

1 A* Step-down DC/DC Converter with Synchronous Rectifier and Through mode

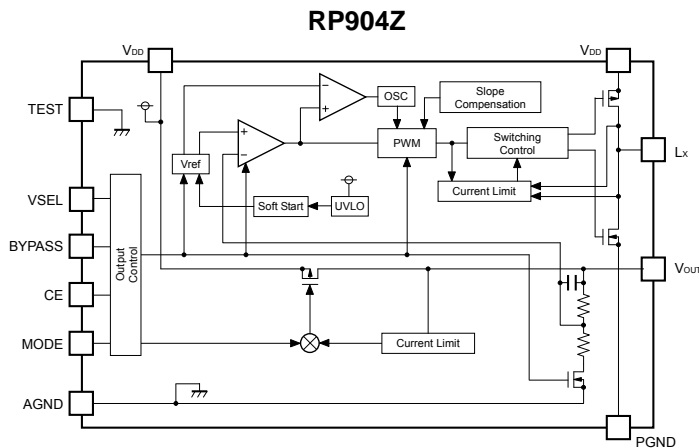
The RP904Z Series are CMOS-based step-down DC/DC converters with Synchronous Rectifier featuring 1 A* output current and have through mode. RP904Z includes an under-voltage lockout circuit (UVLO), a soft start circuit and a timer latch protection circuit. By simply using an inductor and capacitors as external components, a high-efficiency step-down DC/DC converter can be easily configured. The output voltage of DC/DC converter can be selected from 2 voltage by inputting signal to VSEL pin. The DC/DC converter is PWM/VFM manual switching control. RP904Z is able to select DC/DC mode or through mode by inputting signal to BYPASS pin. WLCSP-11-P2 package is available.

FEATURES

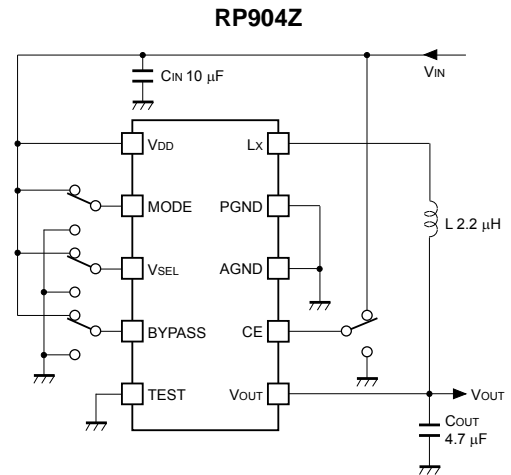
- Supply Current (I_{DD2}) Typ. 435 μ A (Through mode)
- Supply Current (I_{DD3}) Typ. 410 μ A (PWM mode, Non-switching)
- Supply Current (I_{DD4}) Typ. 165 μ A (VFM mode, Non-switching)
- Standby Current (I_{DD1}) Typ. 0.02 μ A (V_{IN} = 5.5 V, CE = "L")
- Input Voltage Range (V_{DD}) 2.5 V to 5.5 V (Absolute maximum rating: 6.5 V)
- Output Voltage Range (V_{OUT1}) 1.2 V to 3.3 V ** (internally fixed)
- Output Voltage Range (V_{OUT2}) 1.0 V to 1.5 V ** (internally fixed)
 ** V_{OUT1} \geq V_{OUT2} + 0.2 V, V_{OUT} = 1.0 V (V_{OUT} = 1.1 V: V_{IN} \geq 5.0 V)
- Output Voltage Accuracy \pm 2%
- Output Current (I_{OUT}) 1 A*
- Oscillator Frequency (f_{osc}) 2 MHz
- Oscillator Maximum Duty Cycle (Maxduty) .. Min. 100%
- UVLO Detect Voltage (V_{UVLO}) Typ. 2.25 V
- Soft Start Time (t_{start}) Typ. 0.135 ms
- Latch Protection Circuit Delay time for protection Typ. 0.8 ms
- Package WLCSP-11-P2

* This is an approximate value, because output current depending on conditions and external parts.

BLOCK DIAGRAM



TYPICAL APPLICATION



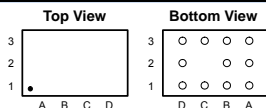
SELECTION GUIDE

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	WLCSP-11-P2	4,000 pcs	RP904Z _{XX} 1A-E2-F

XX : Specify a combination of output voltage using serial numbers.

PACKAGE (Top View)

WLCSP-11-P2

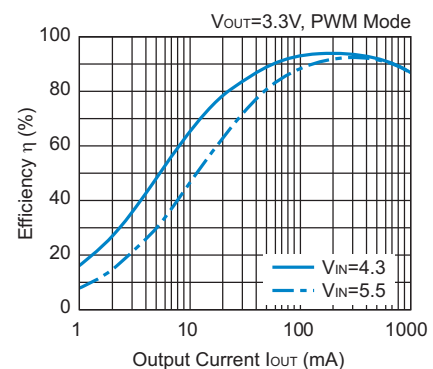


A1	AGND	C1	V _{DD} *
A2	VSEL		
A3	MODE	C3	V _{DD} *
B1	PGND	D1	CE
B2	TEST	D2	V _{OUT}
B3	Lx	D3	BYPASS

* The V_{DD} pins must be wired together when it is mounted on board.

TYPICAL CHARACTERISTIC

RP904Z Efficiency vs. Output Current



APPLICATION

- Power source for hand-held communication equipment, cameras, and VCRs



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