

## Specification Sheet

### CIGT252010LMR47MNE (2520 / EIA 1008)

#### APPLICATION

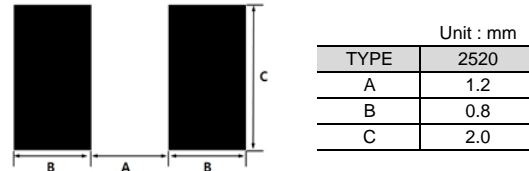
Smart phones, Tablet, Wearable devices, Power converter modules, etc.



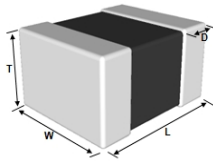
#### FEATURES

Small power inductor for mobile devices  
Low DCR structure and high efficiency inductor for power circuits.  
Monolithic structure for high reliability  
Free of all RoHS-regulated substances  
Halogen free

#### RECOMMENDED LAND PATTERN



#### DIMENSION



TYPE	Dimension [mm]			
	L	W	T	D
2520	2.5±0.2	2.0±0.2	1.0 max	0.55±0.25

#### DESCRIPTION

Part no.	Size [inch/mm]	Thickness [mm] (max)	Inductance [uH]	Inductance tolerance (%)	DC Resistance [mΩ]		Rated DC Current (Isat) [A]		Rated DC Current (Irms) [A]	
					Max.	Typ.	Max.	Typ.	Max.	Typ.
CIGT252010LMR47MNE	1008/2520	1.0	0.47	±20	29	24	5	6	4.2	4.5

\* Inductance : Measured with a LCR meter 4991A(Agilent) or equivalent (Test Freq. 1MHz, Level 0.1V)

\* DC Resistance : Measured with a Resistance HI-TESTER 3541(HIOKI) or equivalent

\* Maximum allowable DC current : Value defined when DC current flows and the initial value of inductance has decreased by 30% or when current flows and temperature has risen to 40°C whichever is smaller. (Reference: ambient temperature is 25°C±10)

(Isat) : Allowable current in DC saturation : The DC saturation allowable current value is specified when the decrease of the initial inductance value at 30% (Reference: ambient temperature is 25°C±10)

(Irms) : Allowable current of temperature rise : The temperature rise allowable current value is specified when temperature of the inductor is raised 40°C by DC current. (Reference: ambient temperature is 25°C±10)

\* Absolute maximum voltage : Rated Voltage 20V.

\* Operating temperature range : -40 to +125°C (Including self-temperature rise)

#### PRODUCT IDENTIFICATION

**CIG**   **I**   **2520**   **10**   **LM**   **R47**   **M**   **N**   **E**  
**(1)**   **(2)**   **(3)**   **(4)**   **(5)**   **(6)**   **(7)**   **(8)**   **(9)**

(1) Power Inductor

(3) Dimension (2520: 2.5mm x 2.0mm)

(5) Remark (Characterization Code)

(7) Tolerance (M:±20%)

(8) Internal Code

(9) Packaging (C:paper tape, E:embossed tape)

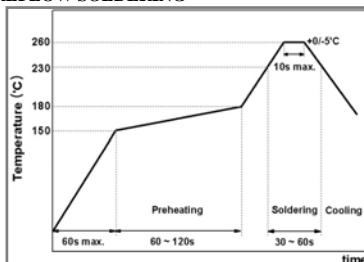
(2) Type (T: Metal Composite Thin Film Type)

(4) Thickness (10: 1.0mm)

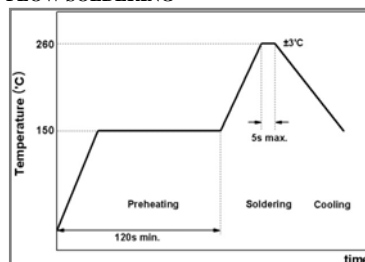
(6) Inductance (R47: 0.47 uH)

