



CATALYST

# CAT5111 & CAT5113

## 100-Tap Digitally Programmable Potentiometers (DPP™)

### BENEFITS

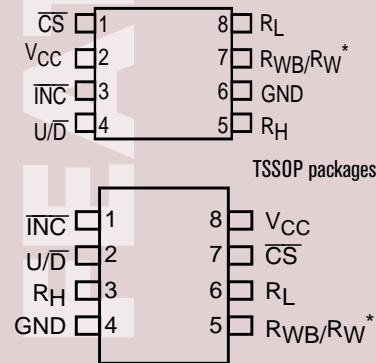
- Lower system cost
- No calibration tools needed
- No moving parts
- Space saving surface mount packages
- Electronically automate system adjustments
- Improve system reliability
- Will not wear out

### FEATURES

- 100 Position linear taper
- Nonvolatile wiper position storage
- Low power CMOS technology
- Single supply operation: 2.5V to 6.0V
- Increment up/down control
- Buffered output, CAT5111
- Resistor values: 10K and 100K ohms

### PACKAGE OPTIONS

- Available in 8-lead PDIP, SOIC, TSSOP and MSOP packages

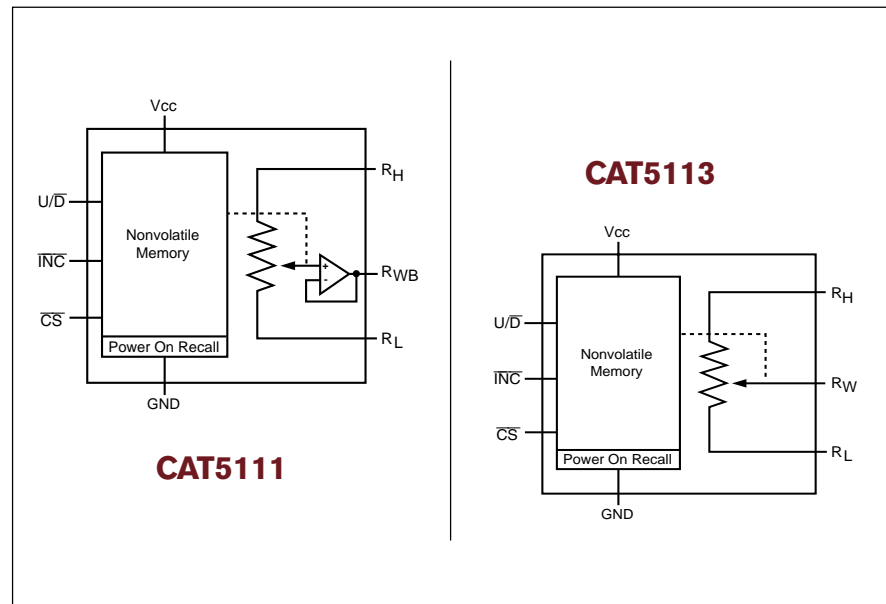


\*R<sub>w</sub> (5113)

DIP/SOIC/MSOP packages

[www.catalyst-semiconductor.com](http://www.catalyst-semiconductor.com)

### Electronic replacement for mechanical potentiometers and trimmers!



### DESCRIPTION

The CAT5111 and CAT5113 are 100-tap digitally programmable potentiometers (DPP™) whose wiper positions are set by a simple 3-wire digital up/down interface. Designed to be used as electronic replacements for mechanical pots and trimmers, these devices are ideal for systems requiring automated or self-calibration. Unlike mechanical pots, DPPs operate reliably in hazardous environments and eliminate mechanical "wear and tear."

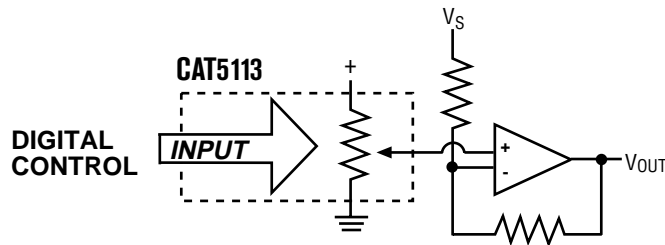
Resistor tap points are connected to the output through CMOS switches or in the case of the CAT5111, through a unity gain buffer amplifier. Selection of the output tap position is controlled by an up/down counter which does not wrap around. The value of the counter can be stored in nonvolatile memory at power down and automatically recalled when power is restored.

Available in 8-lead plastic DIP, SOIC, TSSOP and MSOP packages, they can be mounted anywhere in the system, unlike mechanical pots that require physical access or bulky shafts and knobs. DPPs bring variability and programmability to a wide range of applications including control, parameter adjustments and signal processing.

