



CATALYST

# CAT5112 & CAT5114

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

### BENEFITS

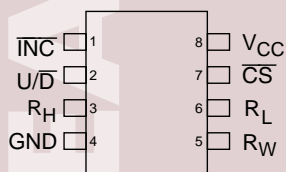
- Lower system cost
- No calibration tools needed
- No moving parts
- Space saving surface mount packages
- Electronically automate system adjustments
- Improve system reliability
- Will not wear out

### FEATURES

- 32 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, CAT5112
- Resistor values: 10K and 100K ohms

### PACKAGE OPTIONS

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



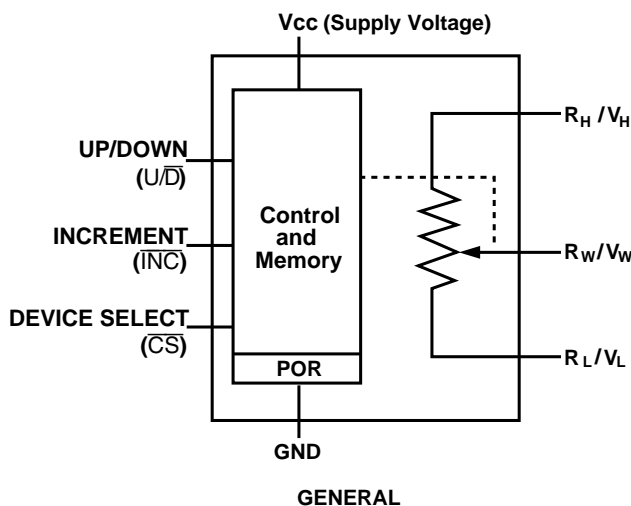
DIP/SOIC packages

[www.catsemi.com](http://www.catsemi.com)

Rev. 04/01

## Electronic replacement for mechanical potentiometers and trimmers!

### CAT5114



### DESCRIPTION

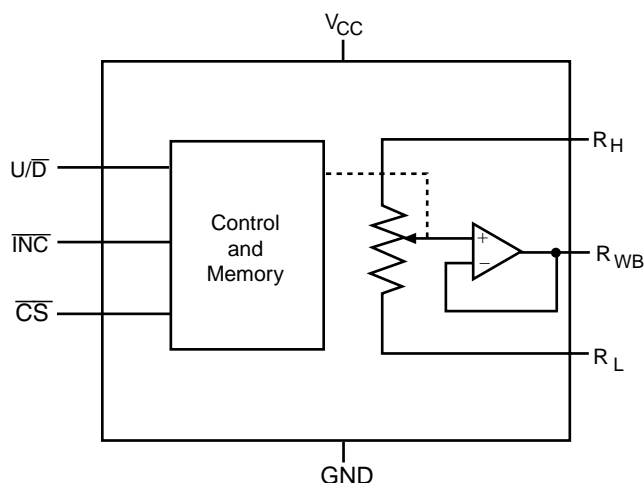
The CAT5112 and CAT5114 are 32-tap digitally programmable potentiometers (DPP™) whose wiper positions are set by a simple 3-wire digital up/down interface. Designed to be used as electronic replacements for mechanical pots and trimmers, these devices are ideal for systems requiring automated or self-calibration. Unlike mechanical pots, DPPs operate reliably in hazardous environments and eliminate mechanical “wear and tear.” The pot consists of 31 resistor elements connected in series.

Resistor tap points are connected to the output through CMOS switches or in the case of the CAT5112, 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 non-volatile NVRAM memory at power down and automatically recalled when power is restored.

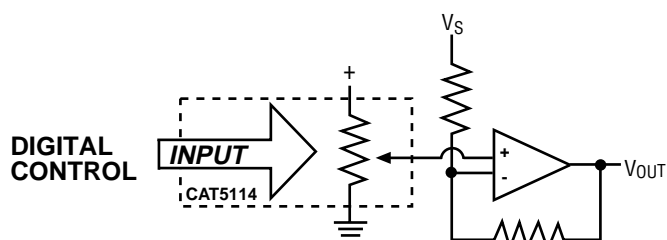
Available in 8-lead plastic DIP, SOIC, TSSOP and MSOP packages, they can be mounted anywhere in the system, unlike mechanical pots that require physical access or bulky shafts and knobs. DPPs bring variability and programmability to a wide range of applications including control, parameter adjustments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

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

## CAT5112 WITH BUFFERED OUTPUT



## TYPICAL APPLICATION



### SAMPLE & LITERATURE REQUESTS

To obtain samples or data sheets for the products described on this feature sheet, complete the enclosed Request Form and fax your selections to us. You may also use the Internet to navigate to the Catalyst Web site [www.catsemi.com](http://www.catsemi.com) and complete the on-line sample and literature Request Form. All data sheets are available directly from our Web site as downloadable PDF documents.