#### RECOMMENDED SOLDERING CONDITION

##### REFLOW SOLDERING



##### FLOW SOLDERING



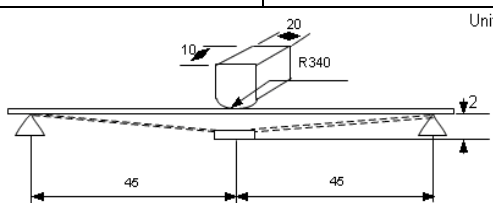
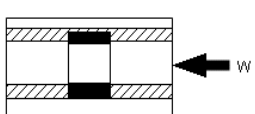
##### IRON SOLDERING

Temperature of Soldering Iron Tip	280°C max.
Preheating Temperature	150°C min.
Temperature Differential	ΔT ≤ 130°C
Soldering Time	3sec max.
Wattage	50W max.

#### PACKAGING

Packaging Style	Quantity(pcs/reel)
Embossed Taping	3000 pcs

## Reliability Test

Item	Specified Value	Test Condition
Solderability	More than 90% of terminal electrode should be soldered newly.	After being dipped in flux for 4±1 seconds, and preheated at 150~180℃ for 2~3 min, the specimen shall be immersed in solder at 245±5℃ for 4±1 seconds.
Resistance to Soldering	No mechanical damage. Remaining terminal Electrode: 75% min. Inductance change to be within ±20% to the initial.	After being dipped in flux for 4±1 seconds, and preheated at 150~180℃ for 2~3 min, the specimen shall be immersed in solder at 260±5℃ for 10 ±0.5 seconds.
Thermal Shock (Temperature Cycle test)	No mechanical damage Inductance change to be within ±20% to the initial.	Repeat 100 cycles under the following conditions. -40±3℃ for 30 min → 85±3℃ for 30 min
High Temp. Humidity Resistance Test	No mechanical damage Inductance change to be within ±20% to the initial	85±2℃, 85%RH, for 500±12 hours. Measure the test items after leaving at normal temperature and humidity for 24 hours.
Low Temperature Test	No mechanical damage Inductance change to be within ±20% to the initial.	Solder the sample on PCB. Exposure at -55±2℃ for 500±12 hours. Measure the test items after leaving at normal temperature and humidity for 24hours.
High Temperature Test	No mechanical damage Inductance change to be within ±20% to the initial.	Solder the sample on PCB. Exposure at 125±2℃ for 500±12 hours. Measure the test items after leaving at normal temperature and humidity for 24hours.
High Temp. Humidity Resistance Loading Test	No mechanical damage Inductance change to be within ±20% to the initial	85±2℃, 85%RH, Rated Current for 500±12 hours. Measure the test items after leaving at normal temperature and humidity for 24 hours.
High Temperature Loading Test	No mechanical damage Inductance change to be within ±20% to the initial	85±2℃, Rated Current for 500±12 hours. Measure the test items after leaving at normal temperature and humidity for 24 hours.
Reflow Test	No mechanical damage Inductance change to be within ±20% to the initial	Peak 260±5℃, 3 times
Vibration Test	No mechanical damage Inductance change to be within ±20% to the initial.	Solder the sample on PCB. Vibrate as apply 10~55Hz, 1.5mm amplitude for 2 hours in each of three(X,Y,Z) axis (total 6 hours).
Bending Test	No mechanical damage	Bending Limit; 2mm Test Speed; 1.0mm/sec. Keep the test board at the limit point in 5 sec. PCB thickness : 1.6mm
	 <p style="text-align: right;">Unit :mm</p>	
Terminal Adhesion Test	No indication of peeling shall occur on the terminal electrode.	W(kgf)
		0.5
		
Drop Test	No mechanical damage Inductance change to be within ±20% to the initial.	Random Free Fall test on concrete plate. 1 meter, 10 drops

