

1000W Ultra-small Intermediate Bus Converter

Description

YPM4812R1V-1K0 is a powerful and compact non-isolated DC-DC converter specifically designed for Intelligence applications. It can also be used for other high-power IBC requirements which have limited board space available. It can deliver 1000W of continuous power and 3000W of peak power.

Features

- ✓ Configurable for regulated voltage or fixed ratio
- ✓ Non-isolated DC-DC converter
- ✓ High power density
- ✓ Peak efficiency 98.2 %
- ✓ PMBus configuration



Size: 23.4*17.8*8mm

Applications

- ✓ AI applications
- ✓ Super-computing center

Performance

Parameter	Values	Unit
Input range	38-60	V
Output voltage	10-15(Configurable)	V
Output current	80	A
Output power	1000	W
Peak Power	3000	W
Peak efficiency	98.2	%

Maximum Ratings

Stress in excess of our defined *absolute maximum ratings* may cause permanent damage to the converter. Absolute maximum ratings, also referred to as *non-destructive limits*, are normally tested with one parameter at a time exceeding the limits in the electrical specification.

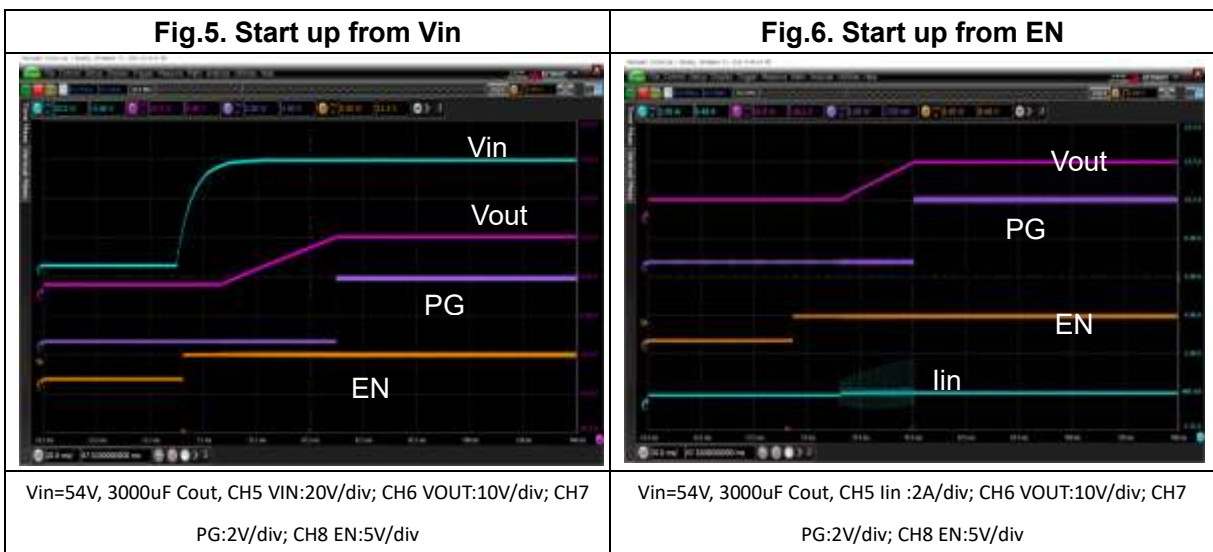
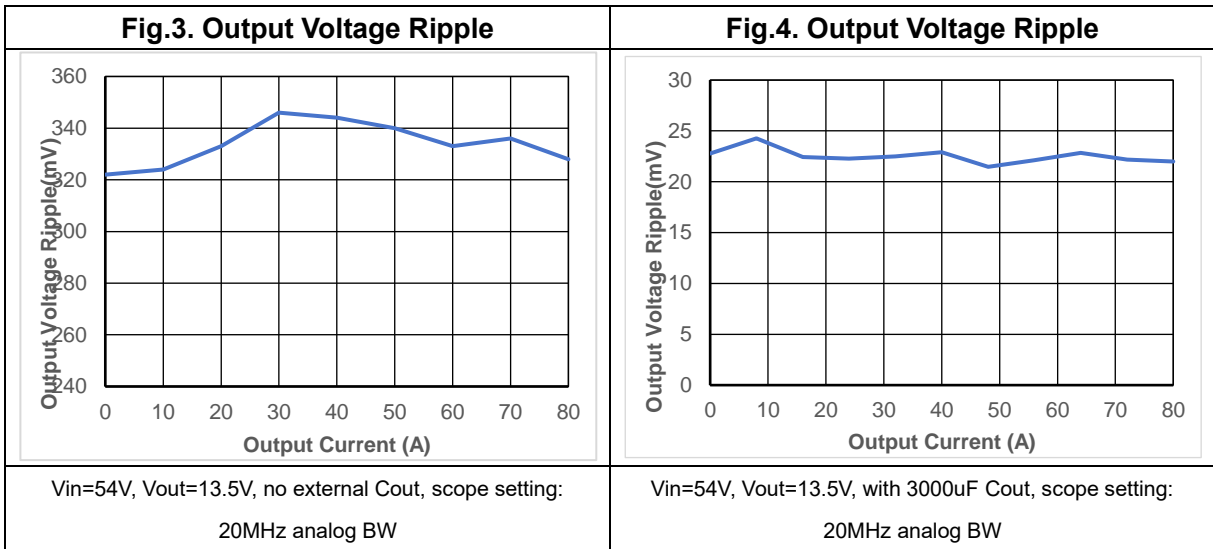
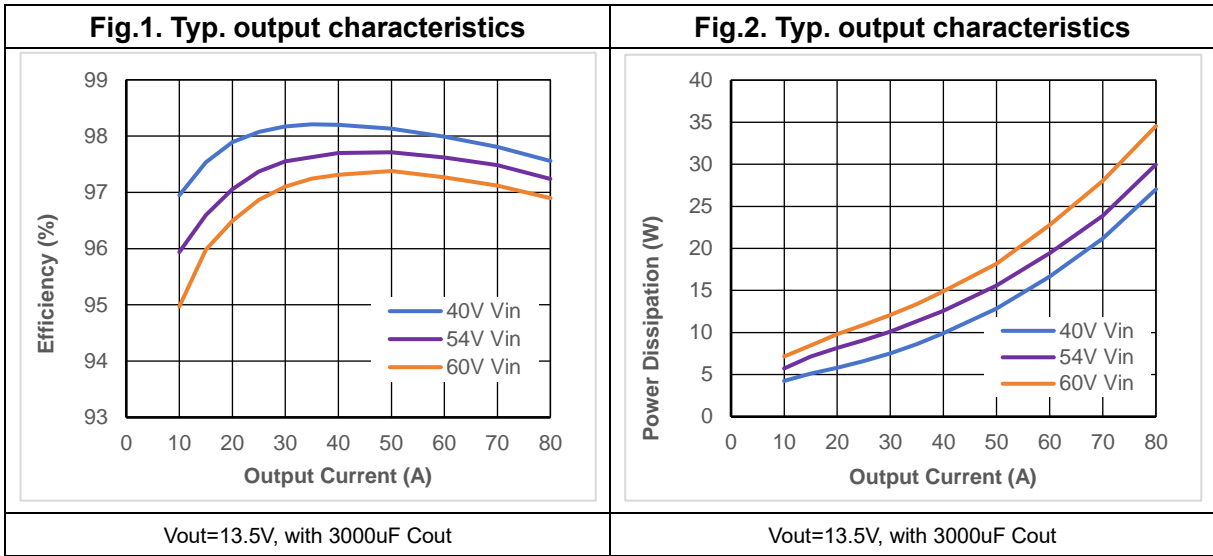
Characteristics	Min	Max	Unit
Operating temperature	-40	125	°C
Storage temperature	-40	125	°C
Input voltage (Vin) continuous operation	-0.3	60	V
Input voltage transient	-0.3	72	V
Signal I/O voltage (EN, PG, ALERT, ADDR, SCL, SDA)	-0.3	6.5	V

