Digitally Controlled Potentiometer (XDCP™)

The Intersil X9317 is a digitally controlled potentiometer (XDCP). The device consists of a resistor array, wiper switches, a control section, and nonvolatile memory. The wiper position is controlled by a 3-wire interface.

The potentiometer is implemented by a resistor array composed of 99 resistive elements and a wiper switching network. Between each element and at either end are tap points accessible to the wiper terminal. The position of the wiper element is controlled by the $\overline{CS}$, U/$\overline{D}$, and $\overline{INC}$ inputs. The position of the wiper can be stored in nonvolatile memory and then be recalled upon a subsequent power-up operation.

The device can be used as a three-terminal potentiometer for voltage control or as a two-terminal variable resistor for current control in a wide variety of applications.

Features

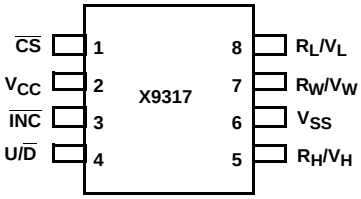
- Solid-State Potentiometer
- 3-Wire Serial Up/Down Interface
- 100 Wiper Tap Points
  - Wiper position stored in nonvolatile memory and recalled on power-up
- 99 Resistive Elements
  - Temperature compensated
  - End to end resistance range ±20%
- Low Power CMOS
  - V_{CC} = 2.7V to 5.5V, and 5V ±10%
  - Standby current < 1µA
- High Reliability
  - Endurance, 100,000 data changes per bit
  - Register data retention, 100 years
- R_{TOTAL} Values = 1kΩ, 10kΩ, 50kΩ, 100kΩ
- Packages
  - 8-lead SOIC, DIP, TSSOP, and MSOP

Applications

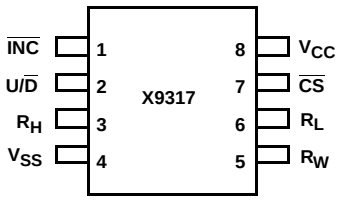
- LCD Bias Control
- DC Bias Adjustment
- Gain and Offset Trim
- Laser Diode Bias Control
- Voltage Regulator Output Control

Pinouts

X9317
(8-LD TSSOP)
TOP VIEW



X9317
(8-LD DIP/SOIC/MSOP)
TOP VIEW



Ordering Information

PART NUMBER	RTOTAL	PACKAGE	TEMP RANGE (°C)
X9317ZS8	1kΩ	8-lead SOIC	0 to 70
X9317ZS8I	1kΩ	8-lead SOIC	-40 to +85
X9317ZP	1kΩ	8-lead Plastic DIP	0 to 70
X9317ZV8	1kΩ	8-lead TSSOP	0 to 70
X9317ZV8I	1kΩ	8-lead TSSOP	-40 to +85
X9317ZM8	1kΩ	8-lead MSOP	0 to 70
X9317ZM8I	1kΩ	8-lead MSOP	-40 to +85
X9317WS8	10kΩ	8-lead SOIC	0 to 70
X9317WS8I	10kΩ	8-lead SOIC	-40 to +85
X9317WP	10kΩ	8-lead Plastic DIP	0 to 70
X9317WPI	10kΩ	8-lead Plastic DIP	-40 to +85
X9317WV8	10kΩ	8-lead TSSOP	0 to 70
X9317WV8I	10kΩ	8-lead TSSOP	-40 to +85
X9317WM8	10kΩ	8-lead MSOP	0 to 70
X9317WM8I	10kΩ	8-lead MSOP	-40 to +85
X9317US	50kΩ	8-lead SOIC	0 to 70
X9317US8	50kΩ	8-lead SOIC	0 to 70

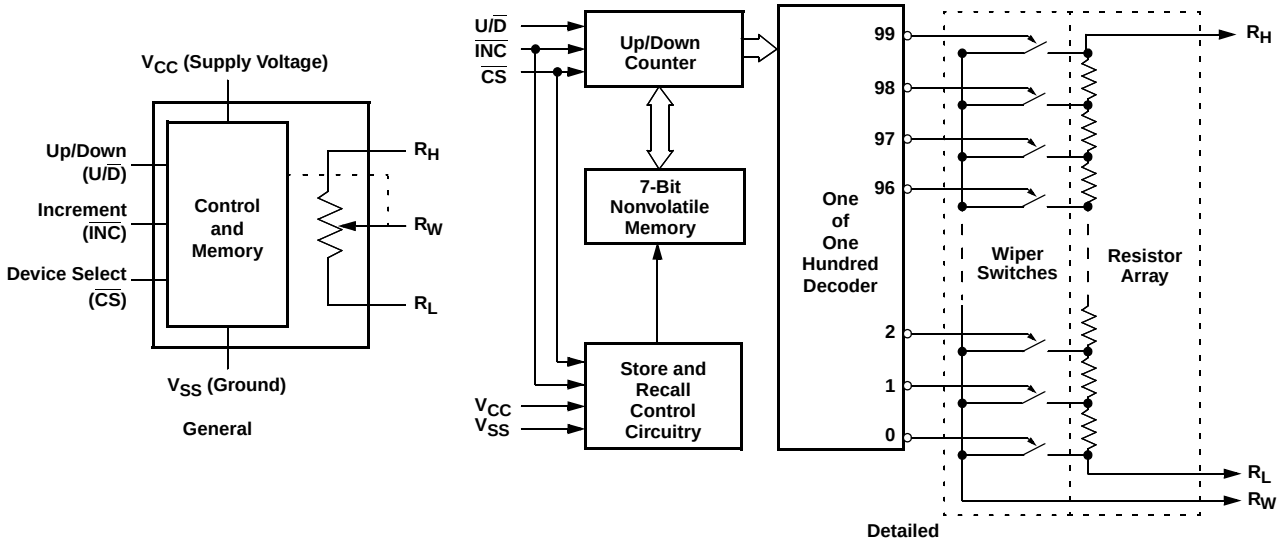
Ordering Information (Continued)

PART NUMBER	RTOTAL	PACKAGE	TEMP RANGE (°C)
X9317US8I	50kΩ	8-lead SOIC	-40 to +85
X9317UP	50kΩ	8-lead Plastic DIP	0 to 70
X9317UPI	50kΩ	8-lead Plastic DIP	-40 to +85
X9317UV8	50kΩ	8-lead TSSOP	0 to 70
X9317UV8I	50kΩ	8-lead TSSOP	-40 to +85
X9317UM8	50kΩ	8-lead MSOP	0 to 70
X9317UM8I	50kΩ	8-lead MSOP	-40 to +85
X9317TS8	100kΩ	8-lead SOIC	0 to 70
X9317TS8I	100kΩ	8-lead SOIC	-40 to +85
X9317TP	100kΩ	8-lead Plastic DIP	0 to 70
X9317TPI	100kΩ	8-lead Plastic DIP	-40 to +85
X9317TV8	100kΩ	8-lead TSSOP	0 to 70
X9317TV8I	100kΩ	8-lead TSSOP	-40 to +85
X9317TM8	100kΩ	8-lead MSOP	0 to 70
X9317TM8I	100kΩ	8-lead MSOP	-40 to +85

NOTES:

1. Add “-T1” or “-T2” suffix for tape and reel.
2. Add “-2.7” for 2.7V to 5.5V V_{CC} Limits option.

Block Diagram



Pin Descriptions

DIP/SOIC	SYMBOL	BRIEF DESCRIPTION
1	$\overline{INC}$	**Increment**. Toggling $\overline{INC}$ while $\overline{CS}$ is low moves the wiper either up or down.
2	U/$\overline{D}$	**Up/Down**. The U/$\overline{D}$ input controls the direction of the wiper movement.
3	R_H	The high terminal is equivalent to one of the fixed terminals of a mechanical potentiometer.
4	V_{SS}	**Ground.**
5	R_W	The wiper terminal is equivalent to the movable terminal of a mechanical potentiometer.
6	R_L	The low terminal is equivalent to one of the fixed terminals of a mechanical potentiometer.
7	$\overline{CS}$	**Chip Select**. The device is selected when the $\overline{CS}$ input is LOW, and de-selected when $\overline{CS}$ is high.
8	V_{CC}	**Supply Voltage.**

