High Frequency Chip Inductor (Lead Free) HCI1005LF-39NJ-MS8

ECN HISTORY LIST

REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
1.0	17/06/27	初版發行	楊祥忠	詹偉特	張嘉玲
備註					

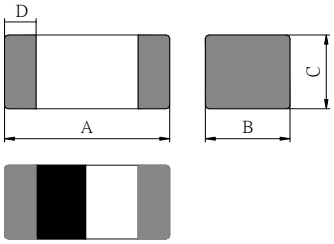
High Frequency Chip Inductor (Lead Free) HCI1005LF-39NJ-MS8

1.Features

1. Monolithic inorganic material construction.
2. Closed magnetic circuit avoids crosstalk.
3. S.M.T. type.
4. Suitable for reflow soldering.
5. Shapes and dimensions follow E.I.A. spec.
6. Available in various sizes.
7. Excellent solder ability and heat resistance.
8. High SRF up to 6GHz and above.
9. 100% Lead(Pb) & Halogen-Free and RoHS compliant.

Halogen-free Pb-free Certificate of Green Partner

2. Dimensions



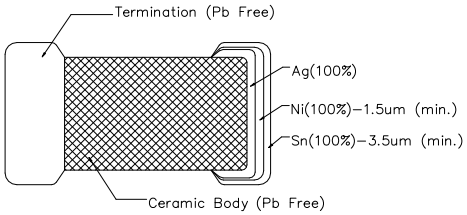
Chip Size	
A	1.00±0.15
B	0.50±0.15
C	0.50±0.15
D	0.25±0.10

Units: mm

3. Part Numbering

HCI	1005	L	F	-	39N	J	-	MS8
A	B	C	D		E	F		G

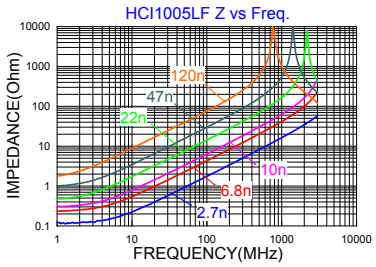
A: Series
B: Dimension L x W
C: Category Code
D: Material Lead Free Material
E: Inductance 39N=39 nH
F: Inductance Tolerance J=±5%
G: marking

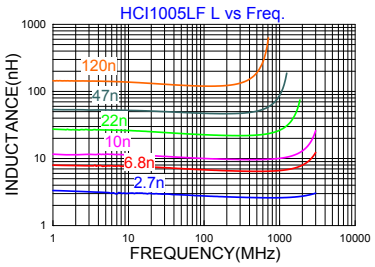


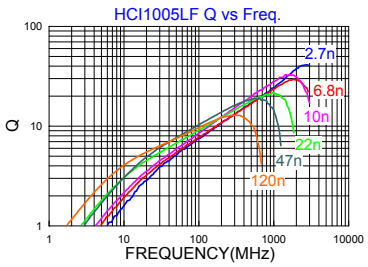
4.Specification

Tai-Tech Part Number	Inductance (nH)	Test Frequency (Hz)	Q min.	Rated Current (mA) max	DCR (Ω) max.	SRF (MHz) min.
HCI1005LF-39NJ-MS8	39±5%	100M / 50mV	8	200	1.00	1200

- Rated current: based on temperature rise test
- In compliance with EIA 595





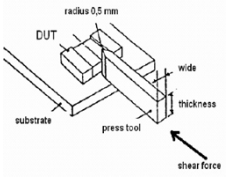


5. Reliability and Test Condition

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Series No.</td><td>HCI</td><td>--</td></tr>
<tr><td>Operating Temperature</td><td>-40~+105℃
(Including self-temperature rise)</td><td>--</td></tr>
<tr><td>Transportation
Storage Temperature</td><td>-40~+105℃
(on board)</td><td>For long storage conditions, please see the Application Notice</td></tr>
<tr><td>Inductance (Ls)</td><td rowspan="4">Refer to standard electrical characteristics list</td><td>Agilent4291
Agilent E4991</td></tr>
<tr><td>Q Factor</td><td>Agilent4287
Agilent16192</td></tr>
<tr><td>DC Resistance</td><td>Agilent 4338</td></tr>
<tr><td>Rated Current</td><td>DC Power Supply
Over Rated Current requirements, there will be some risk</td></tr>
<tr><td>Temperature Rise Test</td><td>Rated Current < 1A ΔT 20℃Max
Rated Current ≧ 1A ΔT 40℃Max</td><td>1. Applied the allowed DC current.
2. Temperature measured by digital surface thermometer.</td></tr>
<tr><td>Life test</td><td rowspan="2">Appearance: no damage.

Impedance: within±15%of initial value.
Inductance: within±10%of initial value.
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles)
Temperature: 105±2℃
Applied current: rated current.
Duration: 1000±12hrs.
Measured at room temperature after placing for 24±2 hrs.</td></tr>
<tr><td>Load Humidity</td><td>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles)
Humidity: 85±2%R.H.
Temperature: 85±2℃.
Duration: 1000hrs Min. with 100% rated current.
Measured at room temperature after placing for 24±2 hrs.</td></tr>
<tr><td>Thermal shock</td><td>Appearance: no damage.

