

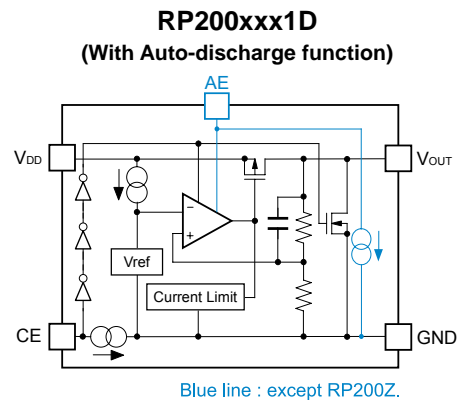
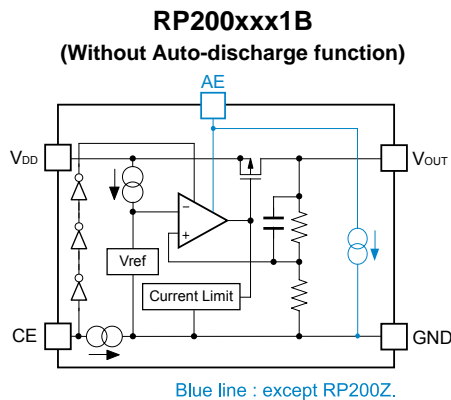
## Manual/Automatic Mode Shift Low Voltage 300mA LDO

The RP200x Series are CMOS-based manual/automatic mode shift LDO regulators featuring 300mA output. In auto switching mode, the operation can switch automatically to fast response mode or low power mode of the ECO function according to output current. (Automatic switching to fast response mode under  $I_{OUT} > 8\text{mA}$  conditions or to low power mode under  $I_{OUT} < 1\text{mA}$  conditions.) In low power mode, supply current is as low as  $1.5\mu\text{A}$ . In fast response mode, ripple rejection is 70dB and noise is low. By inputting control signal into the AE pin, the mode of the regulator can be fixed with fast response mode. In addition to SOT-23-5 package, a 0.69mm square WLCSP-4-P5 package and a 1.2mm square DFN(PLP)1212-6 are also available.

### FEATURES

- Supply Current ( $I_{SS2}$ ) ..... Typ.  $55\mu\text{A}$  (Fast mode,  $V_{IN} = V_{SET} + 1.0\text{V}$ )
  - Supply Current ( $I_{SS1}$ ) ..... Typ.  $1.5\mu\text{A}$  (Low power mode, same as above)
  - Standby Current ( $I_{standby}$ ) ..... Typ.  $0.1\mu\text{A}$  (Same as above,  $CE = "L"$ )
  - Dropout Voltage ( $V_{DIF}$ ) ..... Typ.  $0.23\text{V}$  ( $I_{OUT} = 300\text{mA}$ ,  $V_{SET} = 2.8\text{V}$ )
  - Ripple Rejection (RR) ..... Typ. 70dB ( $f = 1\text{kHz}$ , Fast mode)
  - Input Voltage Range ( $V_{IN}$ ) ..... 1.4V to 5.25V (Absolute maximum rating : 6.0V)
  - Output Voltage Range ( $V_{OUT}$ ) ..... 0.8V to 4.0V (Internally fixed)
  - Output Voltage Accuracy .....  $\pm 1\%$
  - Temp. coeff. of Output Voltage ..... Typ.  $\pm 50\text{ppm}/^\circ\text{C}$
  - Line Regulation ..... Typ. 0.02%/V (Fast mode)
  - Fold-back Protection Circuit ..... Current limit Typ. 50mA
  - Auto-discharge Function ..... D Version
  - Packages ..... WLCSP-4-P5, DFN(PLP)1212-6, SOT-23-5
  - Ceramic capacitor can be used. ....  $1\mu\text{F}$  or more
- (The above shows specification at  $T_{opt} = 25^\circ\text{C}$ . Design assurance value at  $-40^\circ\text{C} \leq T_{opt} \leq 85^\circ\text{C}$  is also available. For details, please refer to the datasheet.)

### BLOCK DIAGRAMS



### SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	WLCSP-4-P5	5,000 pcs	RP200Zxx1*-TR-F
H/F	DFN(PLP)1212-6	5,000 pcs	RP200Kxx1*-TR
H/F	SOT-23-5	3,000 pcs	RP200Nxx1*-TR-FE

- xx : Specify the output voltage within the range of 0.8V (08) to 4.0V (40) in 0.1V steps
- \* : Select from (B) without auto-discharge function or (D) with auto-discharge function

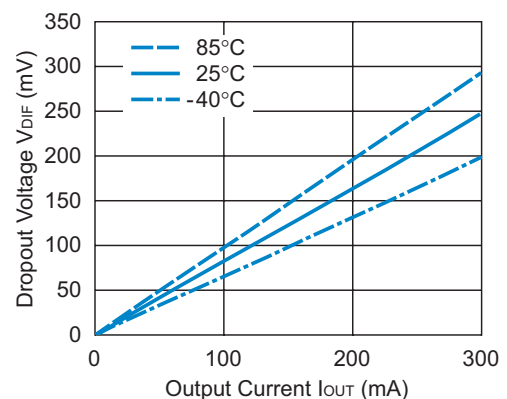
### PACKAGES (Top View)

WLCSP-4-P5	DFN(PLP)1212-6	SOT-23-5
1 V <sub>DD</sub>	1 AE	1 V <sub>DD</sub>
2 CE	2 GND	2 GND
3 GND	3 CE	3 CE
4 V <sub>OUT</sub>	4 V <sub>DD</sub>	4 AE
	5 NC	5 V <sub>OUT</sub>
	6 V <sub>OUT</sub>	

\*) WLCSP-4-P5 does not exist AE pin.

### TYPICAL CHARACTERISTIC

RP200x261x Dropout Voltage vs. Output Current



### APPLICATIONS

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



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