

MBF200 Solid-State Fingerprint Sensor



► Features

- Rugged, solid-state capacitive fingerprint sensor
- High resolution 500-dpi, 8-bit grayscale imager
- Large image area:
 - 12.8mm x 15.0mm (0.5" x 0.6")
 - 256 x 300 pixel array (50 μ M pitch)
- Programmable gain adapts to wet/dry fingers
- Small size: 24mm x 24mm x 1.4mm
- Multiple interfaces: USB1.1, 8-bit MCU, SPI
- Lead-free and RoHS compliant
- Durable:
 - ESD to 8kV (FCC-B/CE certified)
 - Silicon operating temperature: -20°C to +85°C
 - Hard protective coating
- 8-bit analog-digital converter
- Auto finger-detection for low power sleep mode
- Low Power:
 - 3.3V
 - 20mA active, <200 μ A sleep, 20 μ A standby

► Description

The Fujitsu MBF200 is a 500-dpi, 8-bit grayscale solid-state fingerprint sensor that reliably captures fingerprint information. The MBF200 is designed to integrate into devices for improved security and convenience. Applications for the MBF200 include: computer and network logon, physical access control, Point-of-Sale terminals, transportation security, medical information protection, card-holder ID validation and many other uses. The Fujitsu MBF200 provides a reliable, quick and user-friendly alternative to passwords, PIN's and other forms of user authentication.

The Fujitsu MBF200 solid-state fingerprint sensor is a rugged, thin, low power, cost effective direct-contact fingerprint image capture device. The MBF200 scans the finger at 500 dots-per-inch (dpi) and 8-bit grayscale for high-resolution fingerprint images that meet AFIS image quality standards. The MBF200 is manufactured in standard CMOS technology and integrates an

8-bit analog-to-digital converter to digitize the information from the sensor array. The MBF200 sensing area is 0.5" x 0.6" (12.8mm x 15.0mm) and passes FCC-B (8kV) and CE ESD and EMI requirements.

The Fujitsu MBF200 is a capacitive sensing device that automatically adjusts the MBF200 sensor to its optimal settings, enabling industry-leading image capture reliability for a wide range of wet, dry and damaged fingers. A hard passivation layer on the surface of the MBF200 provides excellent abrasion resistance. When a person presses their finger on the sensor, the varying capacitive values across the array are converted into an image of the MBF200 Solid-State Fingerprint Sensor fingerprint. In less than one second, the sensor can capture a fingerprint image, adapt to various finger types, process the image and authenticate a user's identity.

MBF200 Solid-State Fingerprint Sensor

Each Fujitsu MBF200 fingerprint sensor supports three standard bus interfaces:

1. USB 1.1 for integration into computer applications.
2. 8-bit parallel MCU interface
3. SPI interface, a serial interface with 4 wires.

The Fujitsu MBF200 has an Automatic Finger Detection (AFD) circuit that allows the sensor to enter a low power 'sleep' mode and generate an interrupt when a finger is detected. In AFD mode the MBF200 draws less than 200 μ A of current. Normal image acquisition of the sensor operates at 3.3V and requires typically

20mA of current during active image capture. Silicon operating temperature is -20°C to +85°C, and storage temperature is -65°C to +150°C.

The Fujitsu MBF200 fingerprint sensor can be programmed using the DKF200 software development kit that includes the driver software and a minutia-based matching algorithm.

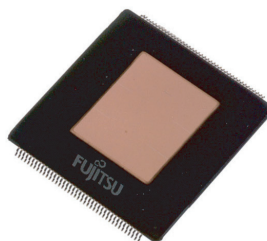
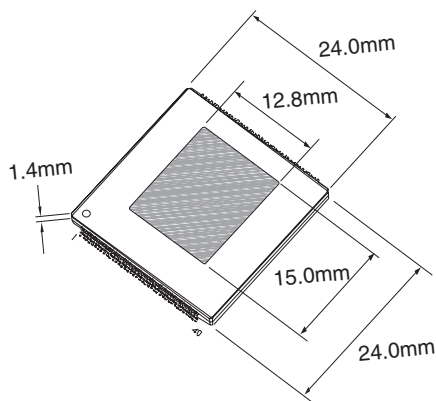
The Fujitsu MBF200 sensor is a robust, cost effective fingerprint image capture device with 500-dpi image resolution, low power, small size and high durability, making it an excellent choice for a wide variety of user authentication applications.

▶ Applications

- Computer peripherals – improves security and convenience
- Transportation systems – validation of operators, drivers and inspectors
- Medical equipment – authorization of operator or technician
- Physical access systems – approval for entry
- Kiosks and vending machines – confirmation of person receiving the selection
- Point of sale terminals – authentication of tellers and cashiers

▶ Specifications

- Resolution: 500-dpi, 8-bit grayscale
- Size: 24mm x 24mm x 1.4mm
- Voltage: 3.3V
- Current:
 - 20mA typical, active
 - <200 μ A typical, AFD (sleep)
 - <20 μ A typical, standby
- Temperature:
 - silicon operating: -20°C to +85°C
 - storage: -65°C to +150°C
- Frame rate:
 - 20/sec with MCU interface
 - 13/sec with USB interface
 - 10/sec with SPI interface
- Electrostatic discharge (ESD)
 - 8kV
 - FCC-B: CFR47 part 15
 - CE: EN61000-4-2
- 80-pin LQFP surface mount package



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