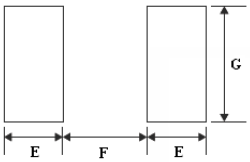
Impedance: within±15%of initial value.
Inductance: within±10%of initial value.
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles)
Condition for 1 cycle
Step1: -40±2℃ 30±5 min.
Step2: 25±2℃ ≦0.5min
Step3: +105±2℃ 30±5min.
Number of cycles: 500
Measured at room temperature after placing for 24±2 hrs.</td></tr>
<tr><td>Vibration</td><td>Appearance：No damage.
Impedance：within±15% of initial value
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles)
Oscillation Frequency: 10～2K～10Hz for 20 minutes
Equipment： Vibration checker
Total Amplitude:1.52mm±10%
Testing Time：12 hours(20 minutes, 12 cycles each of 3 orientations)。</td></tr>
<tr><td>Bending</td><td>Appearance：No damage.
Impedance：within±10% of initial value
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions:
>=0805inch(2012mm):40x100x1.2mm
<0805inch(2012mm):40x100x0.8mm
Bending depth:
>=0805inch(2012mm):1.2mm
<0805inch(2012mm):0.8mm
Duration of 10 sec for a min.</td></tr>
<tr><td>Shock</td><td>Appearance：No damage.
Impedance：within±10% of initial value
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Test condition:<table><tr><th>Type</th><th>Peak Value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr><tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr><tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr></table></td></tr>
<tr><td>Insulation Resistance</td><td>IR>1GΩ</td><td>Chip Inductor Only
Test Voltage:100±10%V for 30Sec.</td></tr>
</table>

Item	Performance	Test Condition
Solderability	More than 95% of the terminal electrode should be covered with solder.	Preheat: 150℃,60sec. Solder: Sn96.5%-Ag3%-Cu0.5% Solder temperature: 245±5℃ Flux for lead free: Rosin. 9.5% Depth: completely cover the termination. Dip time: 4±1sec.
Resistance to Soldering Heat	Appearance：No damage. Impedance：within±15% of initial value Inductance：within±10% of initial value Q：Shall not exceed the specification value. RDC：within ±15% of initial value and shall not exceed the specification value	Number of heat cycles: 1 Temperature (°C) / Time (s) / Temperature ramp/immersion and emersion rate 260 ±5 (solder temp) / 10 ±1 / 25mm/s ±6 mm/s Depth: completely cover the termination
Terminal strength	Appearance：No damage. Impedance：within±15% of initial value Inductance：within±10% of initial value Q：Shall not exceed the specification value. RDC：within ±15% of initial value and shall not exceed the specification value 	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Component mounted on a PCB apply a force >0805inch(2012mm):1kg <=0805inch(2012mm):0.5kg to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to shock the component being tested.

6.Soldering and Mounting

6-1. Recommended PC Board Pattern

Chip Size						Land Patterns For Reflow Soldering		
Series	**Type**	**A(mm)**	**B(mm)**	**C(mm)**	**D(mm)**	**E(mm)**	**F(mm)**	**G(mm)**
HCI	1005	1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.10	0.50	0.40	0.60



PC board should be designed so that products can prevent damage from mechanical stress when warping the board.

6-2. Soldering

Mildly activated rosin fluxes are preferred. The terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

Note.

If wave soldering is used ,there will be some risk.

Re-flow soldering temperatures below 240 degrees, there will be non-wetting risk

6-2.1 Lead Free Solder re-flow:

Recommended temperature profiles for lead free re-flow soldering in Figure 1. (Refered to J-STD-020C)

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Fixed Inductors ***category:***

Click to view products by TAITEC ***manufacturer:***

Other Similar products are found below :

CR32NP-151KC CR32NP-180KC CR32NP-181KC CR32NP-1R5MC CR32NP-390KC CR32NP-3R9MC CR32NP-680KC CR32NP-820KC CR32NP-8R2MC CR43NP-390KC CR43NP-560KC CR43NP-680KC CR54NP-181KC CR54NP-470LC CR54NP-820KC CR54NP-8R5MC 70F224AI MGDQ4-00004-P MHL1ECTTP18NJ MHQ1005P10NJ MHQ1005P1N0S MHQ1005P2N4S MHQ1005P3N6S MHQ1005P5N1S MHQ1005P8N2J PE-51506NL PE-53601NL PE-53602NL PE-53630NL PE-53824SNLT PE-92100NL PG0434.801NLT PG0936.113NLT 9220-20 9310-16 PM06-2N7 PM06-39NJ A01TK 1206CS-471XJ HC2LP-R47-R HC2-R47-R HC3-2R2-R HCF1305-3R3-R 1206CS-151XG RCH664NP-140L RCH664NP-4R7M RCH8011NP-221L RCP1317NP-332L RCP1317NP-391L RCR1010NP-470M