

70. Apple MagSafe Charger Module

The MagSafe Charger Module enables accessories to wirelessly charge MagSafe-capable devices.

Examples of accessories benefiting from including the MagSafe Charger Module include charging cables, docks, and [Battery Packs](#) (page 150).

70.1 Accessory Integration

All MagSafe Charger Module accessories shall:

- Provide power to the device. See [Electrical](#) (page 628).
- Permit the device to move relative to the MagSafe Charger Module.

The MagSafe Charger Module is available in the following variants:

- MagSafe Charger Module (C222).
- MagSafe Charger Module (C222x) for increased design flexibility.
- MagSafe Charger Module (C223) with increased attach force.

Examples of accessories benefiting from the increased attach force of the MagSafe Charger Module (C223) include vent mounted chargers, battery packs, and tripod mounts.

Figure 70-1 MagSafe Charger Module (C222)



Figure 70-2 MagSafe Charger Module (C222x)

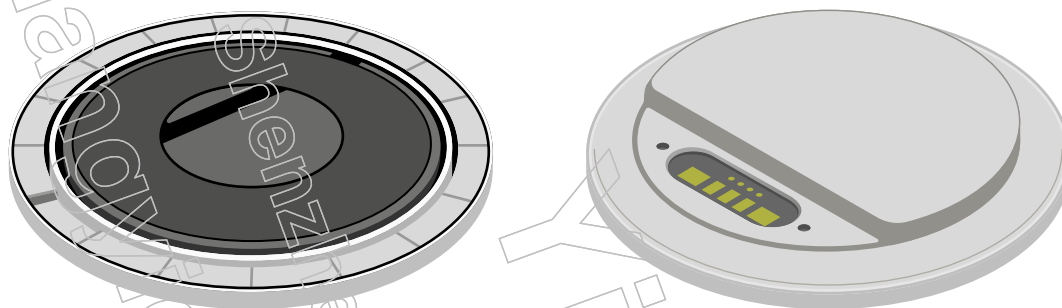
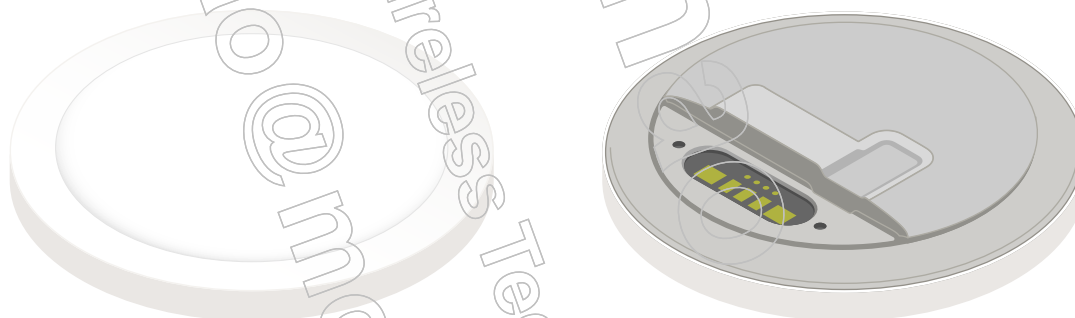


Figure 70-3 MagSafe Charger Module (C223)



70.2 Mechanical

See the following for dimensional drawings:

- [MagSafe Charger Module \(C222\) Dimensions 1 of 2](#) (page 638)
- [MagSafe Charger Module \(C222\) Dimensions 2 of 2](#) (page 639)
- [MagSafe Charger Module \(C222x\) Dimensions](#) (page 640)
- [MagSafe Charger Module \(C223\) Dimensions 1 of 2](#) (page 641)
- [MagSafe Charger Module \(C223\) Dimensions 2 of 2](#) (page 642)

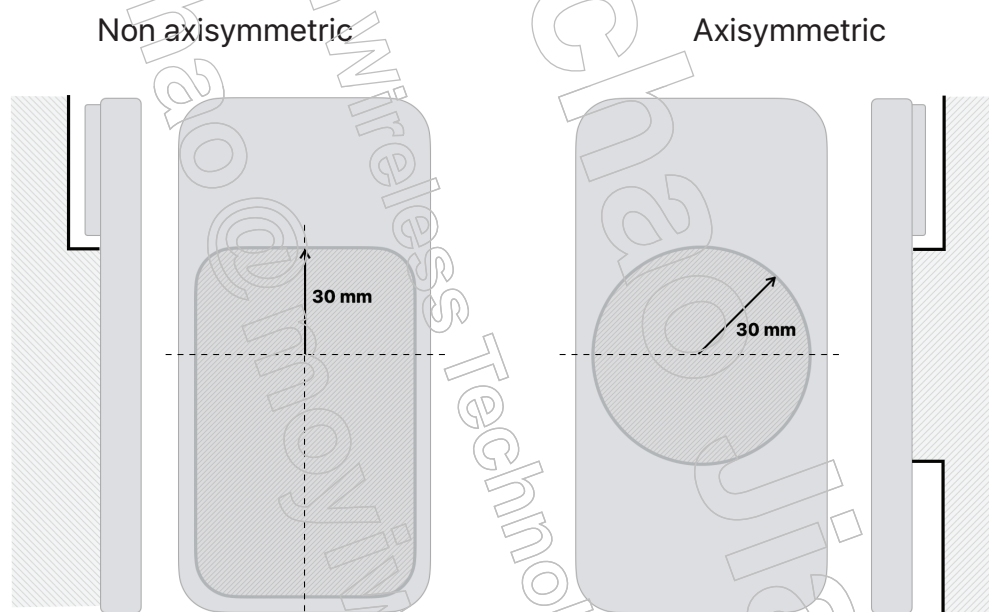
The accessory shall not interfere with or cause [Scratches and Damage](#) (page 53) to the device.

To avoid interference with devices, accessories shall:

- Mount the MagSafe Charger Module (C222) or MagSafe Charger Module (C223) so its surface is proud of the accessory surface.

- Not exceed 30 mm from the center of the MagSafe Charger Module surface towards the top edge of the device for all supported device orientations. If the device can be attached in any orientation, the accessory shall not exceed 30 mm in radius around the center of the MagSafe Charger Module surface.
- Maintain a clearance of 5 mm from the back of the device (mating surface) for any part of the accessory past the 30 mm keep-in constraint.
- Meet enclosure integration requirements found in module dimensional drawings.

Figure 70-4 MagSafe Charger Module accessory clearance



To avoid interference with wireless charging, accessories:

- Shall not cover the MagSafe Charger Module (C222x) with radio frequency absorbing [Materials and Coatings](#) (page 64).
- Should not mount the MagSafe Charger Module near ferromagnetic metals or alloys.

Accessory mounts designed for use in vehicles shall include an [Orientation Magnet](#) (page 368) unless the mating surface is guaranteed to be horizontal (such as when integrated into the vehicle or permanently mounted), in which case an orientation magnet is not required. Mounting designs should consider factors such as mount stiffness and mounting location.

Accessories integrating the MagSafe Charger Module (C222x) should have a mating surface with a kinetic friction coefficient against stainless steel greater than 0.35.

MagSafe Charger Module storage temperature range is from $-20\text{ }^{\circ}\text{C}$ to $40\text{ }^{\circ}\text{C}$.