### 1. Model : CIGT252010LMR47MNE

### 2. Description

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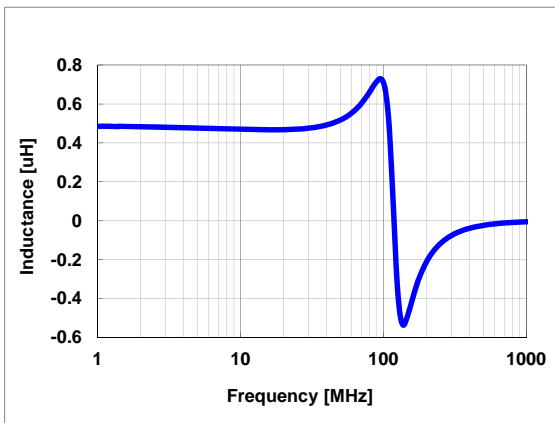
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\* Operating temperature range : -40 to +125°C (Including self-temperature rise)

### 3. Characteristics data

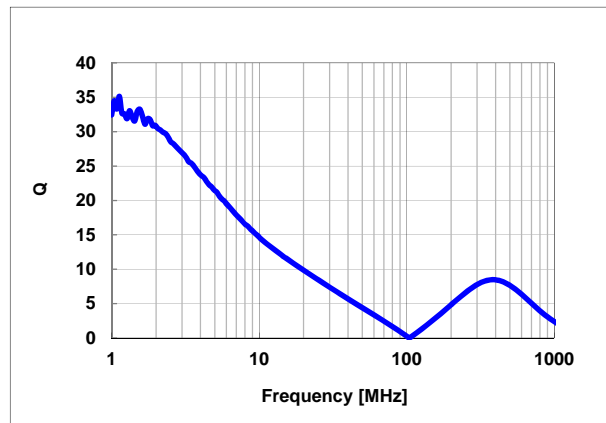
#### 1) Frequency characteristics (Ls)

Agilent E4294A +E4991A , 1MHz to 1,000MHz

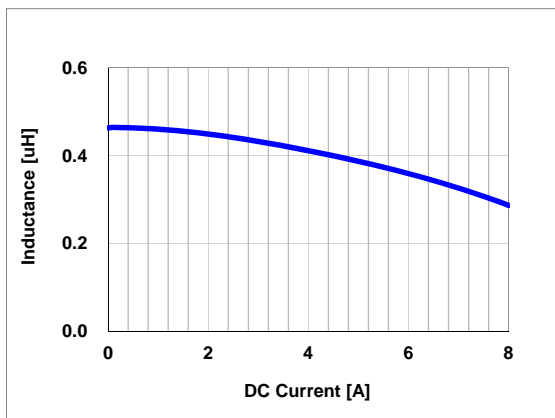


#### 2) Frequency characteristics (Q)

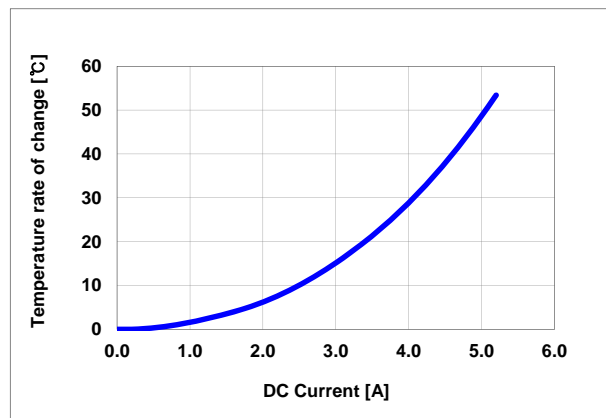
Agilent E4294A +E4991A , 1MHz to 1,000MHz



#### 3) DC Bias characteristics (Typ.)



#### 4) Temperature characteristics (Typ.)



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The data sheets include the typical data for design reference only. If there is any question regarding the data sheets, please contact our sales personnel or application engineers

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