



DC/DC Converter VPD10 Series, DIP24 Package



Features

- Ultra-wide 4:1 input voltage
- 2 years warranty
- High efficiency up to 84%
- Industry Standard Pinout
- Input under-voltage protection
- Output short-circuit protection
- Output overload protection
- Output overvoltage protection
- 1500VDC I/O isolation
- Without output electrolyte or tantalum capacitor

VICTORYPOW VPD10 series are 10W isolated DC/DC converter with an extreme wide input voltage range of 9-36VDC or 18-75VDC which provide precisely regulated output voltage of 3.3V, 5V, 12V, 15V, 24V, $\pm 5V$, $\pm 12V$, $\pm 15V$ VDC. The isolation voltage of input to output is 1500VDC. Input under-voltage, continuous output short circuit, output overload and output overvoltage protection are provided.

Selection Guide						
Part No.	Input voltage (VDC) (range)	Output			Max. capacitive load (μF)	Efficiency Typ.
		Voltage(VDC)	Current(mA)			
			Max	Min		
VPDI10-0936S33	24 (9-36)	3.3	3000	150	680	80
VPDI10-0936S05		5	2000	100		82
VPDI10-0936S12		12	833	50	100	83
VPDI10-0936S15		15	666	45	100	83
VPDI10-0936S24		24	416	35	33	82
VPDI10-0936D05		± 5	± 1000	± 50	330	83
VPDI10-0936D12		± 12	± 416	± 25	56	84
VPDI10-0936D15		± 15	± 333	± 23	56	84
VPDI10-1875S33		48 (18-75)	3.3	3000	150	680
VPDI10-1875S05	5		2000	100	82	
VPDI10-1875S12	12		833	50	100	83
VPDI10-1875S15	15		666	45	100	83
VPDI10-1875S24	24		416	35	33	82
VPDI10-1875D05	± 5		± 1000	± 50	330	83
VPDI10-1875D12	± 12		± 416	± 25	56	84
VPDI10-1875D15	± 15		± 333	± 23	56	84

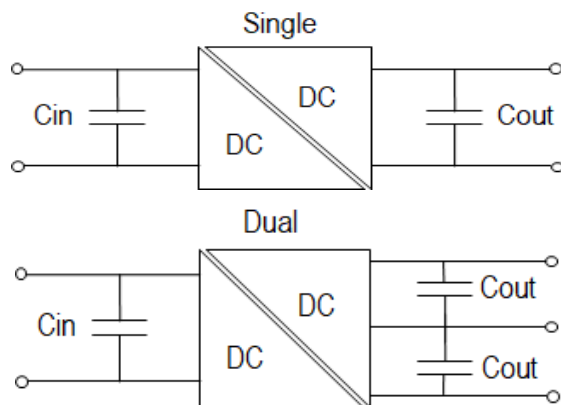
Input specification						
Item	Model	Min.	Typ.	Max.	Unit	
Start-up Voltage	9-36VDC input	8	8.5	9	VDC	
	18-75VDC input	16	17	18		
Input surge voltage	9-36VDC input	-0.7		45		
	18-75VDC input	-0.7		95		
Under-voltage shutdown	9-36VDC input	7	7.5	8		
	18-75VDC input	15	16	17		
Short circuit input power	All Models			4000	mW	

Output Specification					
Item	Condition	Min.	Typ.	Max.	Unit
Voltage accuracy	At 50% Load & Nominal input voltage			±1.5	% V_{nom}
Line regulation	V_{in} = min. to max.		0.5	1	%
Load regulation	I_o =10% to 100%	Positive output	0.2	0.5	
		Negative output	1	2	
Cross regulation	Positive output 50% load and negative output 25% ~ 100% load			4	
Ripple & Noise	20MHz bandwidth		60	80	mV_{p-p}
Transient Recovery Time	25% Load step at nominal input voltage		300	400	μs
Transient Response deviation				6	% V_o
Over-load protection	Foldback		110	125	% I_o
Short circuit protection	Continuous				