Absolute Maximum Ratings

Junction Temperature under bias. . . . . .-65°C to +135°C
Storage temperature . . . . . .-65°C to +150°C
Voltage on $\overline{CS}$, $\overline{INC}$, U/$\overline{D}$ and V_{CC}
with respect to V_{SS} . . . . . -1V to +7V
R_H, R_W, R_L to ground . . . . . .+6V

Lead temperature (soldering 10 seconds) . . . . . 300°C
I_W (10 seconds) . . . . . ±8.8mA

CAUTION: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only; functional operation of the device (at these or any other conditions above those listed in the operational sections of this specification) is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Potentiometer Specifications

V_{CC} = Full Range, T_A = Full Operating Temperature Range unless otherwise stated

SYMBOL	PARAMETER	TEST CONDITIONS/NOTES	MIN	TYP (Note 4)	MAX	UNIT
R_{TOTAL}	End to end resistance tolerance	See ordering information for values	-20		+20	%
$V_{RH}/_{RL}$	R_H/R_L terminal voltage	V_{SS} = 0V	V_{SS}		V_{CC}	V
	Power rating	$R_{TOTAL} \geq 10k\Omega$			10	mW
		R_{TOTAL} = 1kΩ			25	mW
R_W	Wiper resistance	I_W = 1mA, V_{CC} = 5V		200	400	Ω
		I_W = 1mA, V_{CC} = 2.7V		400	1000	Ω
I_W	Wiper current (Note 5)	See test circuit	-4.4		+4.4	mA
	Noise (Note 7)	Ref: 1kHz		-120		dBV
	Resolution			1		%
	Absolute linearity (Note 1)	V(RH) = V_{CC}, V(RL) = 0V	-1		+1	MI (Note 3)
	Relative linearity (Note 2)		-0.2		+0.2	MI (Note 3)
	R_{TOTAL} temperature coefficient (Note 5)			±300		ppm/°C
	Ratiometric temperature coefficient (Notes 5, 6)		-20		+20	ppm/°C
$C_H/C_L/C_W$ (Note 5)	Potentiometer capacitances	See equivalent circuit		10/10/25		pF
V_{CC}	Supply Voltage	X9317	4.5		5.5	V
		X9317-2.7	2.7		5.5	V

DC Electrical Specifications

V_{CC} = 5V ±10%, T_A = Full Operating Temperature Range unless otherwise stated

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP (Note 4)	MAX	UNIT
I_{CC1}	V_{CC} active current (Increment)	$\overline{CS}$ = V_{IL}, U/$\overline{D}$ = V_{IL} or V_{IH} and $\overline{INC}$ = V_{IL}/V_{IH} @ min. t_{CYC} R_L, R_H, R_W not connected			50	µA
I_{CC2}	V_{CC} active current (Store) (non-volatile write)	$\overline{CS}$ = V_{IH}, U/$\overline{D}$ = V_{IL} or V_{IH} and $\overline{INC}$ = V_{IL} or V_{IH}. R_L, R_H, R_W not connected			400	µA
I_{SB}	Standby supply current	$\overline{CS} \geq V_{IH}$, U/$\overline{D}$ and $\overline{INC}$ = V_{IL} R_L, R_H, R_W not connected			1	µA
I_{LI}	$\overline{CS}$, $\overline{INC}$, U/$\overline{D}$ input leakage current	V_{IN} = V_{SS} to V_{CC}	-10		+10	µA
V_{IH}	$\overline{CS}$, $\overline{INC}$, U/$\overline{D}$ input HIGH voltage		V_{CC} x 0.7		V_{CC} + 0.5	V
V_{IL}	$\overline{CS}$, $\overline{INC}$, U/$\overline{D}$ input LOW voltage		-0.5		V_{CC} x 0.1	V

DC Electrical Specifications V_{CC} = 5V ±10%, T_A = Full Operating Temperature Range unless otherwise stated **(Continued)**

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP (Note 4)	MAX	UNIT
C_{IN} (Note 5)	$\overline{CS}$, $\overline{INC}$, U/$\overline{D}$ input capacitance	V_{CC} = 5V, V_{IN} = V_{SS}, T_A = 25°C, f = 1MHz			10	pF

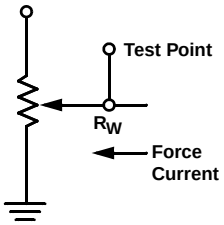
Endurance and Data Retention V_{CC} = 5V ±10%, T_A = Full Operating Temperature Range

PARAMETER	MIN	UNIT
Minimum endurance	100,000	Data changes per bit
Data retention	100	Years

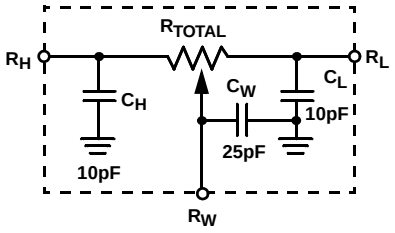
NOTES:

1. Absolute linearity is utilized to determine actual wiper voltage versus expected voltage = $[V(R_{W(n)(actual)})-V(R_{W(n)(expected)})]/MI$ $V(R_{W(n)(expected)}) = n(V(R_H)-V(R_L))/99 + V(R_L)$, with n from 0 to 99.
2. Relative linearity is a measure of the error in step size between taps = $[V(R_{W(n+1)})-(V(R_{W(n)}) - MI)]/MI$.
3. 1 MI = Minimum Increment = $[V(R_H)-V(R_L)]/99$.
4. Typical values are for T_A = 25°C and nominal supply voltage.
5. This parameter is not 100% tested.
6. Ratiometric temperature coefficient = $(V(R_W)_{T1(n)}-V(R_W)_{T2(n)})/[V(R_W)_{T1(n)}(T1-T2) \times 10^6]$, with T1 & T2 being 2 temperatures, and n from 0 to 99.
7. Measured with wiper at tap position 99, R_L grounded, using test circuit.

Test Circuit



Equivalent Circuit



A.C. Conditions of Test

Input pulse levels	0V to 3V
Input rise and fall times	10ns
Input reference levels	1.5V

AC Electrical Specifications V_{CC} = 5V ±10%, T_A = Full Operating Temperature Range unless otherwise stated

SYMBOL	PARAMETER	MIN	TYP (Note 4)	MAX	UNIT
t_{CI}	$\overline{CS}$ to $\overline{INC}$ setup	50			ns
t_{ID} (Note 5)	$\overline{INC}$ HIGH to U/$\overline{D}$ change	100			ns
t_{DI} (Note 5)	U/$\overline{D}$ to $\overline{INC}$ setup	1			µs
t_{IL}	$\overline{INC}$ LOW period	960			ns
t_{IH}	$\overline{INC}$ HIGH period	960			ns
t_{IC}	$\overline{INC}$ inactive to $\overline{CS}$ inactive	1			µs
t_{CPHS}	$\overline{CS}$ deselect time (STORE)	10			ms
t_{CPHNS} (Note 5)	$\overline{CS}$ deselect time (NO STORE)	100			ns
t_{IW}	$\overline{INC}$ to R_W change		1	5	µs

