



VPA03 (H) Series

3 Watts

3W SINGLE AND DUAL OUTPUT

2:1 INPUT

ISOLATED & REGULATE

24 DIP PACKAGE

SHORT LEAD TIME



- 2:1 Input Range
- Efficiency Up To 86%
- Operating Temperature: -40°C~+85°C
- 1.5KVDC / 3KVDC (H) Isolation
- Single and Dual Output
- UL94-V0 Plastic Package
- No Heat Sink Required
- MTBF>1,000,000 hours
- Continuous Short Circuit Protection
- RoHS Compliance

Product Program

Part Number	Input Voltage (VDC)		Output Voltage (VDC)	Output Current (mA)	Efficiency (% Typ)	Package Style
	Nominal	Range				
VPA03-05S05(H)	5	4.5~9	5	600	74	DIP
VPA03-05S12(H)	5	4.5~9	12	250	77	DIP
VPA03-05S15(H)	5	4.5~9	15	200	77	DIP
VPA03-12S33(H)	12	9~18	3.3	909	74	DIP
VPA03-12S05(H)	12	9~18	5	600	81	DIP
VPA03-12S12(H)	12	9~18	12	250	83	DIP
VPA03-12S15(H)	12	9~18	15	200	82	DIP
VPA03-12S24(H)	12	9~18	24	125	83	DIP
VPA03-24S33(H)	24	18~36	3.3	909	78	DIP
VPA03-24S05(H)	24	18~36	5	600	81	DIP
VPA03-24S12(H)	24	18~36	12	250	86	DIP
VPA03-24S15(H)	24	18~36	15	200	86	DIP
VPA03-24S24(H)	24	18~36	24	125	85	DIP
VPA03-48S33	48	36~75	3.3	909	76	DIP
VPA03-48S05(H)	48	36~75	5	600	82	DIP
VPA03-48S12(H)	48	36~75	12	250	86	DIP
VPA03-48S15(H)	48	36~75	15	200	86	DIP
VPA03-05D05(H)	5	4.5~9	±5	±300	76	DIP
VPA03-05D12(H)	5	4.5~9	±12	±125	78	DIP
VPA03-05D15(H)	5	4.5~9	±15	±100	78	DIP
VPA03-12D05(H)	12	9~18	±5	±300	81	DIP
VPA03-12D09(H)	12	9~18	±9	±166	84	DIP
VPA03-12D12(H)	12	9~18	±12	±125	84	DIP
VPA03-12D15(H)	12	9~18	±15	±100	85	DIP
VPA03-24D05(H)	24	18~36	±5	±300	82	DIP
VPA03-24D12(H)	24	18~36	±12	±125	84	DIP
VPA03-24D15(H)	24	18~36	±15	±100	84	DIP
VPA03-48D05(H)	48	36~75	±5	±300	82	DIP

VPA03-48D12(H)	48	36~75	±12	±125	84	DIP
VPA03-48D15(H)	48	36~75	±15	±100	85	DIP

ISOLATION SPECIFICATIONS

Item	Test conditions	Max	Units
Isolation voltage	Tested for 1 minute	1500/3000(H)	VDC
Isolation resistance	Test at 500VDC	1000	MΩ

COMMON SPECIFICATION

Output Short Circuit Protection	Continuous
Temperature Rise at Full Load	40°C (typ)
Cooling	Free Air Convection
Operating Temperature Range	-40°C~+85°C (with derating)
Storage Temperature Range	-55°C ~+125°C
Lead Temperature***	300°C (1.5mm from case for 10 seconds)
Storage Humidity Range	≤ 95%
Case Material	Plastic (UL94-V0)
Dimensions	31.75x20.3x10.2mm (1.24x0.8x0.4 inch)
MTBF	>1,000,000 hours
Wight	14g

