RP103x Series

150mA LDO

The RP103x Series are CMOS-based LDO regulators featuring 150mA output current. The RP103x Series features supply current as low as 36μA, which is far lower than current products, 75dB ripple rejection, and low noise. The output voltage accuracy has been improved to ± 1% and the temperature drift coefficient of the output voltage is as low as ± 30ppm/°C.

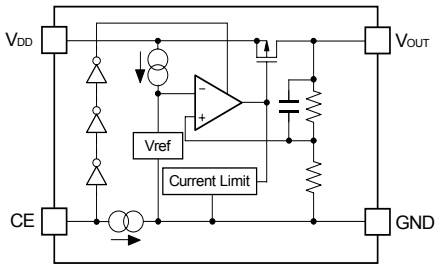
FEATURES

- Supply Current (I_{SS}) ····· Typ. 36μA (V_{IN}=SET V_{OUT}+1.0V)
- Standby Current ($I_{standby}$) ····· Typ. 0.1μA (Same as above,CE="L")
- Dropout Voltage (V_{DIF}) ····· Typ. 0.21V (I_{OUT}=150mA, V_{OUT}=2.8V)
- Ripple Rejection (RR) ····· Typ. 75dB (f=1kHz)
- Input Voltage Range (V_{IN}) ····· 1.7V to 5.25V
- Output Voltage Range (V_{OUT}) ····· 1.2V to 3.3V (internally fixed)
- Output Voltage Accuracy ····· ± 1%
- Temp. coeff. of Output Voltage ····· Typ. ± 30ppm/°C
- Line Regulation ····· Typ. 0.02%/V
- Fold-back Protection Circuit ····· Current limit Typ. 40mA
- Auto-Discharge function ····· D Version
- Packages ····· DFN(PLP)1010-4, SC-82AB, SOT-23-5
- Ceramic capacitors can be used ···· 0.47μF or more

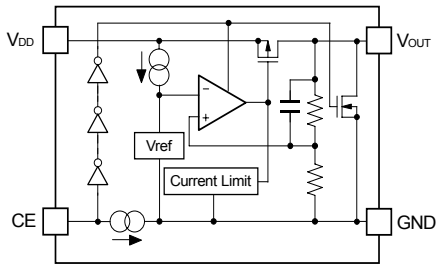
(The above shows specification at Topt=25°C. Design assurance value at -40°C ≤ Topt ≤ 85°C is also available. For details, please refer to the datasheet.)

BLOCK DIAGRAMS

RP103xxx1B
(Without Auto-Discharge function)



RP103xxx1D
(With Auto-Discharge function)



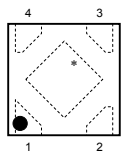
SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	DFN(PLP)1010-4	10,000 pcs	RP103Kxx1*-TR
H/F	SC-82AB	3,000 pcs	RP103Qxx1*-TR-FE
H/F	SOT-23-5	3,000 pcs	RP103Nxx1*-TR-FE

xx : Specify the output voltage within the range of 1.2V (12) to 3.3V (33) in 0.1V steps.
* : Select from (B) without auto-discharge function or (D) with auto-discharge function.

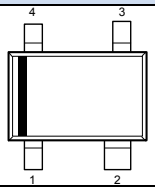
PACKAGES (Top View)

DFN(PLP)1010-4



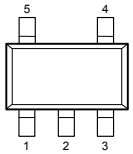
1	VOUT
2	GND
3	CE
4	VDD

SC-82AB



1	CE
2	GND
3	VOUT
4	VDD

SOT-23-5

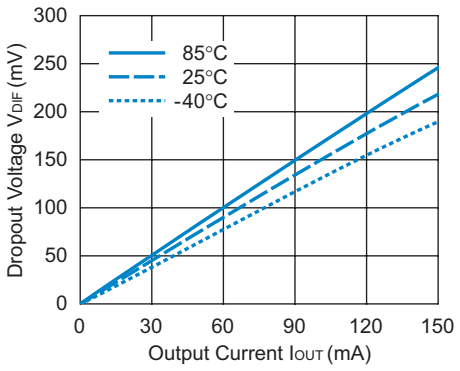


1	VDD
2	GND
3	CE
4	NC
5	VOUT

*) The tab is substrate level (GND).

TYPICAL CHARACTERISTIC

RP103x251x Dropout Voltage vs. Output Current



APPLICATIONS

- Power source for hand-held communication equipment, cameras, and VCRs
- Power source for battery-powered equipment
- Power source for home appliances

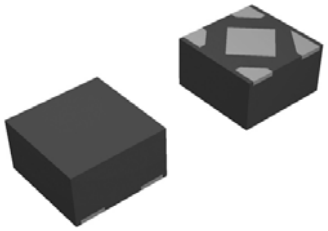
●150mA LDO

150mA LDO REGULATOR COMPARISON

RP103x has a succeeding product. We recommend the RP109x Series.

	RP103x Series	RP109x Series
Supply Current	Typ. 36μA	Typ. 50μA
Input Voltage Range	1.7V to 5.25V	1.4V to 5.25V
Output Voltage Range	1.2V to 3.3V	0.8V to 3.6V
Dropout Voltage (V_{OUT}=2.8V)	Typ. 0.21V	Typ. 0.25V
Ripple Rejection (f=1kHz)	75dB	75dB
Output Voltage Accuracy	±1%	±1%
Temp. coeff. of Output Voltage	±30ppm/°C	±30ppm/°C
Packages	DFN(PLP)1010-4 (1.0mm×1.0mm) SC-82AB (2.0mm×2.1mm) SOT-23-5 (2.9mm×2.8mm)	DFN(PLP)0808-4 (0.8mm×0.8mm) DFN1010-4 (1.0mm×1.0mm) SC-82AB (2.0mm×2.1mm) SC-88A (2.0mm×2.1mm) SOT-23-5 (2.9mm×2.8mm)

DFN(PLP)1010-4



The DFN(PLP)package is a leadless package using an electroforming sheet in place of lead frame.
This extremely compact package features increased power dissipation and conversion to thinner type.
The name is representing by a combination of the body size and the number of pins, i.e., DFN(PLP)1010-4 stands for the body size of 1.0mm×1.0mm and 4 pins.
An environment-friendly, lead-free package with gold plated contacts complies with the RoHS Directive.

http://www.ricoh.com/LSI/

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