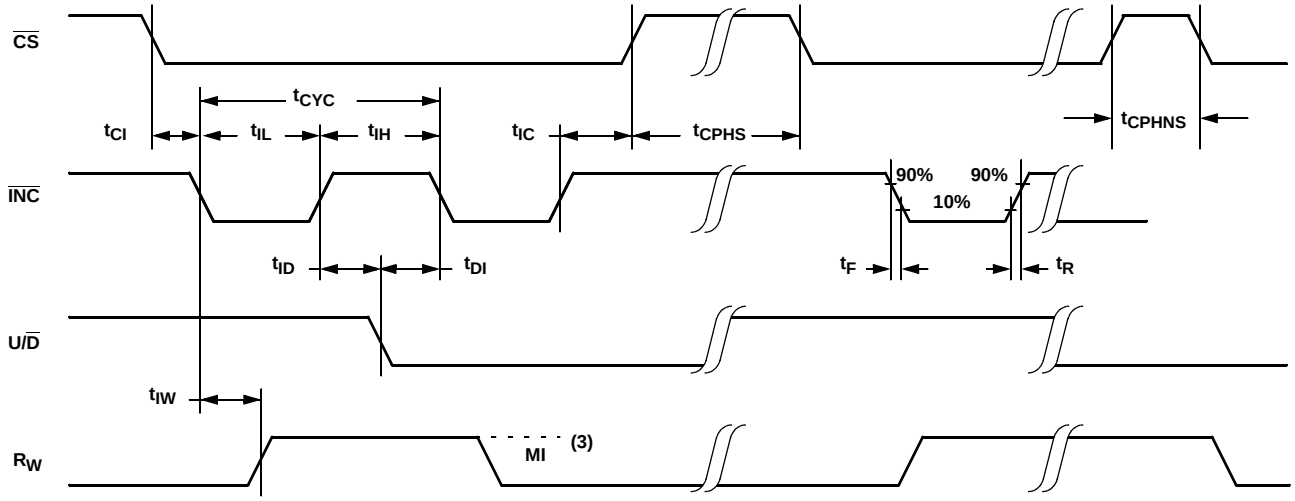
AC Electrical Specifications V_{CC} = 5V ±10%, T_A = Full Operating Temperature Range unless otherwise stated **(Continued)**

SYMBOL	PARAMETER	MIN	TYP (Note 4)	MAX	UNIT
t_{CYC}	$\overline{INC}$ cycle time	2			µs
t_R, t_F (Note 5)	$\overline{INC}$ input rise and fall time			500	µs
t_{PU} (Note 5)	Power up to wiper stable			5	µs
$t_R V_{CC}$ (Note 5)	V_{CC} power-up rate	0.2		50	V/ms
t_{WR}	Store Cycle		5	10	ms

Power Up and DOWN Requirements

The recommended power up sequence is to apply V_{CC}/V_{SS} first, then the potentiometer voltages. During power-up, the data sheet parameters for the DCP do not fully apply until 1 millisecond after V_{CC} reaches its final value. The V_{CC} ramp spec is always in effect. In order to prevent unwanted tap position changes, or an inadvertent store, bring the $\overline{CS}$ and $\overline{INC}$ high before or concurrently with the V_{CC} pin on powerup.

A.C. Timing



Typical Performance Characteristics

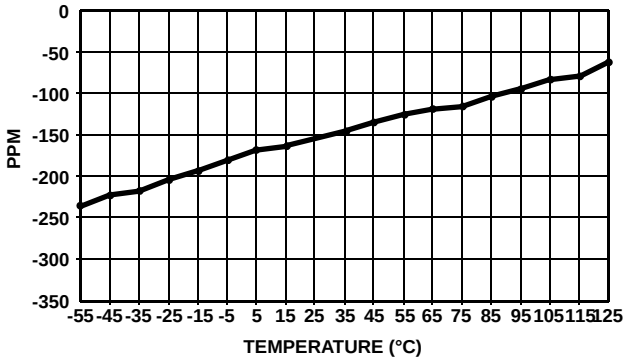


FIGURE 1. TYPICAL TOTAL RESISTANCE TEMPERATURE COEFFICIENT

Pin Descriptions

R_H and R_L

The high (R_H) and low (R_L) terminals of the X9317 are equivalent to the fixed terminals of a mechanical potentiometer. The terminology of R_L and R_H references the relative position of the terminal in relation to wiper movement direction selected by the U/$\overline{D}$ input and not the voltage potential on the terminal.

R_W

R_W is the wiper terminal and is equivalent to the movable terminal of a mechanical potentiometer. The position of the wiper within the array is determined by the control inputs. The wiper terminal series resistance is typically 200Ω.

Up/Down (U/$\overline{D}$)

The U/$\overline{D}$ input controls the direction of the wiper movement and whether the counter is incremented or decremented.

Increment ($\overline{INC}$)

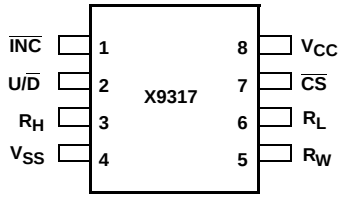
The $\overline{INC}$ input is negative-edge triggered. Toggling $\overline{INC}$ will move the wiper and either increment or decrement the counter in the direction indicated by the logic level on the U/$\overline{D}$ input.

Chip Select ($\overline{CS}$)

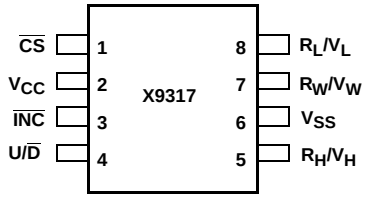
The device is selected when the $\overline{CS}$ input is LOW. The current counter value is stored in nonvolatile memory when $\overline{CS}$ is returned HIGH while the $\overline{INC}$ input is also HIGH. After the store operation is complete the X9317 will be placed in the low power standby mode until the device is selected once again.

Pin Configuration

DIP/SOIC/MSOP



TSSOP



Pin Names

SYMBOL	DESCRIPTION
R_H	High terminal
R_W	Wiper terminal
R_L	Low terminal
V_{SS}	Ground
V_{CC}	Supply voltage
U/$\overline{D}$	Up/Down control input
$\overline{INC}$	Increment control input
$\overline{CS}$	Chip select control input

Principles of Operation

There are three sections of the X9317: the control section, the nonvolatile memory, and the resistor array. The control section operates just like an up/down counter. The output of this counter is decoded to turn on a single electronic switch connecting a point on the resistor array to the wiper output. The contents of the counter can be stored in nonvolatile memory and retained for future use. The resistor array is comprised of 99 individual resistors connected in series. Electronic switches at either end of the array and between each resistor provide an electrical connection to the wiper pin, R_W.

The wiper acts like its mechanical equivalent and does not move beyond the first or last position. That is, the counter does not wrap around when clocked to either extreme.

The electronic switches on the device operate in a “make before break” mode when the wiper changes tap positions. If the wiper is moved several positions, multiple taps are connected to the wiper for t_{IW} ($\overline{INC}$ to V_W change). The R_{TOTAL} value for the device can temporarily be reduced by a significant amount if the wiper is moved several positions.

When the device is powered-down, the last wiper position stored will be maintained in the nonvolatile memory. When power is restored, the contents of the memory are recalled and the wiper is set to the value last stored.

Instructions and Programming

The $\overline{INC}$, U/$\overline{D}$ and $\overline{CS}$ inputs control the movement of the wiper along the resistor array. With $\overline{CS}$ set LOW the device is selected and enabled to respond to the U/$\overline{D}$ and $\overline{INC}$ inputs. HIGH to LOW transitions on $\overline{INC}$ will increment or decrement (depending on the state of the U/$\overline{D}$ input) a seven bit counter. The output of this counter is decoded to select one of one hundred wiper positions along the resistive array.

The value of the counter is stored in nonvolatile memory whenever $\overline{CS}$ transitions HIGH while the $\overline{INC}$ input is also HIGH.

The system may select the X9317, move the wiper and deselect the device without having to store the latest wiper position in nonvolatile memory. After the wiper movement is performed as described above and once the new position is reached, the system must keep $\overline{INC}$ LOW while taking $\overline{CS}$ HIGH. The new wiper position will be maintained until changed by the system or until a powerup/down cycle recalled the previously stored data.

This procedure allows the system to always power-up to a preset value stored in nonvolatile memory; then during system operation minor adjustments could be made. The adjustments might be based on user preference, system parameter changes due to temperature drift, etc.

The state of U/$\overline{D}$ may be changed while $\overline{CS}$ remains LOW. This allows the host system to enable the device and then move the wiper up and down until the proper trim is attained.