Electrical characteristics

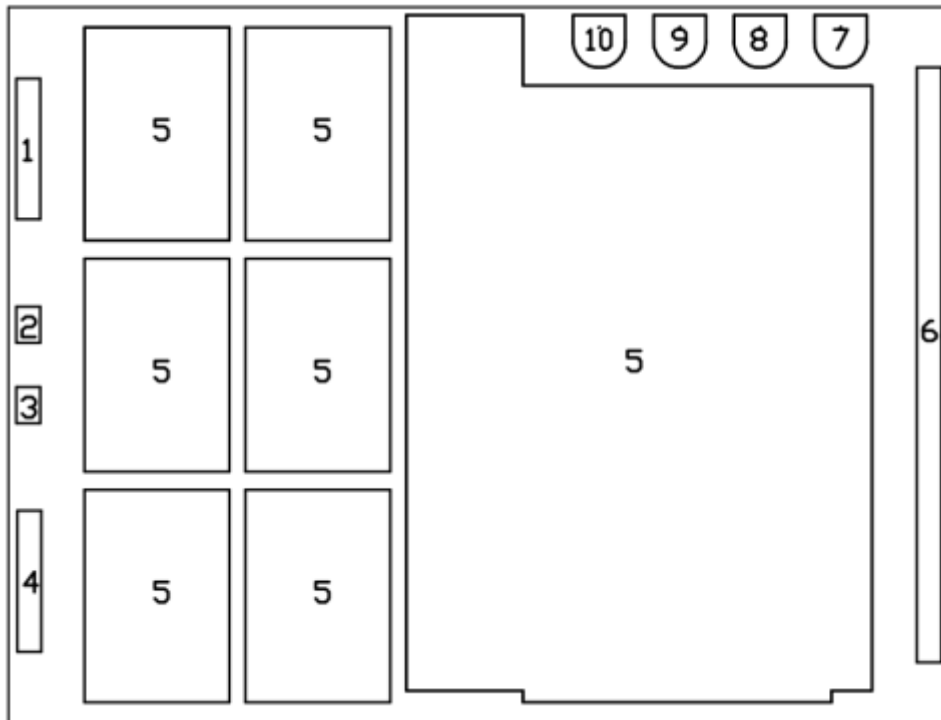
T_J = 25°C(unless specified)

Characteristics	Condition	Min.	Typ.	Max.	Unit
Key features					
Efficiency	Peak Efficiency Vin=40V Vout=13.5V		98.2		%
	50% of Pout_TDP Vin=54V Vout=13.5V		97.7		%
	100% of Pout_TDP Vin=54V Vout=13.5V		97.2		%
Efficiency (Over Load Range)	16A < I _{OUT_DC} < 80A		97.2		%
Pout_TDP thermal design power	Vin=54V Vout=13.5V		1080		W
Pout_MAX peak power (t ≤ 0.05 s)	Vin=54V Vout=13.5V		3000		W
Power dissipation	100% of Pout_TDP Vin=54V Vout=13.5V		30		W
Input characteristics					
Input voltage range		38		60	V
Input idling power	Pout = 0 W		5.4		W
Input standby power	turned off with EN		200		mW
Input OVP				68	V
Output characteristics					
Output voltage	Pout = 0 W		13.5		V
	Disabled, no load		2		V
	Disabled, 1 kΩ load		TBD		V
Output current	Vin=38-60 V, PG asserted		80	220	A
Output ripple & noise	With 3000uF Cout, 20MHz BW		25		mV _{p-p}

Typical Characteristics (TA=25°C unless specified)



Connections



Pin	Designation	Type	Function
1	+IN	Power	Input voltage
2	PG	Open Drain	Power good, active high
3	EN	Input	Enable, active high
4	+IN	Power	Input voltage
5	GND	Power	Power ground
6	VOUT	Power	Output voltage
7	ADDR	Input	PMBus address pin strap
8	SDA	Input/Output	PMBus data
9	SCL	Input	PMBus clock
10	ALERT	Open Drain	Alert signal, active low. Asserted when an over current warning condition or an over temperature warning condition occurs. Can be connected to GND if unused.

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