

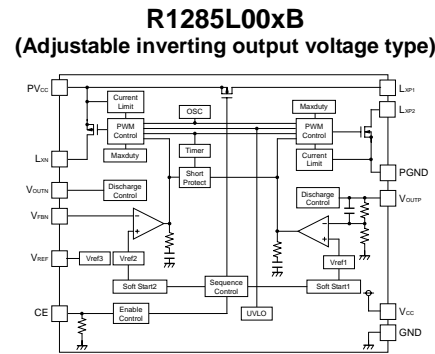
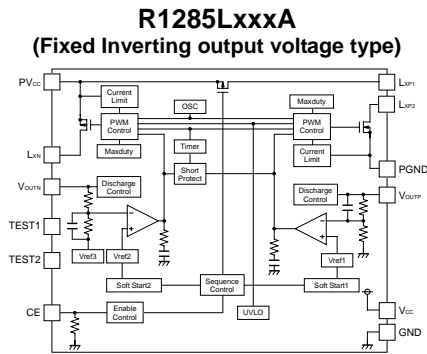
PWM Step-up/Inverting DC/DC Converter for AMOLED

The R1285L Series are dual output CMOS-based PWM step-up/inverting DC/DC converters. R1285L includes a soft start circuit, an under-voltage lockout circuit (UVLO) and a latch type 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. The Inverting DC/DC converter can be started after Step-up DC/DC converter by sequence control. At the standby mode, the internal shutdown switch can separate the output from the input.

FEATURES

- Supply Current (I_{DD1})..... Typ. 4mA (V_{IN}=4.8V, In switching)
- Supply Current (I_{DD2})..... Typ. 350μA (V_{IN}=4.8V, In non-switching)
- Standby Current (I_{standby}) Max. 3μA (V_{IN}=4.8V, CE="L")
- Input Voltage Range (V_{IN})..... 2.3V to 4.8V
- Step-up Output Voltage Range (V_{OUTP})..... Select from 4.6V, 4.8V or 5.0V
- Inverting Output Voltage Range (V_{OUTN})..... -2.0V to -6.0V (A Version)
The output voltage : adjustable up to -6V with an external resistor.
(Feedback voltage : 0V) (B Version)
- Step-up Output Voltage Accuracy..... ± 1.5%
- Inverting Output Voltage Accuracy .. ± 1.5% (A Version)
± 25mV (B Version)
- Output Reference Voltage (V_{REF}) 1.2V (± 28mV)
- Oscillator Frequency (f_{osc})..... 1.4MHz
- Oscillator Maximum Duty Cycle (Maxduty)..... Step-up :Typ. 85%
Inverting :Typ. 90%
- UVLO Detect Voltage (V_{UVLO})..... Typ. 2.05V
- Soft Start Time (t_{start}) Typ. 4.5ms
- Latch Protection Circuit Delay time for protection
Typ. 50ms
- Auto-Discharge function
- Package..... DFN2730-12

BLOCK DIAGRAMS



SELECTION GUIDE

Halogen Free	Package	Q'ty per Reel	Part No.
-	DFN2730-12	5,000 pcs	R1285Lxx\$*-TR-F

xx : Specify the inverting output voltage within the range of -2.0V (20) to -6.0V (60) in 0.1V steps. For the adjustable inverting output voltage type (00). (B Version)

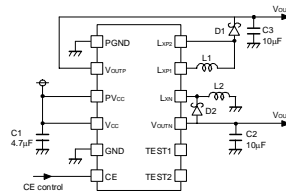
\$: Select the step-up output voltage from

(1) 4.6V, (2) 4.8V or (3) 5.0V.

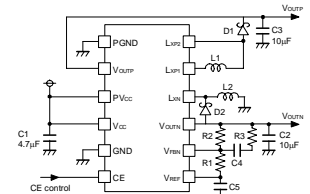
* : Select from (A) Fixed Inverting output voltage type or (B) Adjustable inverting output voltage type

TYPICAL APPLICATIONS

R1285LxxxA (Fixed Inverting output voltage type) **R1285L00xB (Adjustable inverting output voltage type)**



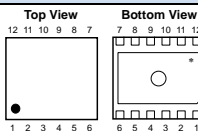
L1,L2: VLF3010-4R7 (TDK)
SD: CRS02 (Toshiba)



L1,L2: VLF3010-4R7 (TDK)
SD: CRS02 (Toshiba)
R1, R2: Resistors for setting V_{OUTN}
R3: 2kΩ, C4: 47pF, C5: 0.1μF

PACKAGE

DFN2730-12



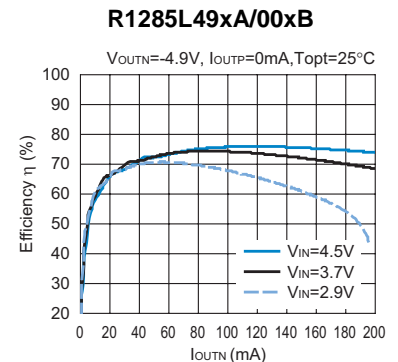
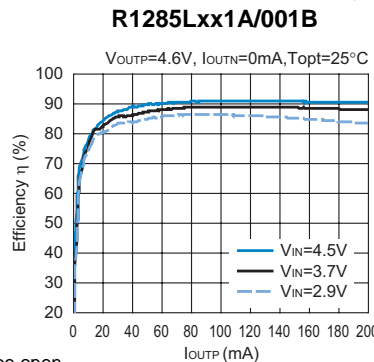
1	PGND	7	TEST2 ^{*2} or V _{REF}
2	V _{OUTP}	8	TEST1 ^{*2} or V _{FBN}
3	PV _{CC}	9	V _{OUTN}
4	V _{CC}	10	LXN
5	GND	11	LXP1
6	CE	12	LXP2

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

*2) The TEST1 pin and TEST2 pin connected to the GND level or should be open.

TYPICAL CHARACTERISTIC

Efficiency vs. Output Current



APPLICATIONS

- Power source for active matrix OLED
- Power source for battery-powered equipment



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