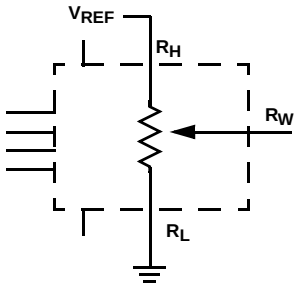
Mode Selection

$\overline{CS}$	$\overline{INC}$	U/$\overline{D}$	MODE
L	↘	H	Wiper up
L	↘	L	Wiper down
↗	H	X	Store wiper position to nonvolatile memory
H	X	X	Standby
↗	L	X	No store, return to standby
↘	L	H	Wiper Up (not recommended)
↘	L	L	Wiper Down (not recommended)

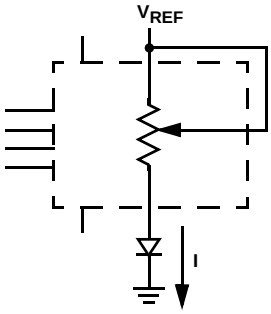
Applications Information

Electronic digitally controlled (XDCP) potentiometers provide three powerful application advantages; (1) the variability and reliability of a solid-state potentiometer, (2) the flexibility of computer-based digital controls, and (3) the retentivity of nonvolatile memory used for the storage of multiple potentiometer settings or data.

Basic Configurations of Electronic Potentiometers



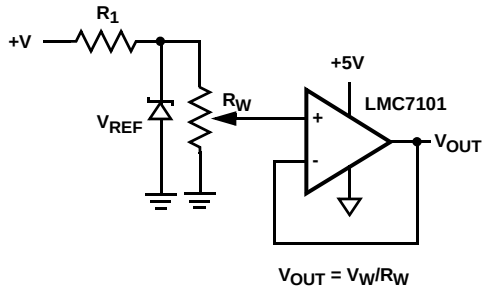
Three terminal potentiometer; variable voltage divider



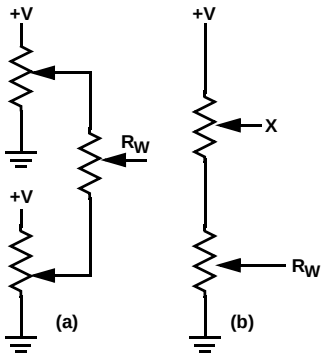
Two terminal variable resistor; variable current

Basic Circuits

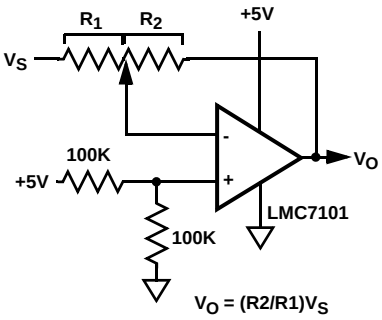
Buffered Reference Voltage



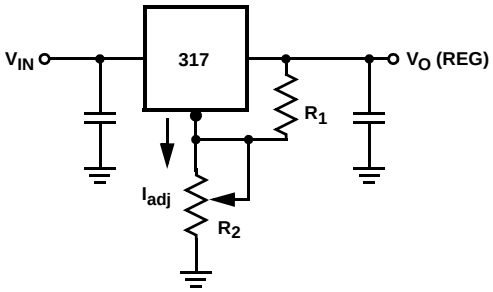
Cascading Techniques



Single Supply Inverting Amplifier

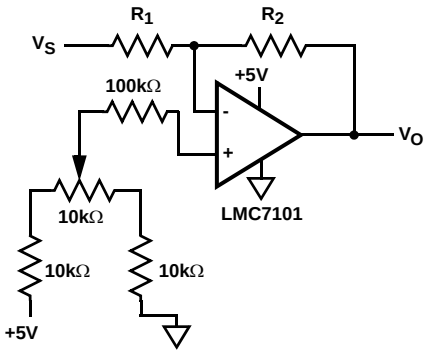


Voltage Regulator

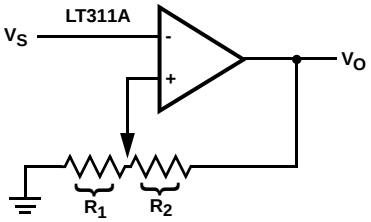


V_O (REG) = 1.25V (1+R_2/R_1)+I_{adj} R_2

Offset Voltage Adjustment



Comparator with Hysteresis

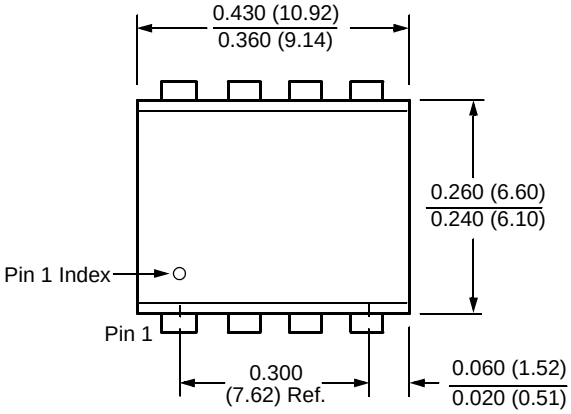


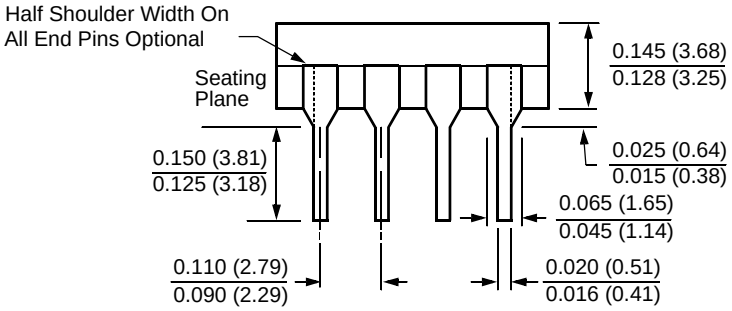
V_{UL} = {R_1/(R_1+R_2)} V_O(max)
V_{LL} = {R_1/(R_1+R_2)} V_O(min)

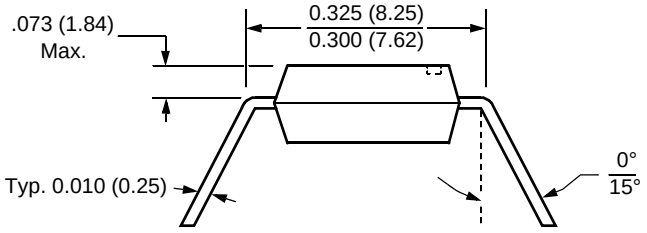
(for additional circuits see AN115)

