

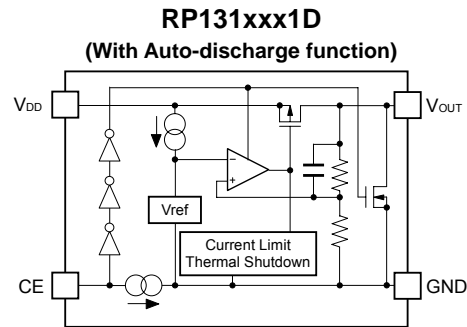
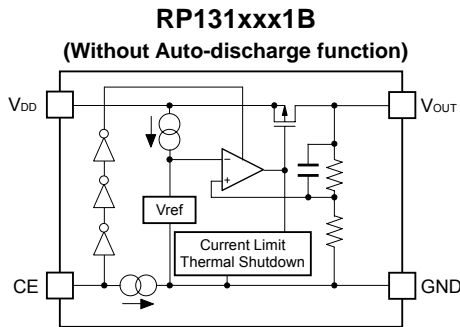
The RP131x Series are CMOS-based LDO regulators featuring 1A output with low on-resistance. The CMOS process provides both large output current and low supply current. The dropout voltage is significantly lower than bipolar regulators. The RP131x handles low voltage with an input voltage from 1.6V and an 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, RP131x has a thermal shutdown circuit and inrush current limit circuit. Ceramic capacitors can be used.

### FEATURES

- Supply Current ( $I_{SS}$ ) ..... Typ. 65 $\mu$ A ( $V_{IN}=6.5V$ )
- Standby Current ( $I_{standby}$ ) ..... Typ. 0.15 $\mu$ A (Same as above, CE="L")
- Dropout Voltage ( $V_{DIF}$ ) ..... Typ. 0.5V ( $I_{OUT}=1A$ ,  $V_{SET}=2.8V$ )
- Ripple Rejection (RR) ..... Typ. 70dB ( $f=1kHz$ ,  $V_{SET} \leq 3.3V$ )  
Typ. 60dB ( $f=1kHz$ ,  $V_{SET} > 3.3V$ )
- Input Voltage Range ( $V_{IN}$ ) ..... 1.6V to 6.5V (Absolute maximum rating : 7.0V)
- Output Voltage Range ( $V_{OUT}$ ) ..... 0.8V to 5.5V (Internally fixed)
- Output Voltage Accuracy .....  $\pm 1\%$
- Temp. coeff. of Output Voltage ..... Typ.  $\pm 100ppm/^{\circ}C$
- 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 165 $^{\circ}C$ .
- Auto-discharge Function ..... D Version
- Packages ..... DFN1616-6B  
DFN (PLP)1820-6,  
SOT-89-5, HSOP-6J  
TO-252-5-P2
- Ceramic capacitors can be used. ... 2.2 $\mu$ F or more ( $V_{SET} \leq 3.6V$ )  
4.7 $\mu$ F or more ( $V_{SET} > 3.6V$ )

(The above shows specification at  $T_{opt}=25^{\circ}C$ . Design assurance value at  $-40^{\circ}C \leq T_{opt} \leq 85^{\circ}C$  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	DFN1616-6B	5,000 pcs	RP131Lxx1*-TR
H/F	DFN(PLP)1820-6	5,000 pcs	RP131Kxx1*-TR
H/F	SOT-89-5	1,000 pcs	RP131Hxx1*-T1-FE
H/F	HSOP-6J	1,000 pcs	RP131Sxx1*-E2-FE
H/F	TO-252-5-P2	3,000 pcs	RP131Jxx1*-T1-FE

xx : Specify the output voltage within the range of 0.8V (08) to 5.5V (55) in 0.1V steps.

\* : Select from (B) without auto-discharge function or (D) with auto-discharge function.

### PACKAGES (Top View)

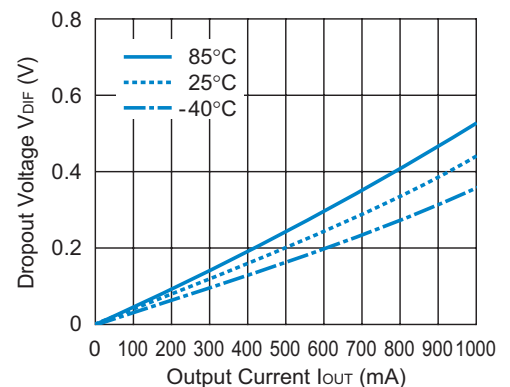
DFN1616-6B	DFN(PLP)1820-6	SOT-89-5	HSOP-6J	TO-252-5-P2
1 V <sub>OUT</sub> **	1 V <sub>OUT</sub> **	1 NC	1 V <sub>OUT</sub>	1 V <sub>OUT</sub>
2 V <sub>OUT</sub> **	2 V <sub>OUT</sub> **	2 GND	2 GND**	2 GND**
3 GND	3 GND	3 CE	3 NC	3 GND**
4 CE	4 CE	4 V <sub>DD</sub>	4 CE	4 CE
5 V <sub>DD</sub> **	5 V <sub>DD</sub> **	5 V <sub>OUT</sub>	5 GND**	5 V <sub>DD</sub>
6 V <sub>DD</sub> **	6 V <sub>DD</sub> **		6 V <sub>DD</sub>	

\*) The tab is substrate level (GND).

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

### TYPICAL CHARACTERISTIC

RP131x331x 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 laptop personal computers and home appliances



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