

CAT5140

Digital Potentiometer (POT), 256-Tap, with I2C Interface and Integrated EEPROM



Product Overview

For complete documentation, see the data sheet.

The CAT5140 is a single channel non-volatile 256-tap digital POT. This digital POT is comprised of a series of equal value resistor elements connected between two externally accessible end points. The tap points between each resistive element can be selectively connected to the wiper output via internal CMOS switches forming a linear taper electronic potentiometer.

The CAT5140 contains a volatile wiper register (WR) and an 8-bit non-volatile EEPROM for wiper position and 5 additional non-volatile registers for general purpose data storage. Programming of the registers is controlled via I2C interface. On power up, the wiper position is reset to the most recent value stored in the non-volatile memory register (IVR).

The CAT5140 operates over the industrial temperature range of -40°C to +85°C.

Features

- 400 kHz I2C Compatible Interface
- 256 Position Linear Taper Potentiometer
- End-to-End Resistance = 50 kΩ / 100 kΩ
- TCR = 100 ppm/°C (typical)
- Standby Current = 2 μA (max)
- Typical Wiper Resistance = 70 Ω @ 3.3 V
- Operating Voltage = 2.5 V to 5.5 V
- 6 Registers 8-bit Non-volatile EEPROM
- 2,000,000 Data Write Stores
- 100 Year Data Retention

For more features, see the data sheet

Applications

- Gain Adjustment and Line Impedance Matching
- Automated Calibration
- Contrast, Brightness and Volume Control
- LCD Screen Adjustment

End Products

- Instrumentation for Handheld, Portable Devices
- Industrial Automation for Handheld, Portable Devices
- Portable Games

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	# of Pots	# of Taps	Type	Control Interface	Resistance Typ (kΩ)	V _H Max (V)	Wiper Position Memory	V _{DD} Max (V)	Package Type
CAT5140ZI-50-GT3	0.4647		Active	1	256	Potentiometer	I2C	50	VCC	Yes	5.5	MSOP8 3.0x3.0

Application Diagram

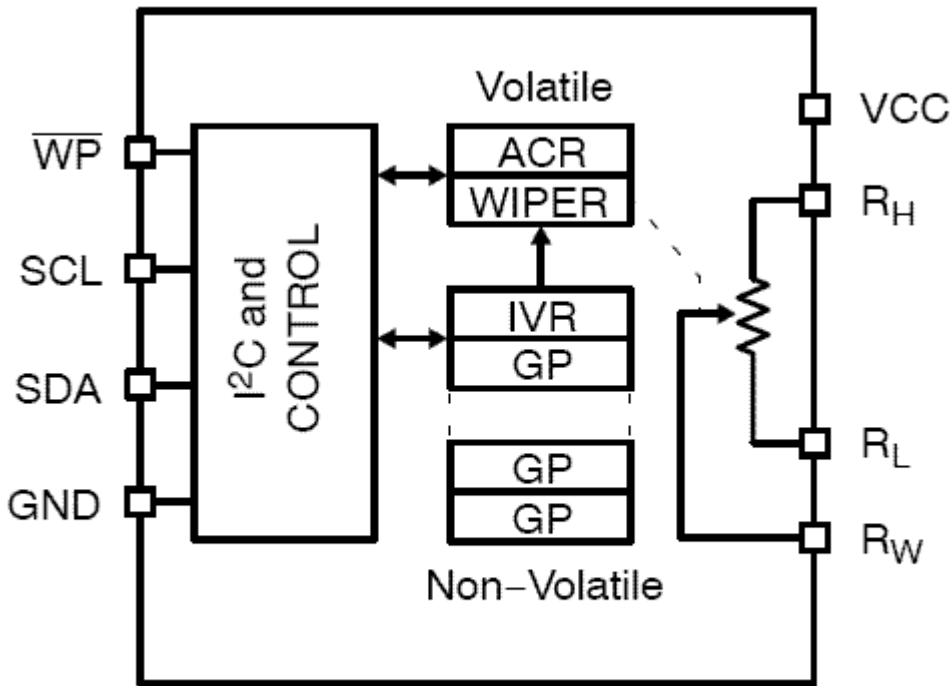


Figure 1. Functional Block Diagram