S1D14F57

2-level grayscale EPD Passive panel driver IC

- ● Two-level grayscale EPD passive panel driver IC
- ● Built-in Flash memory that stores output drive waveform data for the EPD passive panel drivers
- ● Built-in temperature detection circuit
- ● Command interfaces
- ● Expansion function for EPD drive pins of Seiko EPSON S1C17F00 series

■ DESCRIPTIONS

The S1D14F57 is a two-level grayscale EPD passive panel driver IC. The device integrates drivers that are necessary for display updates of the EPD passive panel (segment (256 pins), top plane (4 pin) and back plane (4 pin)) and a control circuit for driver waveforms to one chip. The device also includes a Flash memory that stores output drive waveform data for the EPD passive panel drivers and a power supply circuit. The S1D14F57 can compose a two-level grayscale EPD passive panel display controller of a minimum number of parts.

■ FEATURES
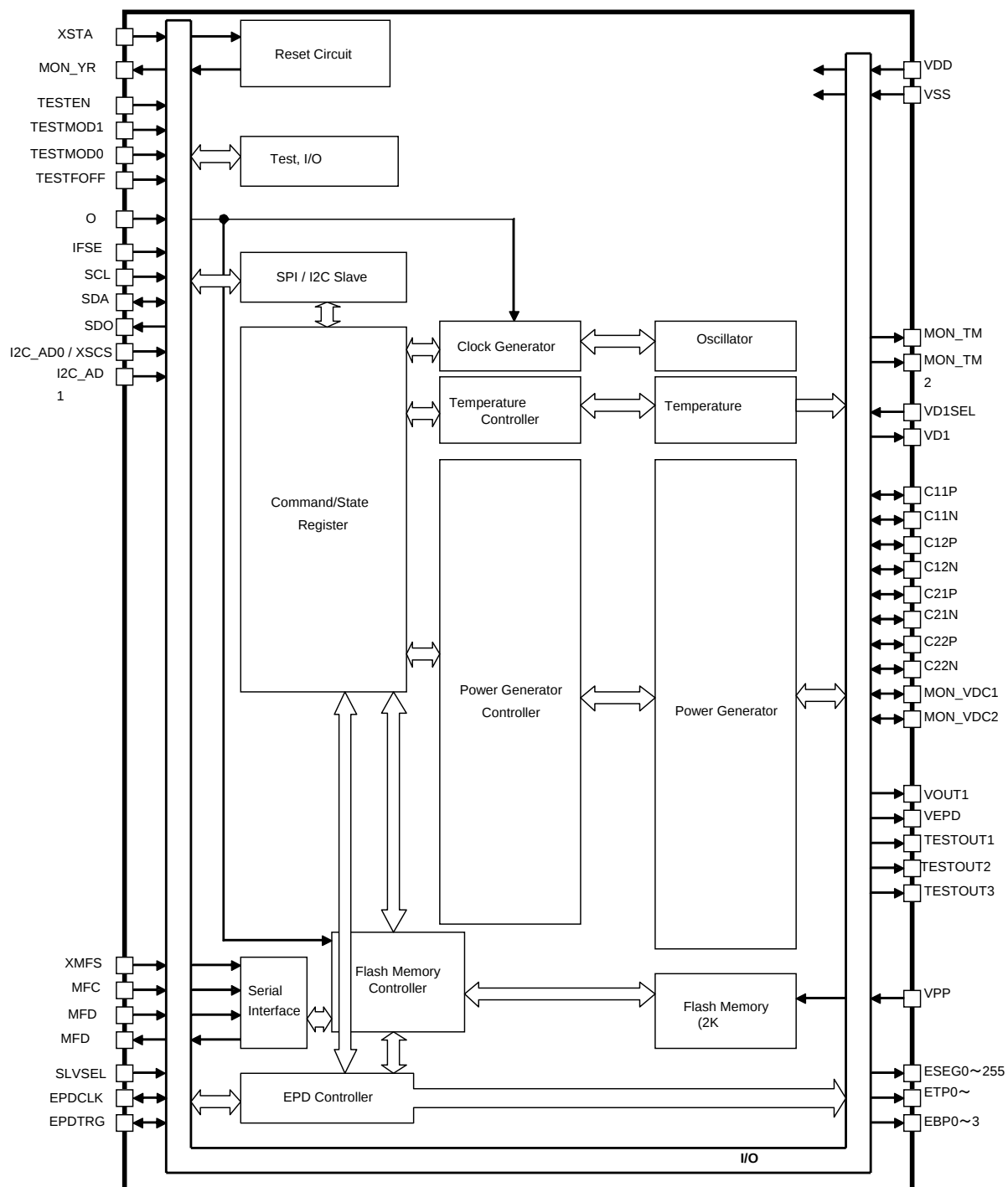
● Segment outputs	: 256 pins
● Top plane output	: 4 pin
● Back plane output	: 4 pin
● EPD display waveform setting	: 7 types (max.) can be stored in the built-in Flash memory. EPD display waveforms can be automatically selected with the automatic temperature detection function. One type can be set with the command interfaces. (32 phases max.)
● Built-in Flash memory	: Capacity: 16k bits (storage for output drive waveform setting / initial setting) Erase-programming cycles: 10 times. Power supply for erase / programming (VPP): necessary You can reprogram the built-in Flash memory through the EPD microcontroller from Seiko Epson using the debug tool "ICDmini". [note1]
● Built-in temperature detection circuit	: Temperature range -10 °C to 60 °C (±5°C) Temperature detection precision ±5°C
● Clock generator	: 2 MHz (typ.) built-in oscillation circuit
● Power-on reset circuit	: Built-in
● Command interfaces	: I2C slave interface [note2] SPI interface
● Deep standby function	: $\leq$ 1μA(25°C)
● Currently displayed data retention function	: Built-in 257-bit register for VDD power supply (ESEG0 to ESEG255, for storing currently displayed data for EBP)
● Boost power supply circuit	: VOUT1 Booster
● EPD drive power supply	: VEPD Booster = 9.15V/12.30V/15.45V
● Power supply for internal power supply circuit / power supply for logic signal I/O circuits	: VDD = 1.75V to 5.50V
● Expansion function for EPD drive pins of Seiko Epson EPD microcontrollers	
● Multi-chip EPD drive function	
● Shipment forms	:Aluminum pad chip, Gold bump chip (T.B.D.)

Note1:For details about how to erase/reprogram the built-in Flash memory, contact our representatives.

Note2: The 10-bit address mode/general call address/HS mode are not supported.

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■ BLOCK DIAGRAM

Seiko Epson Corporation

NOTICE: