



MELFAS Inc.

MOS-50F Datasheet

Capacitive Touch Screen Sensor IC

Features

- **Hybrid touch sensor IC**
 - 28 TX, 59 RX Mutual Sensing channels
 - Self sensing for all TX/RX channels
- **Embedded Memories**
 - 64KB EEPROM
 - 32KB Code SRAM & 32KB System SRAM
- **Enhanced Performance**
 - Reduced sensing time
 - 59 instances of sensing circuits to enable simultaneous sensing for all RX channels
 - Enhanced MCU performance
 - Embedded Cortex-M3
 - Embedded 32KB Code SRAM
 - Operational clock frequency up to 40MHz
 - Embedded DSP engines
 - Intensity calculation & filtering
 - Reference tracking
 - Grouping
 - Convolution filter
 - Operational clock frequency up to 80MHz
- **Noise immunity**
 - Synchronous sensing to prevent noise propagation
 - Advanced Median filter to enable faster sensing & reliable noise cancellation
 - Display synchronized sensing mode to avoid display noise
 - Various phase shifted system clocks
- **Low power consumption**
 - Optimized sensing circuits to minimize power consumption during sensing operation
 - Various power saving modes to achieve low power consumption
 - Deep/Light sleep modes
 - EEPROM power down mode
 - Selective & dynamic clock gating
- **Peripherals**
 - DSP for touch pre-processing
 - 2 Timers, 1 Watchdog for system monitoring
 - I²C Slave, SPI Slave, GPIO I/F for interfaces
- **Interfaces**
 - I²C Slave for Host interface or code download
 - SPI Slave for Host interface or code download
 - 8 GPIOs for interrupt, wake-up or display sync signals
- **Power supply**
 - 2.8V to 3.6V Single supply voltage
 - Active current : 30mA
 - depending on Panel environment
 - 4 Internally generated supplies
 - VDDA : 2.8V Analog Supply
 - VDDCP : 2.8V Charge-pump input supply
 - VPP : 8~12V Charge-pump output supply
 - VDDD : 1.8V Digital core supply
- **Package**
 - BGA 120-ball 10x5.5x0.7T, 0.65mm pitch
- **Application**
 - Touch screen sensor

Datasheet (REV. 1.0)

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