RP102x Series

Low Noise 300mA LDO

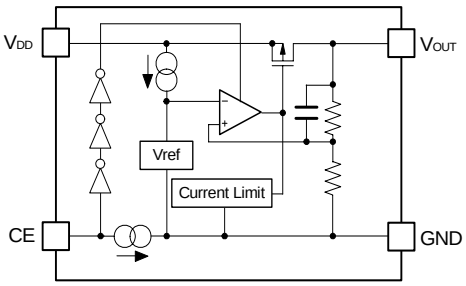
The RP102x Series are CMOS-based LDO regulators featuring 300mA output. The RP102x features supply current as low as 50µA, which is far lower than existing lines. Due to a built-in 0.4Ω (at V_{SET}=2.8V) on-resistor, RP102x can provide a low dropout voltage. RP102x also features excellent line transient response, ripple rejection at 80dB, and low noise. The output voltage accuracy is as high as ± 0.8% and the temperature drift coefficient of output voltage is low at ± 20ppm/°C.

FEATURES

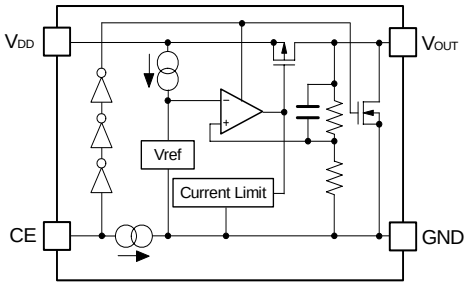
- Supply Current (I_{SS}) ····· Typ. 50µA (V_{IN}=V_{SET}+1.0V)
- Standby Current ($I_{standby}$) ····· Typ. 0.1µA (Same as above, CE="L")
- Dropout Voltage (V_{DIF}) ····· Typ. 0.12V (I_{OUT}=300mA, V_{SET}=2.8V)
- Ripple Rejection (RR) ····· Typ. 80dB (f=1kHz)
- Input Voltage Range (V_{IN}) ····· 1.7V to 5.25V (Absolute maximum rating : 6.0V)
- Output Voltage Range (V_{OUT}) ····· 1.2V to 3.3V (Internally fixed)
- Output Voltage Accuracy ····· ± 0.8%
- Temp. coeff. of Output Voltage ····· Typ. ± 20ppm/°C
- Line Regulation ····· Typ. 0.02%/V
- Fold-back Protection Circuit ····· Current limit Typ. 50mA
- Auto-discharge Function ····· D Version
- Packages ····· WLCSP-4-P2, DFN(PLP)1820-6, SOT-23-5
- Ceramic capacitors can be used. ·· 1µF or more

BLOCK DIAGRAMS

RP102xxx1B
(Without Auto-discharge function)



RP102xxx1D
(With Auto-discharge function)



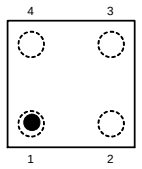
SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	WLCSP-4-P2	5,000 pcs	RP102Zxx1∗-TR-F
H/F	DFN(PLP)1820-6	5,000 pcs	RP102Kxx1∗-TR
H/F	SOT-23-5	3,000 pcs	RP102Nxx1∗-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.

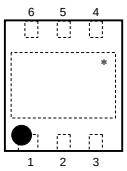
PACKAGES (Top View)

WLCSP-4-P2



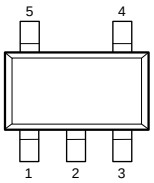
1	VDD
2	CE
3	GND
4	VOUT

DFN(PLP)1820-6



1	VOUT**
2	VOUT**
3	GND
4	CE
5	VDD**
6	VDD**

SOT-23-5

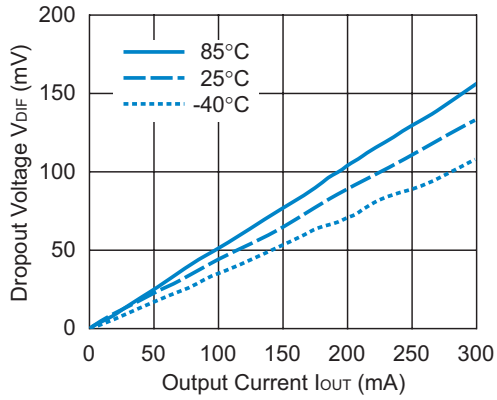


1	VDD
2	GND
3	CE
4	NC
5	VOUT

∗) The tab is substrate level (GND).
∗∗) The V_{OUT} pin V_{DD} pin must be wired each other when it is mounted on board.

TYPICAL CHARACTERISTIC

RP102x251x 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

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