

Winbond WMS720x Series Single/Dual/Quad Nonvolatile Digital Potentiometers with SPI Interface and Selectable Output Buffer

Product Bulletin

The WMS720x is a series of 256-position non-volatile linear digital potentiometers available in 10K Ω , 50K Ω and 100K Ω resistance values. The WMS7201/02/04 series can be used as a three-terminal potentiometer or as a two terminal variable resistor in a wide variety of applications.

The output of each potentiometer is determined by the wiper position, which varies linearly between VA and VB terminal according to the content stored in the volatile Tap Register (TR) programmed through industry standard SPI interface. Each channel has its own four non-volatile memory locations (NVMEM0 ~ 3) that can be directly written to, and read by, users through the SPI interface. Power-on recall is also built in so the content of the NVMEM0 to Tap Register is automatically loaded.

The WMS7201 is a single channel device offered in 8-pin PDIP, SOIC, MSOP and 10-pin TSSOP packages. The WMS7202 contains two independent channels in 14-pin PDIP, SOIC and TSSOP packages and the WMS7204 has four independent channels available in 20-pin PDIP, SOIC and TSSOP packages. A selectable output buffer is built-in for each channel for those applications where output buffer is required. The WMS7201/02/04 operates over a wide operating voltage ranging from 2.7V to 5.5V. This series is the first in a family of digital potentiometers.

Features:

- Selectable output buffer for each channel
- Single, dual or quad independent linear-taper channels in one package
- 256 taps for each channel
- 10K, 50K and 100K end-to end resistance
- V_{SS} to V_{DD} terminal voltages
- Non-volatile storage of wiper positions with power-on recall
- Access to data and potentiometer control through industry standard SPI interface
- Package options:
 - WMS7201: 8-pin PDIP, SOIC, MSOP or 10-pin TSSOP
 - WMS7202: 14-pin PDIP, SOIC or TSSOP
 - WMS7202: 20-pin PDIP, SOIC or TSSOP
- Industrial temperature range: -40 ~ 85°C
- Single supply operation 2.7V to 5.5V

Applications:

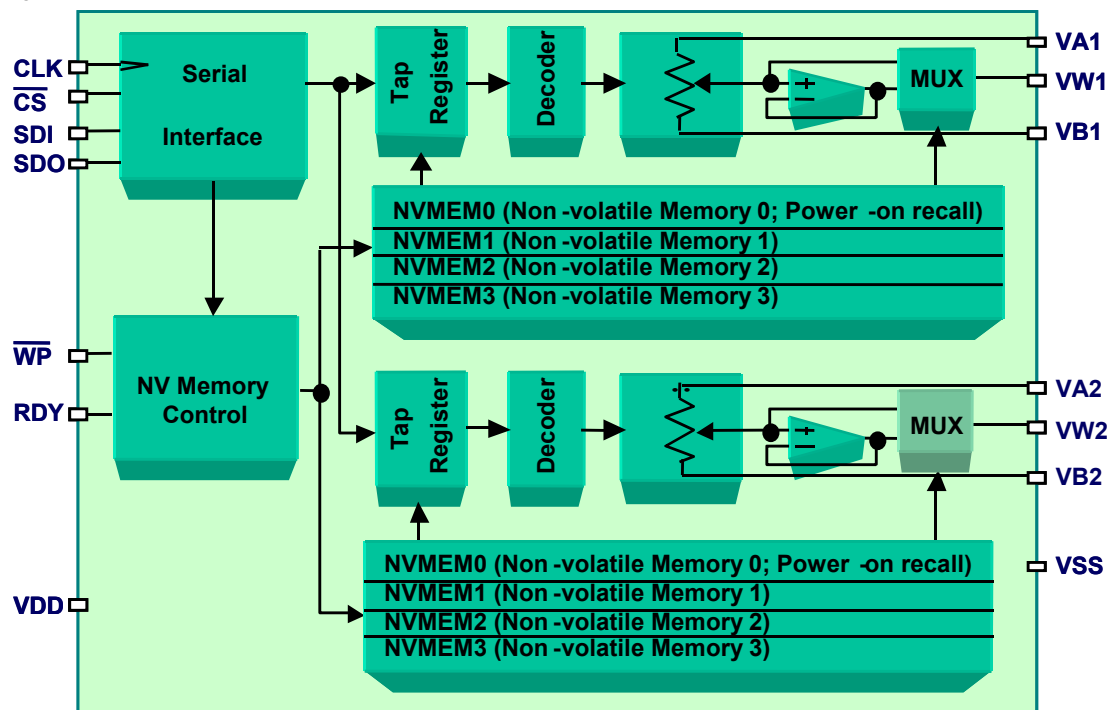
- Mechanical Potentiometer Replacement
- Laser Diode Biasing in Optical Networking
- DC Biasing for RF Amplifiers in Wireless Systems
- Biasing and Calibration of Analog Circuitry
- Operating Point Setting in Temperature Control Systems
- Power Supply Voltage Adjustment