Packaging Information

8-Lead Plastic Dual In-Line (DIP) Package Type P





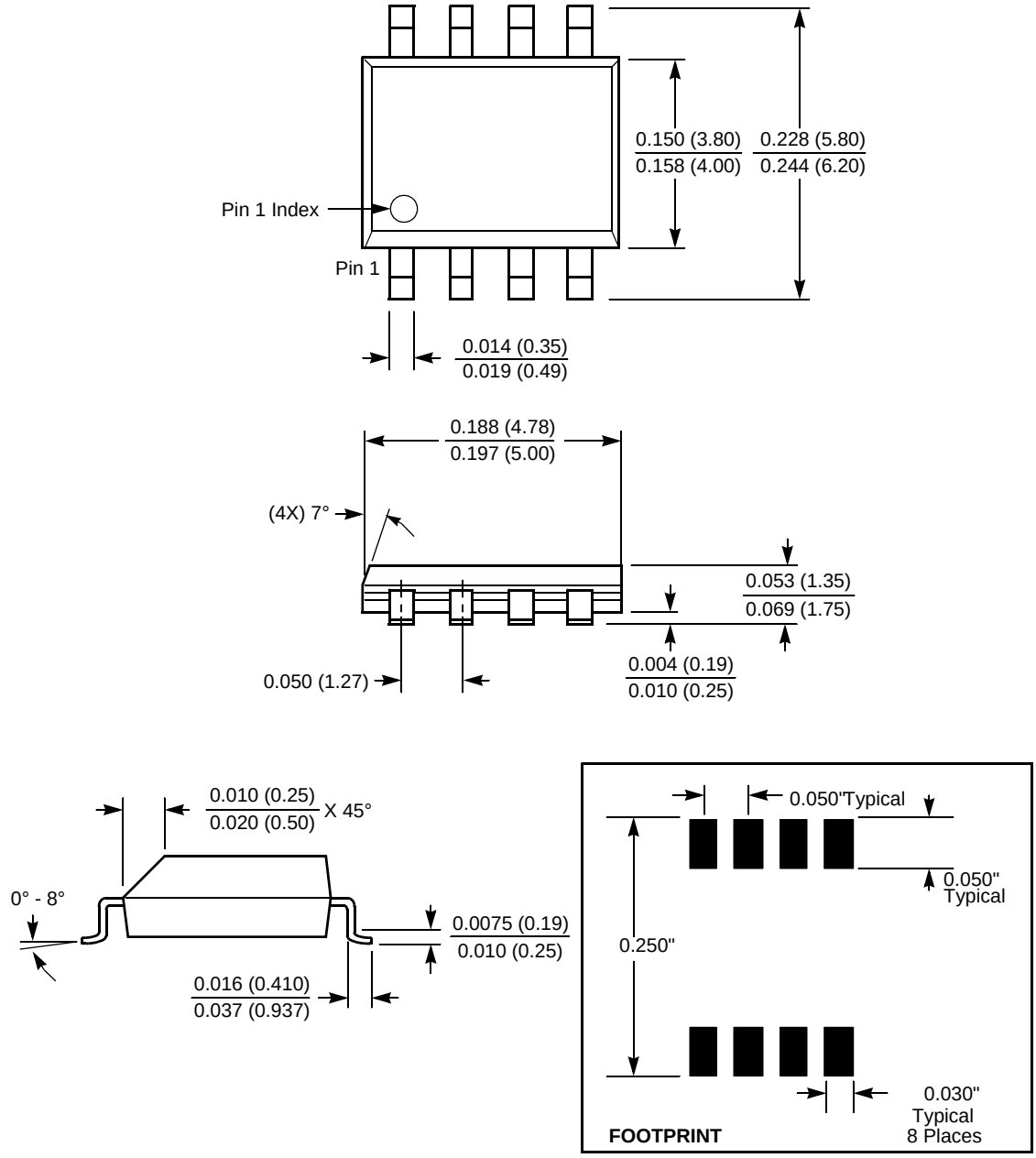


NOTE:

1. **ALL DIMENSIONS IN INCHES (IN PARENTHESES IN MILLIMETERS)**
2. **PACKAGE DIMENSIONS EXCLUDE MOLDING FLASH**

Packaging Information

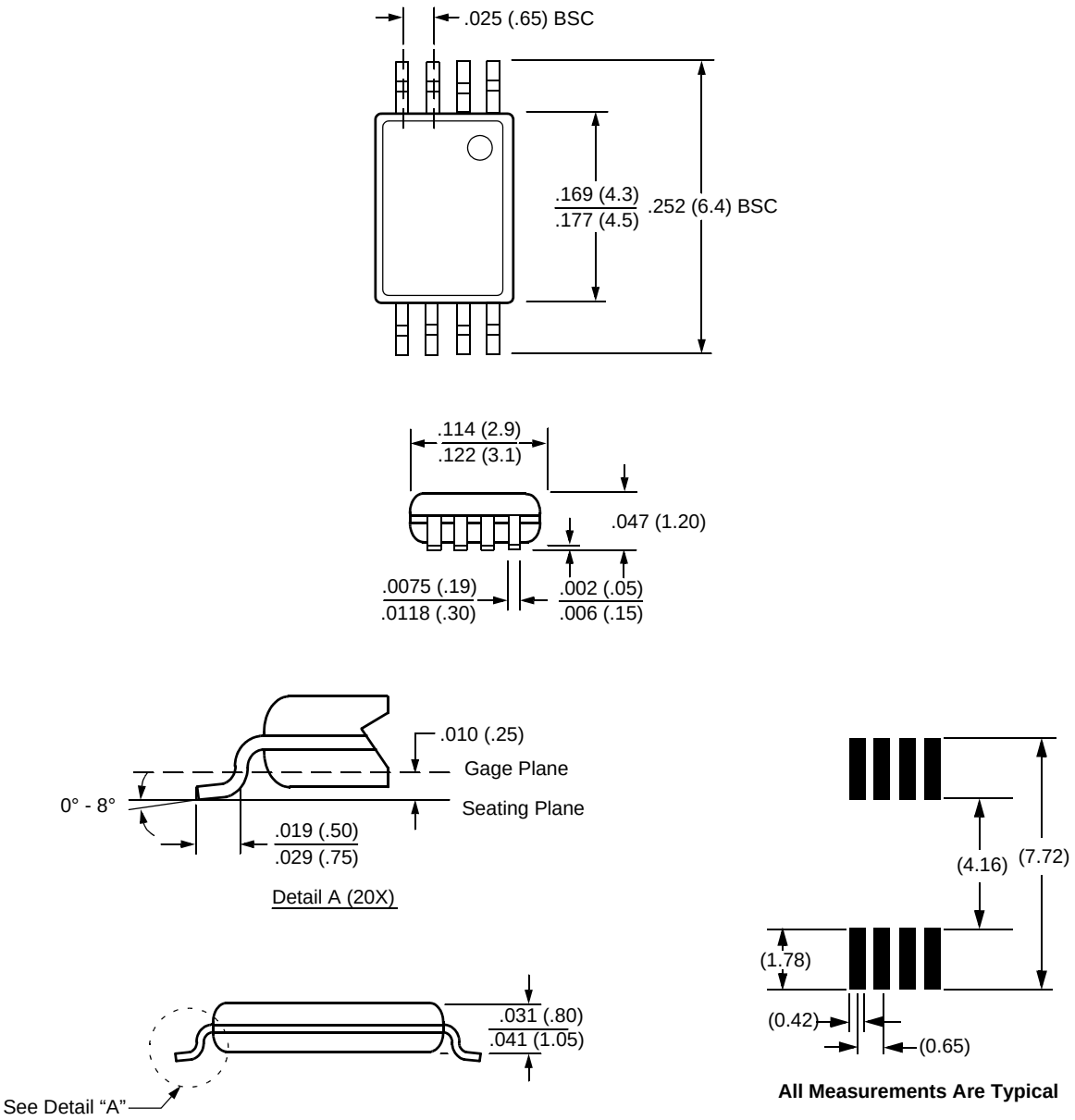
8-Lead Plastic Small Outline Gull Wing Package Type S (SOIC)



NOTE: ALL DIMENSIONS IN INCHES (IN PARENTHESES IN MILLIMETERS)

