

# Wireless Charging Coil Assembly

AWCCA-50N50



RoHS / RoHS II Compliant



50 x 50mm

Moisture Sensitivity Level (MSL) – MSL = 1

## FEATURES:

- Wireless Charging Coil for Transmitter or Receiver applications, (6.3μH & 24μH options)
- Outline Dimensions: 50mm x 50mm, height options 3.5mm, 4.0mm or 5.0mm.
- For Tx or Rx Applications.
- High permeability shielding to protect sensitive electronics
- Durable construction
- RoHS / RoHS II Compliant & Pb free.

## APPLICATIONS:

- Automotive Industry (in car charging)
- Batteries and Battery Chargers
- Consumer Electronics
- Smart Watches
- Digital Cameras and Camcorders
- Wireless Charging Stations
- Mobile Phones & Charging Accessories
- Power Supplies
- Power Tool Manufacturers

## STANDARD SPECIFICATIONS

### Maximum Ratings

| Item                        | Value                            |
|-----------------------------|----------------------------------|
| Operating Temperature Range | -25°C to +85°C<br>RH ≤ 90%.      |
| Storage Temperature Range   | -25°C to +85°C,<br>70% RH (Max.) |

### Electrical Characteristics

| Part Number          | Inductance                                 | Q-Factor  | Current Rating (rms) | Saturated Current (rms) | DC Resistance | SRF    |
|----------------------|--------------------------------------------|-----------|----------------------|-------------------------|---------------|--------|
| AWCCA-50N50H35-C01-B | 24μH ±10%                                  | 160±30%   | 5.4A Tpy.            | 21A                     | 72m Ω±20%     | 3.0MHz |
| AWCCA-50N50H35-C02-B | 6.3μH ±10%                                 | 72±30%    | 10.6A Tpy.           | 36A                     | 19m Ω±20%     | 6.4MHz |
| AWCCA-50N50H40-C01-B | 24μH ±10%                                  | 165±30%   | 5.7A Tpy.            | 27A                     | 72m Ω±20%     | 2.9MHz |
| AWCCA-50N50H40-C02-B | 6.3μH ±10%                                 | 72±30%    | 11.1A Tpy.           | 40A                     | 19m Ω±20%     | 5.7MHz |
| AWCCA-50N50H50-C01-B | 24μH ±10%                                  | 163±30%   | 5.7A Tpy.            | 30A                     | 72m Ω±20%     | 2.8MHz |
| AWCCA-50N50H50-C02-B | 6.3μH ±10%                                 | 75±30%    | 10.6A Tpy.           | 40A                     | 19m Ω±20%     | 5.7MHz |
| Test Condition       | 100KHz / 1V                                | 100KHz/1V | ΔT = 40 K            | 100KHz/1V               | 20±15°C       |        |
| Test Environment     | Ambient Temperature: 20±15°C, RH: 65%±20%. |           |                      |                         |               |        |

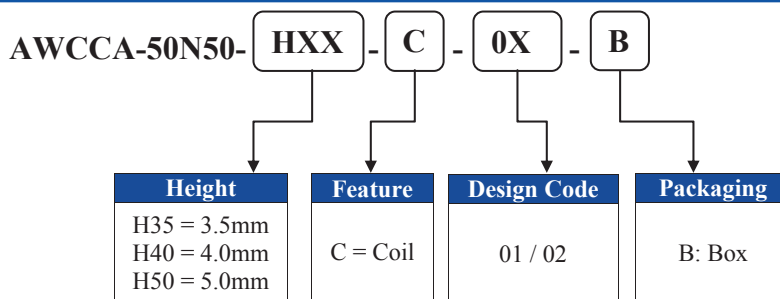
### Test Conditions

A) - Ambient Temperature: 20±15°C, RH: 65% ±20%.

If any doubt on the results, measurements/tests should be made within the following limits: Ambient Temperature: 20±2°C, RH: 65%±5%

B) - Isat: DC current at which the inductance drops approximate 5% from its value without current.

## PART IDENTIFICATION:



# Wireless Charging Coil Assembly

AWCCA-50N50



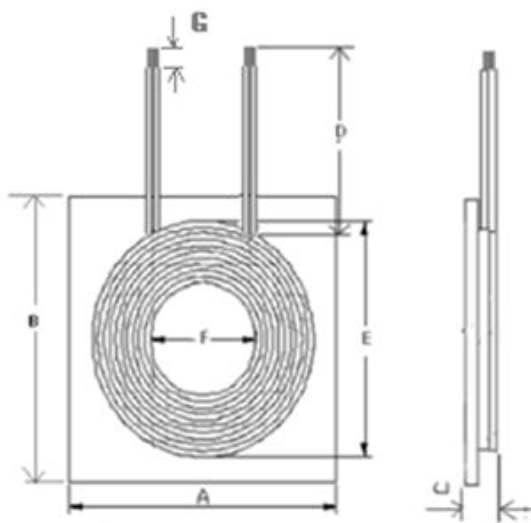
RoHS / RoHS II Compliant



50 x 50mm

## OUTLINE DIMENSIONS:

Out Line Dimensions (unit mm)



| Part Number          | A    | B    | C       | D    | E      | F        | G       |
|----------------------|------|------|---------|------|--------|----------|---------|
| AWCCA-50N50H35-C0X-B | 50±1 | 50±1 | 3.5±0.5 | 50±3 | 44±1.5 | 20.5±0.5 | 5.0±2.0 |
| AWCCA-50N50H40-C0X-B | 50±1 | 50±1 | 4.0±0.5 | 50±3 | 44±1.5 | 20.5±0.5 | 5.0±2.0 |
| AWCCA-50N50H50-C0X-B | 50±1 | 50±1 | 5.0±0.5 | 50±3 | 44±1.5 | 20.5±0.5 | 5.0±2.0 |

## Winding Specifications

| Nominal Code | Number of Coils | Wire        | Number of Turns | Inductance |
|--------------|-----------------|-------------|-----------------|------------|
| C01          | 1               | 0.08×105    | 20              | 24μH ±10%  |
| C02          | 1               | 0.08×105X2P | 10              | 6.3μH ±10% |

## Product Customization

Products can be customized according to the Wireless Charging Coil Standards or to customer requirements. Please refer to the following table for the feature ranges, and contact ABRACON or authorized distributor / agent for further details.

| Inductance Range<br>[μH] | DC Resistance<br>Range [mΩ] | Dimension Range<br>[mm] | Thickness range<br>[mm] |
|--------------------------|-----------------------------|-------------------------|-------------------------|
| 1 ~ 100                  | 10 ~ 1000                   | 10 ~ 200                | 0.4 ~ 10                |

**Manual Soldering:** 350°C Max, 3secs

## Storage condition

- Recommended storage conditions: -25°C~85°C, 70%RH (Max.)
- Service life: Within the limits of six month from being produced.
- The appearance and solder ability should be check, if product is not in expiry date.

## Operation Conditions

- Use condition limit: T=-25°C ~ 85°C, RH≤ 90%.

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