

REVISIONS

DOC. NO. SPC-F005 * Effective: 7/8/02 * DCP No: 1398

| DCP # | REV | DESCRIPTION | DRAWN | DATE | CHECKD | DATE | APPRVD | DATE |
|-------|-----|-------------|-------|----------|--------|----------|--------|----------|
| 2048 | A | RELEASED | JN | 05/21/09 | JWM | 05/21/09 | JWM | 05/21/09 |
| | | | | | | | | |

Features

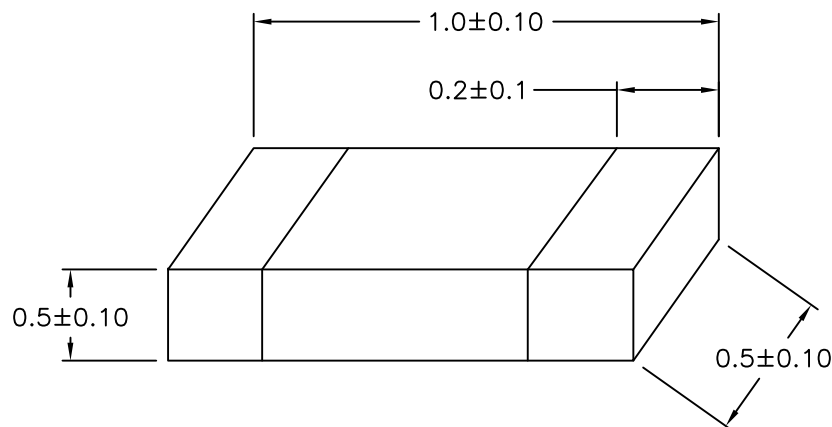
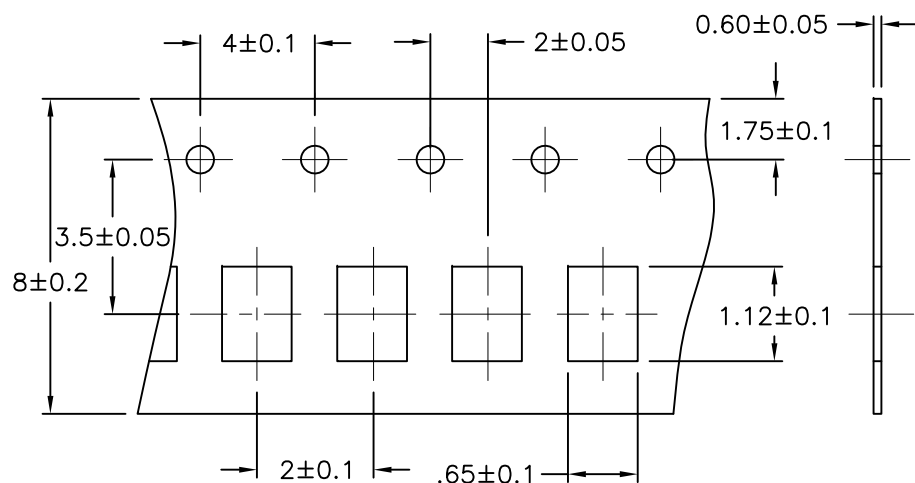
- A ceramic material construction for high frequency application up to 10GHz
- Tight tolerance physical dimensions($\pm 0.05\text{mm}$)
- Tight inductance tolerance and excellent Q value

Application

- High Frequency Application
- Cellular Phone, Pager
- EMI countermeasure in High Frequency Circuits and computer Communication.
- WLAN and RF module



Tape Dimension



DISCLAIMER:
ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE. SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.

TOLERANCES:

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

DRAWN BY:

Jason Nash

CHECKED BY:

JWM

APPROVED BY:

JWM

DATE:

05/21/09

DATE:

05/21/09

DATE:

05/21/09

DRAWING TITLE:

Multilayer Chip Inductor – Case size 0402

SIZE DWG. NO.

