

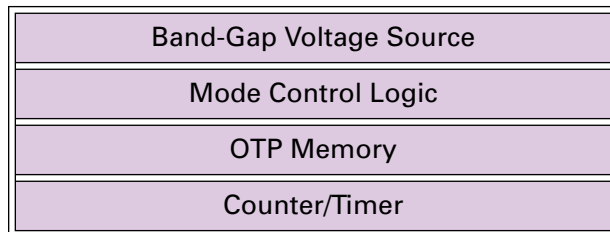


PB001900-SEC1099

ZSBI050

ONE-TIME PROGRAMMABLE 555 TIMER

PRODUCT BLOCK DIAGRAM



FEATURES

- Highly-Integrated Mixed-Signal Solution
- User-Configurable Timer
- OTP-Programmable
- Improved Accuracy
- Industry-Standard 8-Pin Package

GENERAL DESCRIPTION

The ZSBI050 is a programmable replacement for the widely-available 555 timer and the discrete components normally required for its operation. The ZSBI050 timer is designed for applications which would otherwise use the industry-standard 555 timer, but could take advantage of its ability to be programmed in-circuit. The timer features on-chip programmable memory to store timing parameters, and replaces the external trimming resistor that requires manual tuning on traditional timers. The ZSBI050 may be programmed by a microprocessor or by automated test equipment. ZiLOG's ZSBI050 is the first programmable timer device to feature built-in calibration, enabling products to include automated test and calibration.

Through a bidirectional serial port, the customer can set the ZSBI050 to operate as a variable-duty-cycle oscillator or a monostable multivibrator with specified delays. The delay intervals can range from milliseconds to over 44 days, giving OEM engineers maximum flexibility.

The ZSBI050 is available in 8-pin DIP or SOIC packages, ideal for applications with minimum board space requirements.

IMPROVEMENT ON THE 555 TIMER

The ZSBI050 delivers flexibility, high reliability, and reduced manufacturing time, and it offers precise timing of the delay cycle or frequencies stored in memory. The new in-circuit programming eliminates the need for manual calibration.

Additionally, the potentiometer and timing capacitor are eliminated, due to the user's ability to program automatically through the serial interface.

USER-CONFIGURABLE

The ZSBI050 offers the flexibility to configure the device to the customer's specifications. The frequency, timing pulse, duty cycle and triggering modes are all adjustable, thus providing superior performance.

User-configurable monostable and astable modes are easily selected through the external programming port, with the astable mode enabling additional triggering controls not supported by other 555 timers.

OTP-PROGRAMMABLE

The ZSBI050 is controlled by 35 bits of nonvolatile memory. These bits are shifted into an internal holding register, which acts like the non-volatile memory during calibration and testing. Once the program characteristics have been determined, the data is burned into the internal memory. An optional security bit is provided to lock the device from being further modified.

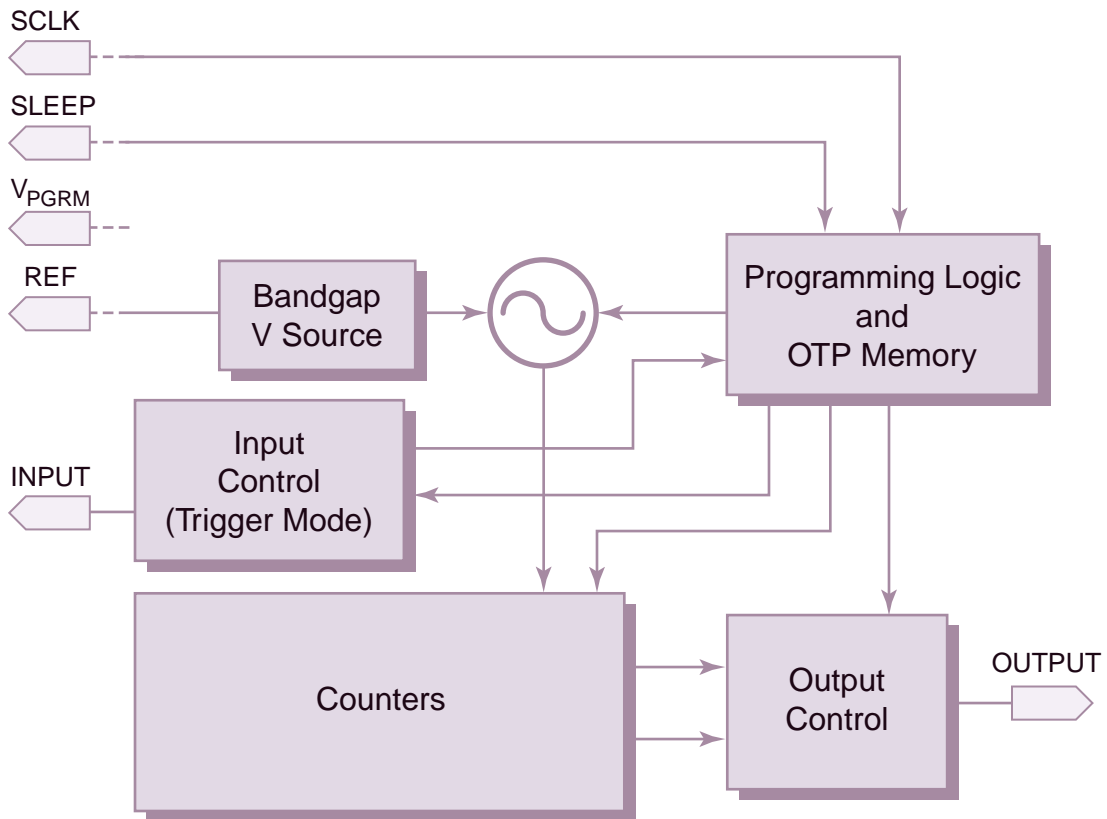
The ZSBI050 offers an increase in accuracy over the traditional 555 timer. While operating in the variable duty cycle oscillator mode, the timer can operate with a precision of up to 0.1%. Overall, the ZSBI050 offers an increase of 5–7% accuracy over traditional 555 timers.



INDUSTRY-STANDARD PACKAGING

The ZSBI050 is available in 8-pin DIP or SOIC packages to accommodate surface mounting on densely-populated PCBs.

ZSBI050 BLOCK DIAGRAM



PIN-OUTS AND PIN DIRECTION

ZSBI050 FAMILY PIN DIAGRAM



APPLICATIONS AND SUPPORT TOOLS

The following development tools are available for the programming and debugging of this device:

- Development Board/Evaluation Kit available early 2000

RELATED PRODUCTS

Security products of interest are:

ZSBI010 Passive InfraRed Amplifier for Motion Sensing, Measurement, and Detection

ELECTRICAL FEATURES SUMMARY

ORDERING INFORMATION

Part	PSI	Description
ZSBI050	SZ000SC	OTP Timer SOIC
ZSBI050	PZ000SC	OTP Timer PDIP