Packaging Information

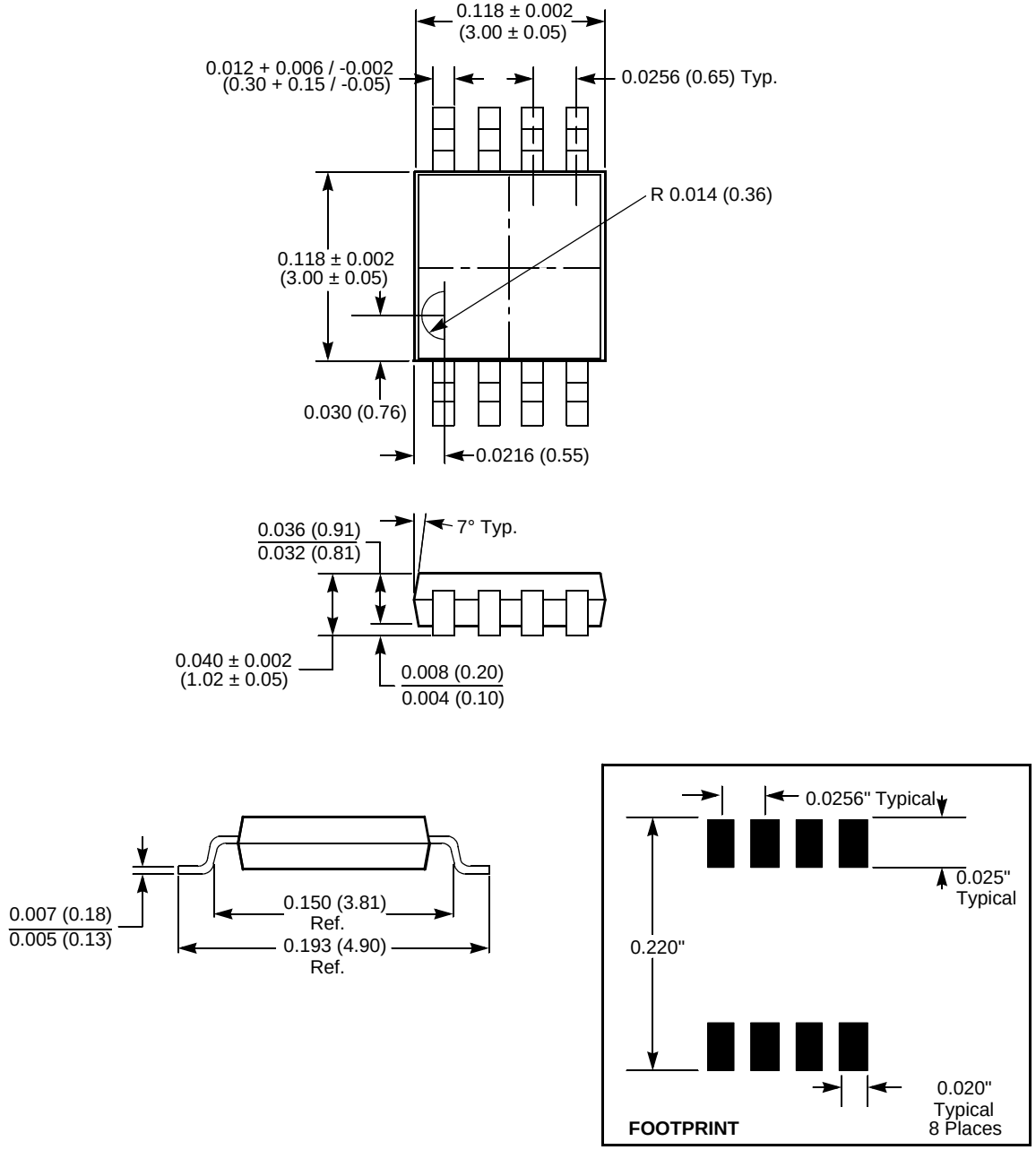
8-Lead Plastic, TSSOP, Package Type V



NOTE: ALL DIMENSIONS IN INCHES (IN PARENTHESES IN MILLIMETERS)

Packaging Information

M Package
8-Lead Miniature Small Outline Gull Wing Package Type MSOP



NOTE:
1. ALL DIMENSIONS IN INCHES AND (MILLIMETERS)

All Intersil U.S. products are manufactured, assembled and tested utilizing ISO9000 quality systems.
Intersil Corporation's quality certifications can be viewed at www.intersil.com/design/quality

X9317

Printer Friendly Version

Digitally Controlled Potentiometer (XDCP™)

DS Datasheets, Related Docs & Simulations | Description | Key Features | PT Parametric Data | Related Devices

Ordering Information — RoHS/Pb-Free/Green Device

Part No.	Design-In Status	Temp.	Package	MSL	Price US $	
X9317TM8	Active	Comm	8 Ld MSOP	1	2.30	Buy
X9317TM8-2.7	Active	Comm	8 Ld MSOP	1	2.54	Buy
X9317TM8-2.7T1	Active	Comm	8 Ld MSOP T+R	1	2.54	Buy
X9317TM8-2.7T2	Active	Comm	8 Ld MSOP T+R	1	2.54	Buy
X9317TM8I	Active	Ind	8 Ld MSOP	1	2.87	Buy
X9317TM8I-2.7	Active	Ind	8 Ld MSOP	1	3.17	Buy
X9317TM8I-2.7T1	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317TM8I-2.7T2	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317TM8IT1	Active	Ind	8 Ld MSOP T+R	1	2.87	Buy
X9317TM8IT2	Active	Ind	8 Ld MSOP T+R	1	2.87	Buy
X9317TM8IZ	Active	Ind	8 Ld MSOP	2	2.87	Buy
X9317TM8IZ-2.7	Active	Ind	8 Ld MSOP	2	3.17	Buy
X9317TM8IZ-2.7T1	Active	Ind	8 Ld MSOP T+R	2	3.17	Buy
X9317TM8IZT1	Active	Ind	8 Ld MSOP T+R	2	2.30	Buy
X9317TM8T1	Active	Comm	8 Ld MSOP T+R	1	2.30	Buy
X9317TM8T2	Active	Comm	8 Ld MSOP T+R	1	2.30	Buy
X9317TM8Z	Active	Comm	8 Ld MSOP	2	2.30	Buy
X9317TM8Z-2.7	Active	Comm	8 Ld MSOP	2	2.54	Buy
X9317TM8Z-2.7T1	Active	Comm	8 Ld MSOP T+R	2	2.54	Buy
X9317TM8ZT1	Active	Comm	8 Ld MSOP T+R	2	2.30	Buy
X9317TP	Active	Comm	8 Ld PDIP	N/A	1.96	Buy
X9317TP-2.7	Active	Comm	8 Ld PDIP	N/A	2.15	Buy
X9317TPI	Active	Ind	8 Ld PDIP	N/A	2.44	Buy
X9317TPI-2.7	Active	Ind	8 Ld PDIP	N/A	2.68	Buy
X9317TS8	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317TS8-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy
X9317TS8-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317TS8-2.7T2	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317TS8I	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317TS8I-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy Sample
X9317TS8I-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317TS8I-2.7T2	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317TS8IZ	Active	Ind	8 Ld SOIC	1	2.44	Buy

X9317TS8IZ-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317TS8IZ-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317TS8Z	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317TS8Z-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy
X9317TS8Z-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317TV8	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317TV8-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317TV8-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317TV8-2.7T2	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317TV8I	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317TV8I-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317TV8I-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317TV8I-2.7T2	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317TV8IT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317TV8IT2	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317TV8IZ	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317TV8IZ-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317TV8IZ-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317TV8IZT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317TV8T1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317TV8T2	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317TV8Z	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317TV8Z-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317TV8Z-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317TV8ZT1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317UM8	Active	Comm	8 Ld MSOP	1	2.30	Buy Sample
X9317UM8-2.7	Active	Comm	8 Ld MSOP	1	2.54	Buy
X9317UM8-2.7T1	Active	Comm	8 Ld MSOP T+R	1	2.54	Buy
X9317UM8I	Active	Ind	8 Ld MSOP	1	2.87	Buy
X9317UM8I-2.7	Active	Ind	8 Ld MSOP	1	3.17	Buy
X9317UM8I-2.7C7898	Active	Ind	8 Ld MSOP	1		Buy
X9317UM8I-2.7T1	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317UM8I-2.7T2	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317UM8IT1	Active	Ind	8 Ld MSOP T+R	1	2.87	Buy
X9317UM8IZ	Active	Ind	8 Ld MSOP	2	2.87	Buy
X9317UM8IZ-2.7	Active	Ind	8 Ld MSOP	2	3.17	Buy Sample
X9317UM8IZ-2.7T1	Active	Ind	8 Ld MSOP T+R	2	3.17	Buy
X9317UM8IZT1	Active	Ind	8 Ld MSOP T+R	2	2.87	Buy
X9317UM8T1	Active	Comm	8 Ld MSOP T+R	1	2.30	Buy
X9317UM8Z	Active	Comm	8 Ld MSOP	2	2.30	Buy
X9317UM8Z-2.7	Active	Comm	8 Ld MSOP	2	2.54	Buy
X9317UM8Z-2.7T1	Active	Comm	8 Ld MSOP T+R	2	2.54	Buy