A

Ta-1126

ELECTRONIC FILE

Ta-1126.DWG

REV

A

SCALE: NTS

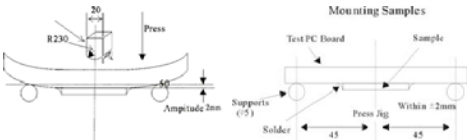
U.O.M.: Millimeters

SHEET: 1 OF 2

Parts & Electrical Specification Table

| Mfr PN | Inductance | Inductance Tolerance | DC Resistance Max | DC Current Rating | Self Resonant Frequency | Package | Q Factor | Test Frequency |
|------------|------------|----------------------|-------------------|-------------------|-------------------------|---------|-------------|----------------|
| MCFT000030 | 10nH | ± 5% | 0.42ohm | 300mA | 3.2GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000031 | 15nH | ± 5% | 0.55ohm | 300mA | 2.3GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000032 | 22nH | ± 5% | 0.8ohm | 300mA | 1.6GHz | 402 | Q Factor:12 | 100MHz |
| MCFT000033 | 33nH | ± 5% | 1ohm | 200mA | 1.2GHz | 402 | Q Factor:12 | 100MHz |
| MCFT000034 | 47nH | ± 5% | 1.3ohm | 150mA | 0.9GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000035 | 68nH | ± 5% | 2.2ohm | 100mA | 0.75GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000029 | 6.8nH | ± 5% | 0.32ohm | 300mA | 3.9GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000036 | 100nH | ± 5% | 2.5ohm | 100mA | 0.6GHz | 402 | Q Factor:10 | 100MHz |
| MCFT000024 | 1nH | ±0.3nH | 0.12ohm | 300mA | 10GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000025 | 1.5nH | ±0.3nH | 0.13ohm | 300mA | 6GHz | 402 | Q Factor:12 | 100MHz |
| MCFT000026 | 2.2nH | ±0.3nH | 0.16ohm | 300mA | 6GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000027 | 3.3nH | ±0.3nH | 0.19ohm | 300mA | 6GHz | 402 | Q Factor:11 | 100MHz |
| MCFT000028 | 4.7nH | ±0.3nH | 0.22ohm | 300mA | 4GHz | 402 | Q Factor:12 | 100MHz |


Mechanical Performance

| Test Items | Test Conditions | Requirement |
|------------------------------|---|--|
| Appearance | Inductors shall be visually inspected for visible evidence of defect. | In accordance with specification. |
| Dimension | Dimension shall be measured with caliper or micrometer | In accordance with dimension specification. |
| Solderability | Immerse a test sample into a methanol solution containing rosin, preheat it at 150 to 180°C for 3 to 5 seconds and immerse into molten solder of 245±5°C for 3±1 seconds. | More than 75% of the terminal electrode part shall be covered with fresh solder. |
| Resistance to Soldering Heat | Immerse a test sample into a methanol solution containing resin, preheat it at 150 to 180°C for 2 to 3 minutes and immerse into molten solder of 260±5°C for 10±0.5 seconds so that both terminal electrodes are completely submerged. | No visible damage |
| Bending Strength | Solder the chip to test jig then apply a force in the direction shown in below. The soldering shall be done with the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.  | No mechanical damage shall be observed. |

Environmental Characteristics

| Test Items | Test Condition | Requirements |
|-----------------------------|---|--|
| Inductance | a. Temperature: 25±1°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa d. Measuring equipment and fixture: 2012(0805) HP 4291+16197A 1608(0603) HP 4291+16192A 1005(0402) HP 4291+16193A | Within specified tolerance. |
| Q Value | a. Temperature: 25±1°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa d. Measuring equipment and fixture: 2012(0805) HP 4291+16197A 1608(0603) HP 4291+16192A 1005(0402) HP 4291+16193A | In accordance with electrical specification. |
| DC Resistance | a. Temperature: 25±1°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa Measuring equipment: HP 4338 | In accordance with electrical specification. |
| Temperature Characteristics | a. Temperature range: -30 to 85°C Reference temperature: 25°C | Within specified tolerance. |

Reliability

| Item | Test Condition | Requirements |
|----------------------------------|---|---|
| Thermal Shock | Solder a test sample to printed circuit board, and conduct 100 cycles of test under the conditions shown as below. Cycle:  85°C/1hr Within 2min -40°C/1hr | No visible damage. Inductance variation within 10% Q variation within 20% |
| High Humidity State Life Test | Keep a test sample in an atmosphere with a temperature of 70±2°C, 90~95%RH for 500±12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement. | No visible damage. Inductance variation within 10%. Q variation within 20%. |
| High Humidity Load Life Test | Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 70±2°C 90~95%RH for 500±12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement. | No visible damage. Inductance variation within 10%. Q variation within 20%. |
| High Temperature State Life Test | Keep a test sample in an atmosphere with a temperature of 85±2°C for 500±12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement. | No visible damage. Inductance variation within 10%. Q variation within 20%. |
| High Temperature Load | Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 85±2°C for 500±12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement. | No visible damage. Inductance variation within 10%. Q variation within 20%. |