FPC’s FPC1268 in the Huawei Mate 9 Pro and Huawei P10 series

The world’s first capacitive fingerprint successfully integrated under glass, in collaboration with TPK

Fingerprint Cards AB (FPC), a leader in capacitive fingerprint technology, has over the last year equipped a large number of smartphones worldwide. One of its biggest clients, Huawei, traditionally integrates the latest technology in its flagship model every year. With the integration of the FPC1268 in the Huawei Mate 9 Pro and the Huawei P10 series, FPC has introduced a new kind of capacitive fingerprint integration: one that can be successfully integrated under glass. This technology, developed in collaboration with TPK, aims to be the new low-cost solution for fingerprint scanner integration.

Following the Mate 9 Pro, the Huawei P10 is the latest smartphone to feature the capacitive fingerprint completely hidden behind the cover glass. The sensor is located under the home button in the device’s front, under a unique TPK-developed glass cover that allows for new, highly attractive designs like the ultrasonic fingerprint.

Using the same process as FPC’s previous flagship product, the 1025, the integration no longer requires wire bonding but instead a specific TSV designed by an identified OSAT and based on Tessera’s WLCSP solution. While previously used for CIS integration, this is the first time it has been used for fingerprint. Along with the ASIC, the fingerprint is integrated into an LGA package which is soldered on a flex PCB and covered by TPK’s specially-designed glass.

Thanks to conductive layers, TPK’s solution allows for the precise detection and identification of the fingerprint under glass. Everything is packaged in a metal ring that forms part of the home button.

This report provides a complete analysis of chip fabrication and package processes, along with a cost estimate. Also included is a comparison with FPC’s previous capacitive fingerprint generation, the FPC1025, and Qualcomm’s new ultrasonic fingerprint, the Sense ID.
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