X9317UM8ZT1	Active	Comm	8 Ld MSOP T+R	2	2.30	Buy
X9317UP	Active	Comm	8 Ld PDIP	N/A	1.96	Buy
X9317UP-2.7	Active	Comm	8 Ld PDIP	N/A	2.15	Buy
X9317UPI	Active	Ind	8 Ld PDIP	N/A	2.44	Buy
X9317UPI-2.7	Active	Ind	8 Ld PDIP	N/A	2.68	Buy
X9317US8	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317US8-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy Sample
X9317US8-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317US8C1039	Active	Comm	8 Ld SOIC	1		Buy
X9317US8C7898	Active	Comm	8 Ld SOIC	1		Buy
X9317US8I	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317US8I-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317US8I-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317US8I-2.7T2	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317US8IT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317US8IZ	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317US8IZ-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317US8IZ-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317US8IZT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317US8T1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317US8Z	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317US8Z-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy
X9317US8Z-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317US8ZT1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317UV8	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317UV8-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317UV8-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317UV8C7898	Active	Comm	8 Ld TSSOP	1		Buy
X9317UV8I	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317UV8I-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317UV8I-2.7C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317UV8I-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317UV8I-2.7T2	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317UV8IC7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317UV8IT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317UV8IZ	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317UV8IZ-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317UV8IZ-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317UV8IZT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317UV8T1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317UV8Z	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317UV8Z-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317UV8Z-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy

X9317UV8ZT1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317WM8	Active	Comm	8 Ld MSOP	1	2.30	Buy
X9317WM8-2.7	Active	Comm	8 Ld MSOP	1	2.54	Buy Sample
X9317WM8-2.7T1	Active	Comm	8 Ld MSOP T+R	1	2.54	Buy
X9317WM8I	Active	Ind	8 Ld MSOP	1	2.87	Buy
X9317WM8I-2.7	Active	Ind	8 Ld MSOP	1	3.17	Buy
X9317WM8I-2.7T1	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317WM8IT1	Active	Ind	8 Ld MSOP T+R	1	2.87	Buy
X9317WM8IZ	Active	Ind	8 Ld MSOP	2	2.87	Buy
X9317WM8IZ-2.7	Active	Ind	8 Ld MSOP	2	3.17	Buy
X9317WM8IZ-2.7T1	Active	Ind	8 Ld MSOP T+R	2	3.17	Buy
X9317WM8IZT1	Active	Ind	8 Ld MSOP T+R	2	2.87	Buy
X9317WM8T1	Active	Comm	8 Ld MSOP T+R	1	2.30	Buy
X9317WM8Z	Active	Comm	8 Ld MSOP	2	2.30	Buy
X9317WM8Z-2.7	Active	Comm	8 Ld MSOP	2	2.54	Buy
X9317WM8Z-2.7T1	Active	Comm	8 Ld MSOP T+R	2	2.54	Buy
X9317WM8ZT1	Active	Comm	8 Ld MSOP T+R	2	2.30	Buy
X9317WP	Active	Comm	8 Ld PDIP	N/A	1.96	Buy
X9317WP-2.7	Active	Comm	8 Ld PDIP	N/A	2.15	Buy
X9317WPI	Active	Ind	8 Ld PDIP	N/A	2.44	Buy
X9317WPI-2.7	Active	Ind	8 Ld PDIP	N/A	2.68	Buy
X9317WS8	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317WS8-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy Sample
X9317WS8-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317WS8C7898	Active	Comm	8 Ld SOIC	1		Buy
X9317WS8I	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317WS8I-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317WS8I-2.7C7898	Active	Ind	8 Ld SOIC	1		Buy
X9317WS8I-2.7C7923	Active	Ind	8 Ld SOIC	1		Buy
X9317WS8I-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317WS8I-2.7T1C7898	Active	Ind	8 Ld SOIC	1		Buy
X9317WS8I-2.7T2	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317WS8I-2.7T2C7898	Active	Ind	8 Ld SOIC T+R	1		Buy
X9317WS8IC7898	Active	Ind	8 Ld SOIC	1		Buy
X9317WS8IT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317WS8IT1C7975	Active	Ind	8 Ld SOIC	1		Buy
X9317WS8IZ	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317WS8IZ-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317WS8IZ-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317WS8IZT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317WS8T1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317WS8Z	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317WS8Z-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy Sample

X9317WS8Z-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317WS8ZT1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317WV8	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317WV8-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317WV8-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317WV8C7898	Active	Comm	8 Ld TSSOP	1		Buy
X9317WV8I	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317WV8I-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317WV8I-2.7C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8I-2.7C7938	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8I-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317WV8I-2.7T1C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8I-2.7T1C7938	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8I-2.7T2	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317WV8I-2.7T2C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8I-2.7T3C7517	Active	Ind	8 Ld TSSOP	3		Buy
X9317WV8IC7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317WV8IT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317WV8IZ	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317WV8IZ-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317WV8IZ-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317WV8IZT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317WV8T1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317WV8T2	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317WV8Z	Active	Comm	8 Ld TSSOP	1	2.30	Buy Sample
X9317WV8Z-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317WV8Z-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317WV8ZT1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317ZM8	Active	Comm	8 Ld MSOP	1	2.30	Buy
X9317ZM8-2.7	Active	Comm	8 Ld MSOP	1	2.54	Buy Sample
X9317ZM8-2.7C7898	Active	Comm	8 Ld MSOP	1		Buy
X9317ZM8-2.7T1	Active	Comm	8 Ld MSOP T+R	1	2.54	Buy
X9317ZM8I	Active	Ind	8 Ld MSOP	1	2.87	Buy
X9317ZM8I-2.7	Active	Ind	8 Ld MSOP	1	3.17	Buy
X9317ZM8I-2.7C7898	Active	Ind	8 Ld MSOP	1		Buy
X9317ZM8I-2.7T1	Active	Ind	8 Ld MSOP T+R	1	3.17	Buy
X9317ZM8IT1	Active	Ind	8 Ld MSOP T+R	1	2.87	Buy
X9317ZM8IZ	Active	Ind	8 Ld MSOP	2	2.87	Buy
X9317ZM8IZ-2.7	Active	Ind	8 Ld MSOP	2	3.17	Buy
X9317ZM8IZ-2.7T1	Active	Ind	8 Ld MSOP T+R	2	3.17	Buy
X9317ZM8IZT1	Active	Ind	8 Ld MSOP T+R	2	2.87	Buy
X9317ZM8T1	Active	Comm	8 Ld MSOP T+R	1	2.30	Buy
X9317ZM8Z	Active	Comm	8 Ld MSOP	2	2.30	Buy