Evaluation System:

- Evaluation board with printer port interface
- Software based upon Windows 95/98/ME

WMS7202

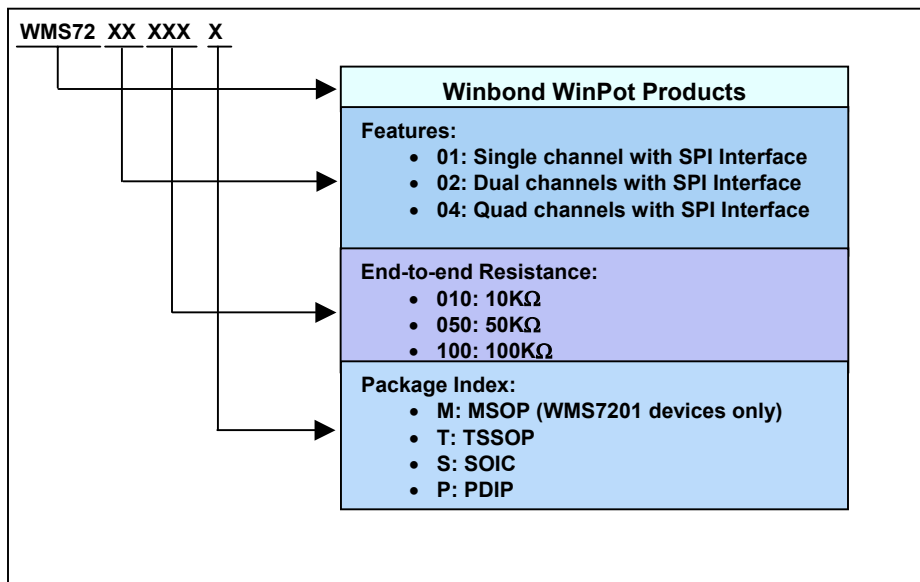
Block Diagram:



WinPot WMS720x Selection Table:

Part Number	# of Channels	# of Taps	Bus Interface	End-to-End R (Kohm)	NVM	Terminal Voltage	Operating Voltage	Selectable Output Buffer	Availability		Package Options
									Samples	Production	
WMS7201010	1	256	SPI	10	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	8-PDIP/SOIC/MSOP, 10-TSSOP
WMS7201050	1	256	SPI	50	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	8-PDIP/SOIC/MSOP, 10-TSSOP
WMS7201100	1	256	SPI	100	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	8-PDIP/SOIC/MSOP, 10-TSSOP
WMS7202010	2	256	SPI	10	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	14-PDIP/TSSOP/SOIC
WMS7202050	2	256	SPI	50	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	14-PDIP/TSSOP/SOIC
WMS7202100	2	256	SPI	100	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	14-PDIP/TSSOP/SOIC
WMS7204010	4	256	SPI	10	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	20-PDIP/TSSOP/SOIC
WMS7204050	4	256	SPI	50	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	20-PDIP/TSSOP/SOIC
WMS7204100	4	256	SPI	100	Y	VSS ~VDD	2.7 ~5.5V	Yes	Now	Now	20-PDIP/TSSOP/SOIC

WinPot WMS720x Numbering System:



To order products or for more information:

Winbond Electronics Corporation America
 2727 N. First Street
 San Jose, CA 95134
 Tel: 1-800-677-0769 (U.S. Only), 408-943-6666
 Fax: 408-544-1789
 e-mail: info@winbond-usa.com
 Web: www.winbond-usa.com

Winbond is a registered trademark of Winbond Electronics Corporation.
 All other trademarks and logos are the properties of their respective owners.
 Winbond WMS720X-0808