

012-EIC.1323.002R (MPP Coil)

Material Code: EIC.1323.002R

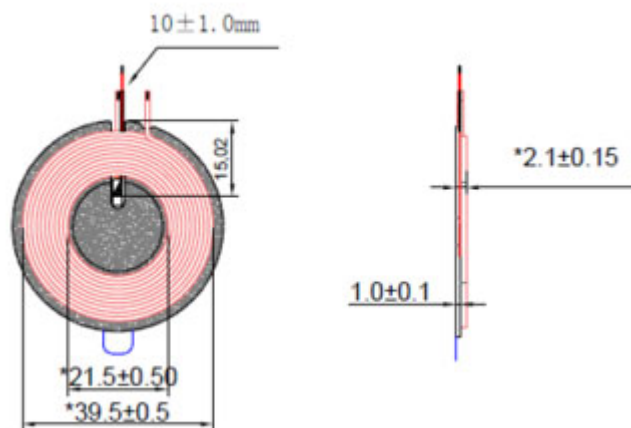
Material Name: MPP Coil

Compliance: RoHS, CA Prop 65, REACH

1. General Description

This specification defines the technical requirements, test methods, inspection criteria, and packaging requirements for the MPP (Medium Power Profile) wireless charging transmitting coil, applicable to the mophie W03 wireless charger series.

2. Key Technical Specifications



Item	Specification
Inductance (L)	8.4 μ H $\pm$ 5% @ 100 kHz, 1 Vrms
DC Resistance (DCR)	$\leq$ 70 m Ω
ACR (AC Resistance)	$\leq$ 150 m Ω @ 100 kHz
Litz Wire	0.08 mm $\times$ 65 strands, Single-layer winding, 11 Turns
Winding Direction	Clockwise (CW)
Magnetic Sheet	Ferrite, Size: $\varnothing$ 42.5 $\times$ 5.3 $\times$ 1.0 mm With wire routing groove

Item	Specification
Coil Dimensions	Outer Diameter: 39.3 ± 0.4 mm Inner Diameter: 21.46 ± 0.5 mm
Total Thickness	2.1 ± 0.15 mm (Including magnetic sheet and insulation)
Lead Wire	Length: $6.0 +1/-0$ mm Tinned length: ≤ 2.5 mm Small end thickness: ≤ 1.1 mm
NTC Thermistor	Model: 10K / 3380K, integrated
Lead Extension	Length: 26 ± 2 mm from spacer edge Covered with black heat shrink tubing
Insulation	Black insulating film applied between coil and magnetic sheet Epoxy reinforcement at wire exit bend
Operating Temperature	-20°C to $+85^{\circ}\text{C}$
Storage Temperature	-40°C to $+125^{\circ}\text{C}$

3. Reliability Test Requirements

Test Item	Test Condition	Acceptance Criteria
Solderability	$245 \pm 5^{\circ}\text{C}$, 3 ± 0.5 sec	$\geq 95\%$ wetting of termination surface
Thermal Shock	$-40^{\circ}\text{C} \leftrightarrow +85^{\circ}\text{C}$, 500 cycles	$\Delta L \leq \pm 10\%$; Visual: No cracking/delamination
High Temperature Exposure	85°C , 1000 hrs	$\Delta L \leq \pm 10\%$; DCR change $\leq \pm 15\%$
Humidity Resistance	85°C / 85% RH, 1000 hrs	$\Delta L \leq \pm 10\%$; DCR change $\leq \pm 15\%$
Mechanical Shock	100G, 6 ms, 3 axes, 5 pulses each	No structural damage; Electrical specs maintained
Vibration	10 - 500 Hz, 1.5 mm amplitude, 2 hrs/axis	No structural damage; Electrical specs maintained

4. Inspection Criteria

- **Visual Inspection:** No visible deformation, broken wires, or insulation damage.

- **Dimensional Inspection:** All critical dimensions must comply with the drawing tolerance.
- **Electrical Inspection:** 100% testing for inductance and DCR.

5. Packaging Requirements

- Individual anti-static tray or blister packaging.
- Label must include: Material Code, Lot Number, Quantity, and Date Code.
- Outer carton must meet international shipping standards for moisture and ESD protection.

6. Drawing Reference

(Refer to attached engineering drawing: DWG-EIC.1323.002R-REV A)