普 誠 科 技
Princeton Technology Corp.

DESCRIPTION

The PT5100 is a single 10-bit DAC with 102.3mA output current sink capability. It features an internal reference and operates from a single 2.3V to 5.5V supply. The DAC is controlled via a 2-wire (I²C compatible) serial interface that operates at clock rates up to 400KHz.

The PT5100's unique and proprietary Slope Control Modes allow the user to customize the output transient response thereby overcoming mechanical ringing associated with reduced form factor voice coil motors (VCMs).

The PT5100 incorporates a power-on reset circuit, which ensures that DAC output powers up to 0V and remains there until a valid write takes place. It has a power-down feature that reduces the current consumption of the device to 1µA maximum.

The PT5100 is designed for autofocus, image stabilization, and optical zoom applications in camera phones, digital still cameras, and camcorders.

The PT5100 also has many industrial applications, such as controlling temperature, light, and movement, over the range -40℃ to +85℃ without derating.

The I²C address for the PT5100 is 0x18h.

PT5100 has two versions IC about Xshutdown pin:
Ver A: XShutdown pin is active low. (Hard Shutdown mode at $V_{XSHUTDIWN}$=0V)
Ver B: XShutdown pin is active High. (Hard Shutdown mode at $V_{XSHUTDIWN}$=1.8V)

FEATURES

- 102.3mA current sink
- 2-wire (I²C-compatible) 1.8V serial interface
- 10-bit resolution DAC
- Integrated current sense resistor
- Selectable output slope control
- 2.3V to 5.5V power supply
- Guaranteed monotonic over all codes
- Power-down to 0.5µA typical
- Internal reference
- Built-in UVLO shutdown circuit
- Power-down function
- Power-on reset
- Available in 2 x 3 array, 0.961mm x 1.580*0.395mm WLCSP packages

APPLICATIONS

CONSUMER APPLICATIONS

- Lens autofocus
- Image stabilization
- Optical zoom
- Shutters
- Iris/exposure
- Neutral density (ND) filters
- Lens covers
- Camera phones
- Digital still cameras
- Camera modules
- Digital video cameras/camcorders
- Camera-enabled devices
- Security cameras
- Web/PC cameras

INDUSTRIAL APPLICATIONS

- Heater controls
- Fan controls
- Cooler (Peltier) controls
- Solenoid controls
- Valve controls
- Linear actuator controls
- Light controls
- Current loop controls

STRUCTURE

- Silicon CMOS IC