Additional information about the full line of Catalyst products can also be accessed via our Web site at [www.catsemi.com](http://www.catsemi.com). For additional questions or requests, email [customer.service@catsemi.com](mailto:customer.service@catsemi.com).

To request samples or literature do, one of the following:

- Complete the enclosed Request Form and fax to 408-542-1200 (USA).
- Complete the enclosed Request Form—fold and mail. Don't forget to add postage!
- Access the sample and literature Request Form on the Internet by navigating to [www.catsemi.com](http://www.catsemi.com) and select the on-line Request Form. Complete the required fields and submit.
- Download the PDF version of the Request Form from [www.catsemi.com](http://www.catsemi.com) and fax the completed form to 408-542-1200.

You will need the free Adobe Acrobat Reader software to view and print these documents. There is a link to the Acrobat Reader software on our Web site. You can also point your Web browser to [www.adobe.com](http://www.adobe.com) to download the Acrobat Reader.



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## CAT5112 & CAT5114

### APPLICATIONS

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

FLASH • Serial EEPROM • Parallel EEPROM • NVRAM • Digital Potentiometers • Microprocessor Supervisors • Voltage Regulators

[www.catsemi.com](http://www.catsemi.com)

**CATALYST**

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# CAT5112 & CAT5114

## REQUEST FORM

### Samples & Literature

To obtain samples or data sheets for the products described on the feature sheet, complete this form including the questionnaire and fax to [408] 542-1200, or mail your selections to us. You may also use the Internet to navigate to the Catalyst Web site URL [www.catsemi.com](http://www.catsemi.com) and complete the on-line sample and literature Request Form. All data sheets are available directly from our Web site as downloadable PDF documents.

**QUESTIONNAIRE**[WWW.CATSEMI.COM](http://WWW.CATSEMI.COM)

To help us better support your technical literature and sample requests and needs, 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 ☐ Purchaser ☐ Project Manager ☐ Other
- 4) What do you expect your annual usage to be? ☐ >1 Million Units ☐ 100k-1 Million Units ☐ 10k-100k Units ☐ Fewer than 10k Units
- \* 5) What is the primary end-use of this product? ☐ Auto subassemblies & systems ☐ Computers, systems & peripherals ☐ Data communications ☐ Entertainment  
☐ Wireless communications ☐ Home appliances ☐ Industrial control ☐ Medical ☐ Power ☐ Telecomm ☐ Test ☐ PDAs ☐ Handheld instruments  
☐ Other \_\_\_\_\_
- 6) How do you plan to purchase? ☐ Through distribution ☐ Direct

PRODUCT NUMBER	DESCRIPTION	PACKAGE	TEMP RANGE	RESISTANCE	DATA SHEET	SAMPLE QTY
CAT5112P	32-Tap Digitally Programmable Potentiometer (DPP™) with Buffered Wiper	8-lead PDIP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5112S	32-Tap DPP™ with Buffered Wiper	8-lead SOIC	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5112R	32-Tap DPP with Buffered Wiper	8-lead MSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5112U	32-Tap DPP with Buffered Wiper	8-lead TSSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5114P	32-Tap DPP	8-lead PDIP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5114S	32-Tap DPP	8-lead SOIC	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5114R	32-Tap DPP	8-lead MSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<input type="checkbox"/> _____
CAT5114U	32-Tap DPP	8-lead TSSOP	<input type="checkbox"/> Commercial <input type="checkbox"/> Industrial	<input type="checkbox"/> 10K <input type="checkbox"/> 100K	<input type="checkbox"/>	<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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Postage  
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**Attn: Sample & Literature Fulfillment  
Catalyst Semiconductor, Inc.  
1250 Borregas Avenue  
Sunnyvale, CA 94089-1309  
USA**

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