***Lead Temperature 1.5mm from case for 10 seconds.

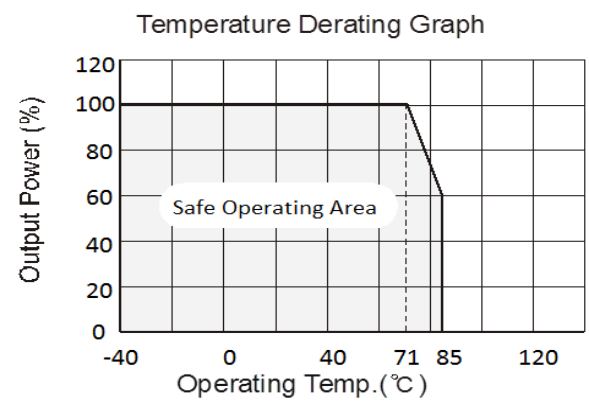
Output SPECIFICATION

Item	Test conditions	MIN	TYP	MAX	Units
3W output power	See below products program			3	W
Output Voltage accuracy	Refer to recommended circuit		±1	±3	%
Load regulation	From 5% to 100% load		±0.2	±0.5	
Line regulation	Input Voltage From Low to High		±0.2	±0.5	
Temperature Coefficient	Full load		±0.02	±0.03	%/°C mVp-p
Ripple	20Hz-300KHz bandwidth		50	80	
Noise	DC-20MHz bandwidth		45	75	
Switching frequency	100% load, nominal input voltage		200		KHz

Note:

1. All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. See below recommended circuits for more details.

TYPICAL CHARECTERISTICS



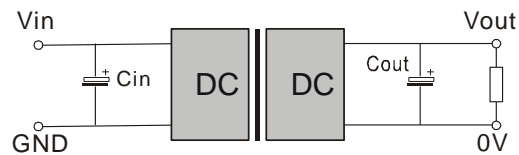
FOOTPRINT DETAILS

PIN	2,3	9	10	11	14	15	16	22,23
SINGLE	-Vin	NC	NC	NC	+Vout	NC	-Vout	+Vin
DUAL	-Vin	COMMON	NC	-Vout	+Vout	NC	COMMON	+Vin

Recommended Circuit

Recommended Circuit

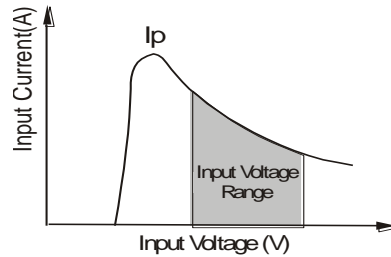
All the VPA03(H) Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (See Figure 1). If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high.(See table 1)..



(Figure 1)

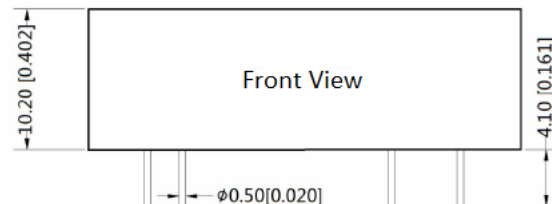
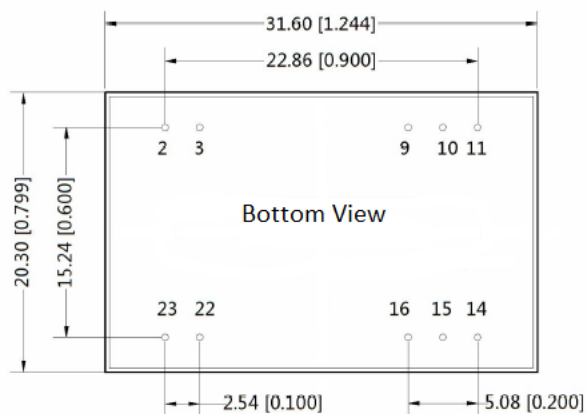
Input Current

When it is used in unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module. (See figure 2)



(Figure 2)

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Dimensions: mm [Inch]
Pin tolerance: ± 0.10 (± 0.004)
Pin pitch tolerance: ± 0.25 (± 0.01)