# R1283K Series

## PWM Step-up/Inverting DC/DC Converter for CCD/LCD

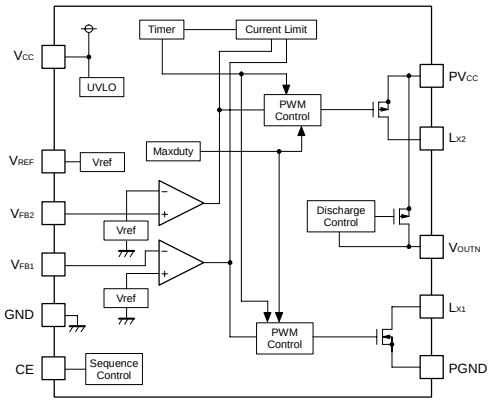
**The R1283K Series are dual output CMOS-based PWM step-up/inverting DC/DC converters. R1283K includes a soft start circuit, an under-voltage lockout circuit (UVLO), and a latch protection circuit. By simply using inductors, resistors, capacitors, and diodes as external components, a high-efficiency step-up/inverting DC/DC converter can be easily configured. While R1280D need using an external transistor, R1283K has internal 400mΩ ON resistance transistors for both step-up and inverting. Start-up sequence of two DC/DC converters can be selected. Since the shutdown sequence can also be set by the auto-discharge function of the inverting DC/DC converter, the products are ideally suitable for applications that require setting of power supply start-up/shutdown sequence for CCD, LCD, and OLED.**

## FEATURES

- Supply Current ($I_{DD1}$) ····· Typ. 4mA ($V_{IN}$=5.5V, $f_{osc}$=700kHz, In switching)
- Supply Current ($I_{DD2}$) ····· Typ. 300μA ($V_{IN}$=5.5V, $f_{osc}$=700kHz, In non-switching)
- Standby Current ($I_{standby}$) ····· Max. 3μA ($V_{IN}$=5.5V, CE="L")
- Input Voltage Range ($V_{IN}$) ····· 2.5V to 5.5V
- Step-up Feedback Voltage ($V_{FB1}$) ····· 1.0V (The output voltage adjustable up to 20V with an external resistor.)
- Inverting Feedback Voltage ($V_{FB2}$) ····· 0V (The output voltage adjustable up to $V_{DD}$-20V with an external resistor.)
- Reference Voltage Output ($V_{REF}$) ····· 1.2V (± 28mV)
- Feedback Voltage Accuracy ····· ± 1.5% (Step-up), ± 25mV (Inverting)
- Oscillator Frequency ($f_{osc}$) ····· 300kHz, 700kHz, 1.4MHz
- Oscillator Maximum Duty Cycle (Maxduty) ··· Typ. 91%
- UVLO Detect Voltage ($V_{UVLO}$) ····· Typ. 2.15V
- Soft Start Time ($t_{start}$) ····· Typ. 4.5ms
- Latch Protection Circuit ····· Delay time for protection Typ. 50ms
- Package ····· DFN(PLP)2730-12

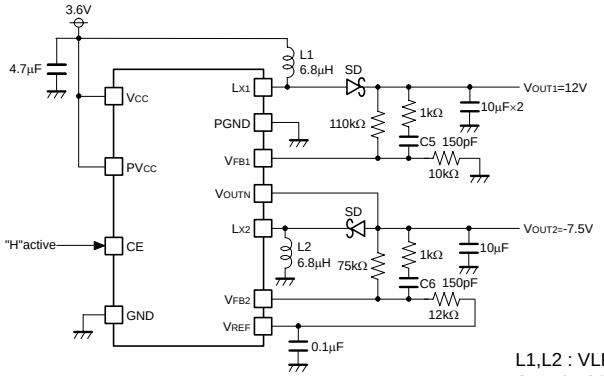
## BLOCK DIAGRAM

**R1283K**




## TYPICAL APPLICATION

**R1283K00xB**




L1,L2 : VLF3010
SD : CRS02

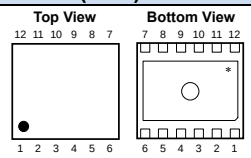
## SELECTION GUIDES

| Halogen Free | Package | Q'ty per Reel | Part No. |
|---|---|---|---|
| H/F | DFN(PLP)2730-12 | 5,000 pcs | R1283K00 ∗$ -TR |

∗ : Select the start-up sequence from
(1) Step-up → Inverting or (2) Inverting → Step-up.
$ : Select oscillator frequency from
(A) 300kHz, (B) 700kHz or (C) 1.4MHz.

## PACKAGES

**DFN(PLP)2730-12**

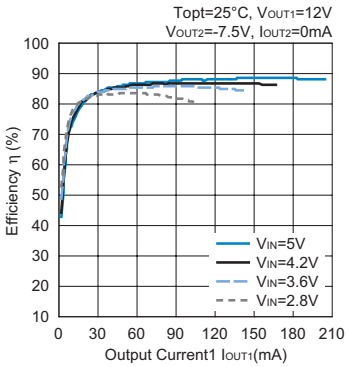


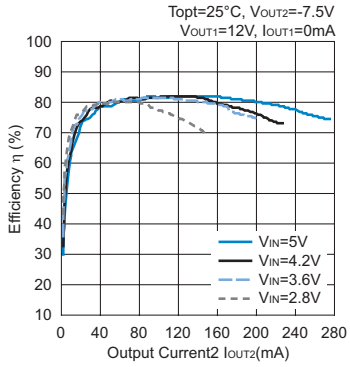

| | | | |
|---|---|---|---|
| 1 | NC | 7 | $V_{REF}$ |
| 2 | $L_{X1}$ | 8 | $V_{CC}$ |
| 3 | $L_{X2}$ | 9 | $V_{FB1}$ |
| 4 | $V_{OUTN}$ | 10 | GND |
| 5 | CE | 11 | $PV_{CC}$ |
| 6 | $V_{FB2}$ | 12 | PGND |

∗) The tab is substrate level (GND).

## TYPICAL CHARACTERISTICS

**R1283K001B Efficiency vs. Output Current**




## APPLICATIONS

- Power source for CCD, OLED and LCD
- Power source for hand-held equipment

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