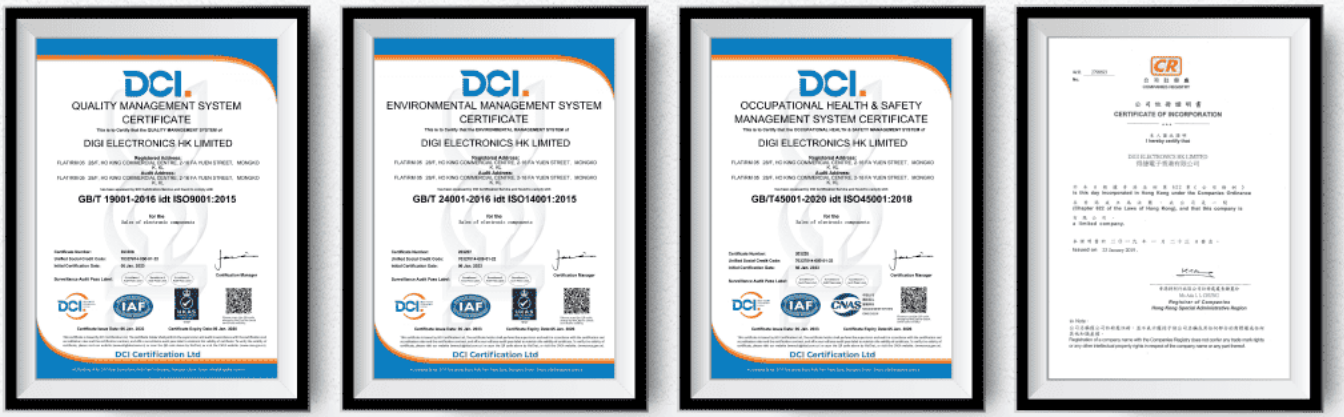

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