General specification					
Item	Condition	Min.	Typ.	Max.	Unit
Input-output isolation voltage	1 minute	1500			VDC
Input- output Resistance	500VDC	1			G Ω
Input-output capacitance			500		pF
Switching Frequency	PWM mode	320	340	370	KHz
Operating ambient temperature		-40		75	$^{\circ}C$
Storage temperature	Absolute Max. internal temp.			125	$^{\circ}C$
Case Temperature	Full load			90	$^{\circ}C$
Cooling	Free-Air cooling				

Design Reference

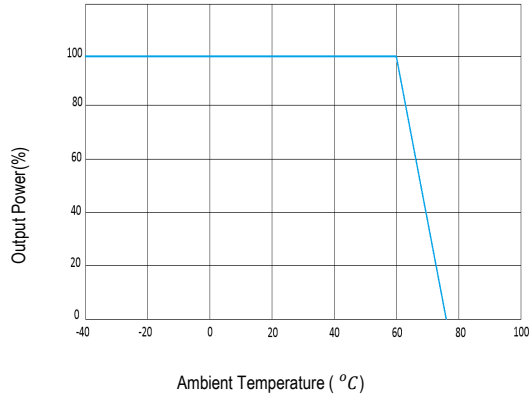
To reduce the output Ripple and Noise, it is recommended to use the circuit below. If further ripple and noise reduction is required, C_{in} and C_{out} can be increased appropriately. Also, it is hardly recommend to make sure that added capacitor is not exceeding max. capacitive load of product.



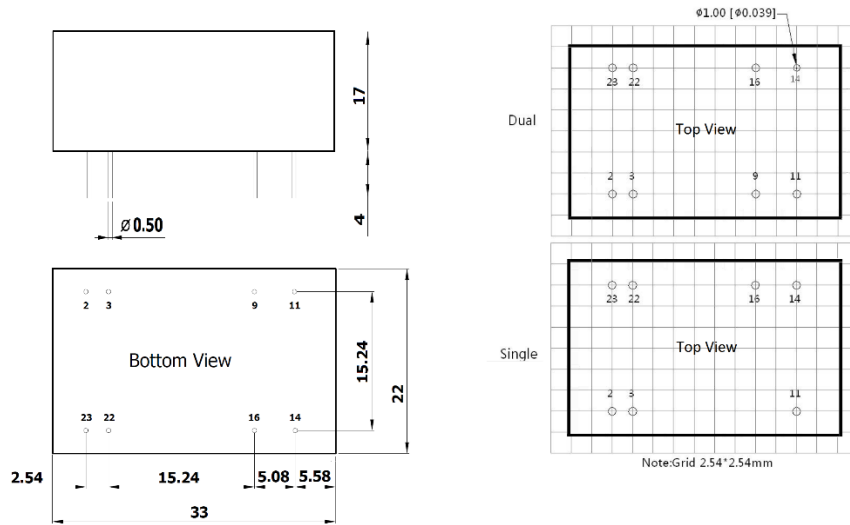
V_{in} (VDC)	C_{in}	C_{out}
9-36	100 μF	10 μF
18-75	33 μF	10 μF

Power derating chart

- The curve is provided in natural convection condition.



Package and physical specification



- ✓ All dimensions in mm ± 0.1
- ✓ The case of converters black plastic

Pin	Pin-Out	
	Single	Double
2,3	GND	GND
9	No Pin	GND-Out
11	NC	-Vout
14	+Vout	+Vout
16	GND-Out	GND-Out
22,23	Vin	Vin

Notes

- These DC/DC Converters require minimum load. Operating under No-load condition can't damage modules, however they can't meet above specification.
- Different input and output voltage is available depending order, please contact the company.
- The modules should be fused at front end for protection.
- An electrolyte capacitor at front end can improve modules operation.
- To use capacitor at output for decreasing ripple and noise, please note the maximum capacitance load.