**Customer Service & Technical Support Hotline 800-258-5991**



## TYPICAL APPLICATION



## CAT5111 & CAT5113

FLASH • Serial EEPROM • Parallel EEPROM • NVRAM • Digitally Programmable Potentiometers • Microprocessor Supervisors

## APPLICATIONS

- Connect as a three-terminal POT or a two-terminal variable resistor
- Automated system calibration
- Remote control adjustment of equipment
- Mechanical POT replacement
- Offset, gain and zero adjustments in self-calibrating and adaptive control systems
- Tamper-proof calibration
- Hazardous environment system adjustments
- Vibration proof systems
- Contrast and brightness controls
- Motor control
- Volume controls
- Programmable analog functions
- Amplifier bias control
- Temperature control systems
- Sensor adjustments
- Optical communication systems
- Bias control

## DPP™ SELECTION GUIDE

Part	Type	Taps	Resistance Options (kΩ)	Buffered Wiper	Independent Reference Input	Digital Interface	Supply Type	Supply Range (V)	Package
CAT5111	Single	100	10, 100	Yes	NA	Increment/Decrement	Single	2.5-6.0	8-pin DIP, SOIC, MSOP, TSSOP
CAT5112	Single	32	10, 100	Yes	NA	Increment/Decrement	Single	2.5-6.0	8-pin DIP, SOIC, MSOP, TSSOP
CAT5113	Single	100	10, 100	No	NA	Increment/Decrement	Single	2.5-6.0	8-pin DIP, SOIC, MSOP, TSSOP
CAT5114	Single	32	10, 100	No	NA	Increment/Decrement	Single	2.5-6.0	8-pin DIP, SOIC, MSOP, TSSOP
CAT521	Single	256	28	Yes	NA	3 wire	Single	2.7-5.5	14-pin DIP, SOIC
CAT522	Dual	256	28	Yes	Yes	3 wire	Single	2.7-5.5	14-pin DIP, SOIC
CAT523	Dual	256	28	Yes	No	3 wire	Single	2.7-5.5	14-pin DIP, SOIC
CAT524	Quad	256	28	Yes	No	3 wire	Single	2.7-5.5	14-pin DIP, SOIC
CAT525	Quad	256	28	Yes	Yes	3 wire	Single	2.7-5.5	20-pin DIP, SOIC

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## REQUEST FORM

Samples & Literature

To obtain samples or data sheets, mail this form or fax to (408) 542-1200. Data sheets are available directly from our web site at [www.catalyst-semiconductor.com](http://www.catalyst-semiconductor.com).

**QUESTIONNAIRE**[WWW.CATALYST-SEMICONDUCTOR.COM](http://WWW.CATALYST-SEMICONDUCTOR.COM)

Please take a moment to answer the brief questions below. Questions marked with an asterisk (\*) are required fields for processing your sample requests. Thank you for your support and for making Catalyst Semiconductor your choice for chip technology!

- \* 1) Will this information be used for a project that will be in production... ☐ Now ☐ Next 2 - 6 months ☐ Next 7 - 12 months ☐ 13 - 18 months
- \* 2) What is the name of your project? \_\_\_\_\_
- 3) What is your role on this project? ☐ Designer ☐ Component Engineer ☐ Purchasing ☐ Project Manager ☐ Other
- 4) What do you expect your annual usage to be? ☐ 100k-1 Million Units ☐ 10k-100k Units ☐ 1k-10k Units ☐ Fewer than 1k Units
- \* 5) What is the primary end-use of this product? ☐ Motor control ☐ Computer systems & peripherals ☐ Data communications ☐ Entertainment
- ☐ Wireless communications ☐ Home appliances ☐ Industrial control ☐ Medical ☐ Power ☐ Telecomm ☐ Test ☐ PDAs
- ☐ Handheld instruments ☐ Other \_\_\_\_\_

PRODUCT NUMBER	DESCRIPTION	PACKAGE	TEMPERATURE RANGE	RESISTANCE	DATA SHEET	SAMPLE QTY
CAT5111	100-Tap DPP with Buffered Wiper	<input type="checkbox"/> 8-lead DIP <input type="checkbox"/> 8-lead SOIC <input type="checkbox"/> 8-lead TSSOP <input type="checkbox"/> 8-lead MSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K $\Omega$ <input type="checkbox"/> 100K $\Omega$	<input type="checkbox"/>	
CAT5113	100-Tap DPP	<input type="checkbox"/> 8-lead DIP <input type="checkbox"/> 8-lead SOIC <input type="checkbox"/> 8-lead TSSOP <input type="checkbox"/> 8-lead MSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K $\Omega$ <input type="checkbox"/> 100K $\Omega$	<input type="checkbox"/>	

**COMPANY INFORMATION**

first name	last name	title
company	web site	email address
street address 1	department	telephone
street address 2		fax
city	state/mail code	zip/country



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