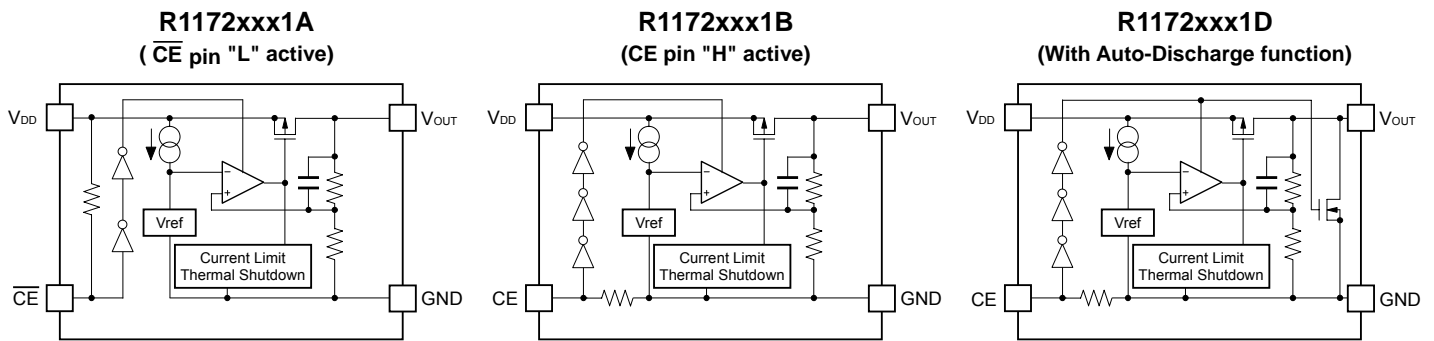


The R1172x Series are CMOS-based LDO regulators featuring 1A output. The CMOS process provides both high output current and low supply current. The dropout voltage is significantly lower than bipolar regulators. The R1172x handles low voltage with an input voltage from 1.4V and output voltage from 0.8V. Accordingly, the device supports highly integrated, low voltage-driven LSI as a rear stage of the DC/DC converter. The CE pin can switch the regulator into standby mode. In addition to a fold-back protection circuit built into conventional LDO regulators, R1172x has a thermal shutdown circuit and inrush current limit circuit. Ceramic capacitors can be used

### FEATURES

- Supply Current ( $I_{SS}$ ) .....Typ. 60 $\mu$ A ( $V_{IN}=\text{SET } V_{OUT}+1.0\text{V}$ )
- Standby Current ( $I_{standby}$ ) .....Typ. 0.1 $\mu$ A ( $V_{IN}=6.0\text{V}$ , In standby)
- Dropout Voltage ( $V_{DIF}$ ) .....Typ. 0.05V ( $I_{OUT}=300\text{mA}$ ,  $V_{OUT}=2.8\text{V}$ )  
Typ. 0.18V ( $I_{OUT}=1\text{A}$ ,  $V_{OUT}=2.8\text{V}$ )
- Ripple Rejection (RR).....Typ. 70dB ( $f=1\text{kHz}$ ,  $V_{OUT} \leq 4.0\text{V}$ ),  
Typ. 60dB ( $f=1\text{kHz}$ ,  $V_{OUT} > 4.0\text{V}$ )
- Input Voltage Range ( $V_{IN}$ ).....1.4V to 6.0V
- Output Voltage Range ( $V_{OUT}$ ).....0.8V to 5.0V (internally fixed)
- Output Voltage Accuracy ..... $\pm 2\%$
- Temp. coeff. of Output Voltage.....Typ.  $\pm 100\text{ppm}/^\circ\text{C}$
- Line Regulation.....Typ. 0.05%/V
- Fold-back Protection Circuit.....Current limit Typ. 250mA
- Inrush Current Limit Circuit.....Typ. 500mA
- Thermal Shutdown Circuit .....Stops at 150 $^\circ\text{C}$
- Packages .....SOT-23-5, SOT-89-5, HSON-6, HSOP-6J
- Ceramic capacitors can be used. ....4.7 $\mu$ F or more ( $V_{OUT} \geq 1.0\text{V}$ )

### BLOCK DIAGRAMS



### SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	SOT-23-5	3,000 pcs	R1172Nxx1*-TR-FE
H/F	SOT-89-5	1,000 pcs	R1172Hxx1*-T1-FE
H/F	HSON-6	3,000 pcs	R1172Dxx1*-TR-FE
H/F	HSOP-6J	1,000 pcs	R1172Sxx1*-E2-FE

- xx : Specify the output voltage within the range of 0.8V (08) to 5.0V (50) in 0.1V steps.
- \* : Select the polarity of the CE pin from (A) "L" active, (B) "H" active or (D) "H" active with auto-discharge function.

### PACKAGES (Top View)

SOT-23-5	SOT-89-5	HSON-6	HSOP-6J
1 V <sub>OUT</sub>	1 $\overline{\text{CE}}$ or CE	1 V <sub>OUT</sub> *1	1 V <sub>OUT</sub>
2 GND	2 GND	2 V <sub>OUT</sub> *1	2 GND
3 V <sub>DD</sub>	3 NC	3 $\overline{\text{CE}}$ or CE	3 $\overline{\text{CE}}$ or CE
4 NC	4 V <sub>DD</sub>	4 GND	4 NC
5 $\overline{\text{CE}}$ or CE	5 V <sub>OUT</sub>	5 V <sub>DD</sub> *1	5 GND
		6 V <sub>DD</sub> *1	6 V <sub>DD</sub>

\*) The tab and tab suspension leads on back side are substrate level (GND).

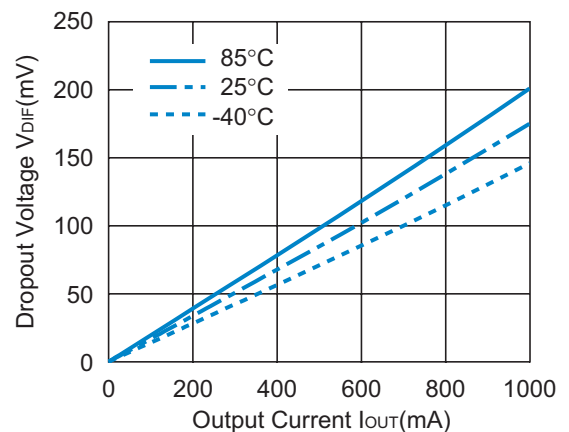
\*1) The V<sub>OUT</sub> pin and V<sub>DD</sub> pin must be wired each other when it is mounted on board.

### APPLICATIONS

- Power source for hand-held communication equipment, cameras, and VCRs
- Power source for home appliances and digital home appliances
- Power source for automotive application
- Power source for laptop personal computers
- Power source for battery-powered equipment

### TYPICAL CHARACTERISTIC

R1172x301x Dropout Voltage vs. Output Current





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Ricoh completed the organization of the Lead-free production for all of our products. After Apr. 1, 2006, we will ship out the lead free products only. Thus, all products that will be shipped from now on comply with RoHS Directive.