R1163x Series

Manual Mode Shift 150mA LDO with Reverse Current Protection

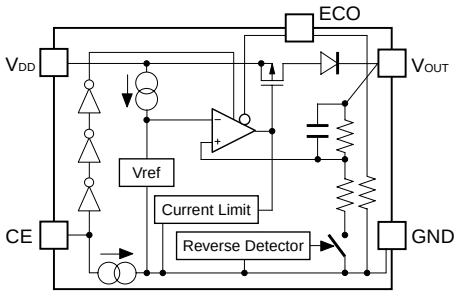
The R1163x Series are CMOS-based manual mode switching LDO regulators with ECO pin featuring 150mA output. By inputting control signals to the ECO pin, the mode of the regulator can be switched to low power mode or fast response mode, thus making both active and sleep modes available for the system. The built-in reverse current protection circuit prevents the current flow from V_{OUT} to V_{DD} when V_{OUT} is higher than V_{DD}. This feature makes the product ideally suited for backup circuit. Standby mode and auto-discharge function are also available (see Selection Guide). Ceramic capacitors can be used.

FEATURES

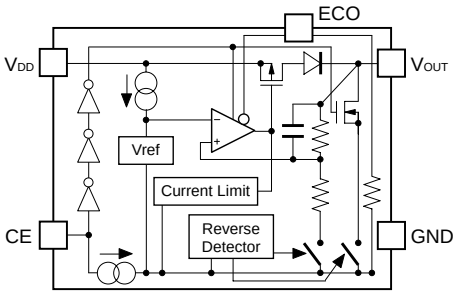
- Supply Current (I_{SS1}) ····· Typ. 70µA (Fast mode, V_{IN}=SET V_{OUT}+1.0V)
- Supply Current (I_{SS2}) ····· Typ. 6µA (Low power mode, same as above)
- Standby Current ($I_{standby}$) ····· Typ. 0.6µA (Same as above, CE="L")
- Dropout Voltage (V_{DIF}) ····· Typ. 0.25V (Fast mode, I_{OUT}=150mA, V_{OUT}=2.8V)
  Typ. 0.25V (Low power mode, I_{OUT}=150mA, V_{OUT}=2.8V)
- Ripple Rejection (RR) ····· Typ. 70dB (f=1kHz, Fast mode)
- Input Voltage Range (V_{IN}) ····· 2.0V to 6.0V
- Output Voltage Range (V_{OUT}) ····· 1.5V to 5.0V (internally fixed)
- Output Voltage Accuracy ····· ± 1.5% (Fast mode)
  ± 2.5% (Low power mode)
- Temp. coeff. of Output Voltage ····· Typ. ± 100ppm/°C
- Line Regulation ····· Typ. 0.02%/V (Fast mode)
- Fold-back Protection Circuit ····· Current limit Typ. 40mA
- Auto-Discharge function ····· D Version
- Reverse Current Protection Circuit
- Packages ····· DFN(PLP)1616-6, SON-6, SOT-23-5
- Ceramic capacitors can be used. ··· C_{IN}=1µF or more, C_{OUT}=0.47µF or more

BLOCK DIAGRAMS

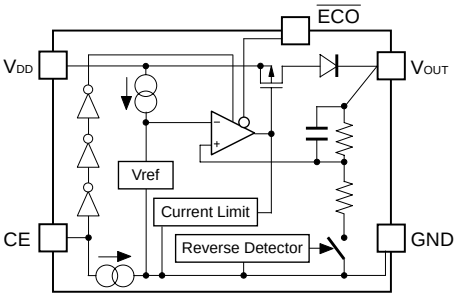
R1163xxx1B
(Without Auto-Discharge function)



R1163xxx1D
(With Auto-Discharge function)



R1163xxx1E
(ECO pin "H" active)



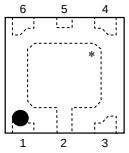
SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	DFN(PLP)1616-6	5,000 pcs	R1163Kxx1*-TR
H/F	SON-6	3,000 pcs	R1163Dxx1*-TR-FE
H/F	SOT-23-5	3,000 pcs	R1163Nxx1*-TR-FE

xx : Specify the output voltage within the range of 1.5V (15) to 5.0V (50) in 0.1V steps.
* : Select from (B) without auto-discharge function, (D) with auto-discharge function or (E) ECO pin ="H" active.

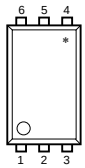
PACKAGES (Top View)

DFN(PLP)1616-6



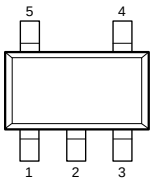
1	V_{OUT}
2	GND
3	ECO or $\overline{ECO}$
4	CE
5	NC
6	V_{DD}

SON-6



1	V_{DD}
2	NC
3	V_{OUT}
4	ECO or $\overline{ECO}$
5	GND
6	CE

SOT-23-5

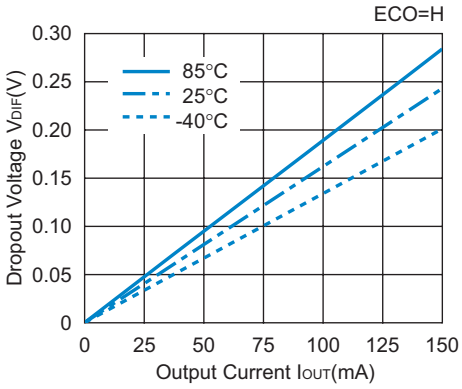


1	V_{DD}
2	GND
3	CE
4	ECO or $\overline{ECO}$
5	V_{OUT}

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

TYPICAL CHARACTERISTIC

R1163x281x Dropout Voltage vs. Output Current
(Fast Response Mode)



APPLICATIONS

- Power source for hand-held communication equipment, cameras, and VCRs
- Power source for battery-powered equipment
- Very stable voltage reference

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