X9317ZM8Z-2.7	Active	Comm	8 Ld MSOP	2	2.54	Buy Sample
X9317ZM8Z-2.7T1	Active	Comm	8 Ld MSOP T+R	2	2.54	Buy
X9317ZM8ZT1	Active	Comm	8 Ld MSOP T+R	2	2.30	Buy
X9317ZP	Active	Comm	8 Ld PDIP	N/A	1.96	Buy
X9317ZS8	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317ZS8-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy Sample
X9317ZS8-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317ZS8I	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317ZS8I-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317ZS8I-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317ZS8IT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317ZS8IZ	Active	Ind	8 Ld SOIC	1	2.44	Buy
X9317ZS8IZ-2.7	Active	Ind	8 Ld SOIC	1	2.68	Buy
X9317ZS8IZ-2.7T1	Active	Ind	8 Ld SOIC T+R	1	2.68	Buy
X9317ZS8IZT1	Active	Ind	8 Ld SOIC T+R	1	2.44	Buy
X9317ZS8T1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317ZS8Z	Active	Comm	8 Ld SOIC	1	1.96	Buy
X9317ZS8Z-2.7	Active	Comm	8 Ld SOIC	1	2.15	Buy
X9317ZS8Z-2.7T1	Active	Comm	8 Ld SOIC T+R	1	2.15	Buy
X9317ZS8ZT1	Active	Comm	8 Ld SOIC T+R	1	1.96	Buy
X9317ZV8	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317ZV8-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317ZV8-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317ZV8I	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317ZV8I-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317ZV8I-2.7C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317ZV8I-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317ZV8I-2.7T1C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317ZV8I-2.7T2	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317ZV8I-2.7T2C7898	Active	Ind	8 Ld TSSOP	1		Buy
X9317ZV8IT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317ZV8IZ	Active	Ind	8 Ld TSSOP	1	2.87	Buy
X9317ZV8IZ-2.7	Active	Ind	8 Ld TSSOP	1	3.17	Buy
X9317ZV8IZ-2.7T1	Active	Ind	8 Ld TSSOP T+R	1	3.17	Buy
X9317ZV8IZT1	Active	Ind	8 Ld TSSOP T+R	1	2.87	Buy
X9317ZV8T1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
X9317ZV8Z	Active	Comm	8 Ld TSSOP	1	2.30	Buy
X9317ZV8Z-2.7	Active	Comm	8 Ld TSSOP	1	2.54	Buy
X9317ZV8Z-2.7T1	Active	Comm	8 Ld TSSOP T+R	1	2.54	Buy
X9317ZV8ZT1	Active	Comm	8 Ld TSSOP T+R	1	2.30	Buy
XLABVIEW01	Active			N/A	91.77	Buy Sample
XLABVIEW01Z	Active		Eval Board	N/A	91.77	Buy

X9317UV8IZ-2.7T2	Coming Soon	Ind	8 Ld TSSOP T+R	1	
X9317UV8T2	Coming Soon	Comm	8 Ld TSSOP	1	
X9317WS8IZ-2.7T2	Coming Soon	Ind	8 Ld SOIC T+R	1	
X9317WV8ZT2	Coming Soon	Comm	8 Ld TSSOP T+R	1	
X9317TM8IZ-2.7T2	InActive	Ind	8 Ld MSOP T+R	2	
X9317TM8IZT2	InActive	Ind	8 Ld MSOP T+R	2	
X9317TM8Z-2.7T2	InActive	Comm	8 Ld MSOP T+R	2	
X9317TM8ZT2	InActive	Comm	8 Ld MSOP T+R	2	
X9317TS8IZ-2.7T2	InActive	Ind	8 Ld SOIC T+R		
X9317TS8Z-2.7T2	InActive	Comm	8 Ld SOIC T+R		
X9317TV8IZ-2.7T2	InActive	Ind	8 Ld TSSOP T+R		
X9317TV8IZT2	InActive	Ind	8 Ld TSSOP T+R		
X9317TV8Z-2.7T2	InActive	Comm	8 Ld TSSOP T+R		
X9317TV8ZT2	InActive	Comm	8 Ld TSSOP T+R		
X9317UM8IZ-2.7T2	InActive	Ind	8 Ld MSOP T+R	2	
X9317US	InActive	Comm	8 Ld SOIC	1	
X9317US8IZ-2.7T2	InActive	Ind	8 Ld SOIC T+R		
X9317WV8IZ-2.7T2	InActive	Ind	8 Ld TSSOP T+R		
X9317ZV8IZ-2.7T2	InActive	Ind	8 Ld TSSOP T+R	3.17	

The price listed is the manufacturer's suggested retail price for quantities between 100 and 999 units. However, prices in today's market are fluid and may change without notice.

MSL = Moisture Sensitivity Level - per IPC/JEDEC J-STD-020

SMD = Standard Microcircuit Drawing

Description

The Intersil X9317 is a digitally controlled potentiometer (XDCP). The device consists of a resistor array, wiper switches, a control section, and nonvolatile memory. The wiper position is controlled by a 3-wire interface.

The potentiometer is implemented by a resistor array composed of 99 resistive elements and a wiper switching network. Between each element and at either end are tap points accessible to the wiper terminal. The position of the wiper element is controlled by the CS, U/D, and INC inputs. The position of the wiper can be stored in nonvolatile memory and then be recalled upon a subsequent power-up operation.

The device can be used as a three-terminal potentiometer for voltage control or as a two-terminal variable resistor for current control in a wide variety of applications.

Key Features

- Solid-State Potentiometer
- 3-Wire Serial Up/Down Interface
- 100 Wiper Tap Points
  - Wiper position stored in nonvolatile memory and recalled on power-up
- 99 Resistive Elements
  - Temperature compensated
  - End to end resistance range ±20%
- Low Power CMOS
  - V_{CC} = 2.7V to 5.5V, and 5V ±10%
  - Standby current < 1µA
- High Reliability
  - Endurance, 100,000 data changes per bit
  - Register data retention, 100 years
- RTOTAL Values = 1kΩ, 10kΩ, 50kΩ, 100kΩ
- Packages

- 8 Ld SOIC, DIP, TSSOP, and MSOP
- Pb-Free Plus Anneal Available (RoHS Compliant)

Related Documentation

Application Note(s):

- A Compendium of Application Circuits for Intersil's Digitally-Controlled (XDCP) Potentiometers
- A Primer on Digitally-Controlled Potentiometers
- Application of Intersil Digitally Controlled Potentiometers (XDCP™) as Hybrid Analog/Digital Feedback System Control Elements
- DC/DC Module Trim with Digital Potentiometers
- Designing Power Supplies Using Intersil's XDCP Mixed Signal Products
- Power Supply and DC to DC Converter Control using Intersil Digitally Controlled Potentiontiometers (XDCPs)
- Putting Analog On The Bus
- Shaft Encoder Drives Multiple Intersil Digitally Controlled Potentiontiometers (XDCPs)
- Tone, Balance, and Volume Control using a Quad XDCP
- Working with the Intersil 3-Wire DCP Devices

Datasheet(s):

- Low Noise, Low Power, 100 Taps Digitally Controlled Potentiometer (XDCP™)

Technical Brief(s):

- Converting a Fixed PWM to an Adjustable PWM

Evaluation Board(s):

- Intersil_XDCP_Test_Utility_Manual_rev_3.2.3.pdf
- LabView_XDCP_Software.zip
- LabView_XDCP_Upgrade_3.2.3.zip
- Readme_XicorLabVIEW_V3.2.3.txt
- XDCP_Vref Evaluation Board Kit Documentation and Software
- accessHW.zip

Technical Homepage:

- Digitally Controlled Potentiometers (DCPs) and Capacitors (DCCs)
- Precision Analog Homepage

Parametric Data

Number of DCPs	Single
Number of Taps	100
Memory Type	Non-Volatile
Bus Interface Type	3-Wire (Up/Down)
Resistance Options (kΩ)	1, 10, 50, 100
V_{CC} Range (V)	2.7 to 5.5
DCP Differential Terminal Voltage (V)	0 to +5.5
Terminal Voltage Range V_L to V_H (V)	0 to V_{CC}
Resistance Taper	Linear
Wiper Current (mA)	±1
Wiper Resistance (Ω)	200
Standby Current I_{SB} (µA)	1

Applications

- LCD Bias Control
- DC Bias Adjustment
- Gain and Offset Trim
- Laser Diode Bias Control
- Voltage Regulator Output Control

Related Devices Parametric Table

X9318	Digitally Controlled Potentiometer (XDCP™)
X9319	Digitally Controlled Potentiometer (XDCP™)
X9C102	Digitally Controlled Potentiometer (XDCP™)
X9C103	Digitally Controlled Potentiometer (XDCP™)
X9C104	Digitally Controlled Potentiometer (XDCP™)
X9C303	Logarithmic Digitally Controlled Potentiometer (XDCP™), Terminal Voltage ±5V, 100 Taps, Log Taper
X9C503	Digitally Controlled Potentiometer (XDCP™)