

**Chassis-Mount DC-DC converter  
up to 40 Watts**

**3**  
YEARS  
WARRANTY

**ROHS**  
COMPLIANT

**REACH**  
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway



<b>3000</b> VDC Isolation Voltage	<b>1600</b> VDC Isolation Voltage	<b>4 : 1</b> Wide Input Range	<b>FUSE</b> Installed	<b>INRUSH</b> <b>CURRENT</b> <b>LIMIT</b>	<b>LOW</b> Standby Power	<b>NO</b> Min. Load Required	<b>REMOTE</b> <b>ON</b> <b>OFF</b>	<b>REVERSE</b> <b>POLARITY</b> <b>PROTECTION</b>	<b>OCP</b>	<b>OTP</b>	<b>OVP</b>
<b>SCP</b>	<b>UVP</b>										

**PART NUMBER STRUCTURE**

VPED40 -	48	S	05	W -	N	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option	Conformal Coating Option	Assembly Option
	24:9.5~36 48:18~75 110:43~160	S:Single	3P3:3.3 05:5 12:12 15:15	4:1	□:Positive logic N:Negative logic	□: None R: Conformal Coating	□: None EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type
		D: Dual	12:±12 15:±15 24:±24				

**TECHNICAL SPECIFICATION** All specifications are typical at nominal input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @ No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	mA	mA	%	µF
VPED40-24S3P3W	9.5 ~ 36	3.3	10000	19	89	26600
VPED40-24S05 W	9.5 ~ 36	5	8000	19	90	20000
VPED40-24S12 W	9.5 ~ 36	12	3333	19	91	3900
VPED40-24S15 W	9.5 ~ 36	15	2666	19	91	2600
VPED40-24S24 W	9.5 ~ 36	24	1666	19	90	1300
VPED40-24D12 W	9.5 ~ 36	±12	±1666	19	89	±2600
VPED40-24D15 W	9.5 ~ 36	±15	±1333	19	89	±1600
VPED40-24D24 W	9.5 ~ 36	±24	±833	19	90	±650
VPED40-48S3P3W	18 ~ 75	3.3	10000	14	89	26600
VPED40-48S05 W	18 ~ 75	5	8000	14	90	20000
VPED40-48S12 W	18 ~ 75	12	3333	14	91	3900
VPED40-48S15 W	18 ~ 75	15	2666	14	91	2600
VPED40-48S24W	18 ~ 75	24	1666	14	90	1300
VPED40-48D12 W	18 ~ 75	±12	±1666	14	89	±2600
VPED40-48D15W	18 ~ 75	±15	±1333	14	89	±1600
VPED40-48D24 W	18 ~ 75	±24	±833	14	90	±650
VPED40-110S3P3 W	43 ~ 160	3.3	10000	10	87	26600
VPED40-110S 05W	43 ~ 160	5	8000	10	88	20000
VPED40-110S12W	43 ~ 160	12	3333	10	89.5	3900
VPED40-110S 15W	43 ~ 160	15	2666	10	90	2600
VPED40-110S24W	43 ~ 160	24	1666	10	89	1300
VPED40-110D1 2W	43 ~ 160	±12	±1666	10	88	±2600
VPED40-110D15W	43 ~ 160	±15	±1333	10	88	±1600
VPED40-110D2 4W	43 ~ 160	±24	±833	10	90	±650

**INPUT SPECIFICATIONS**

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	24Vin(nom)	9.5	24	36	VDC
	48Vin(nom)	18	48	75	
	110Vin(nom)	43	110	160	
Input fuse	slow blow		8		A
	24Vin(nom)	Á	4		
	48Vin(nom)		2		
In-rush current			15		A
Start up voltage	24Vin(nom)			9.5	VDC
	48Vin(nom)			18	
	110Vin(nom)			43	
Shutdown voltage	24Vin(nom)	7.5	8	9	VDC
	48Vin(nom)	15.5	16	17.5	
	110Vin(nom)	38.5	40	42	
Start up time	Constant resistive load	Power up	Á	100	ms
		Remote ON/OFF		60	
Input surge voltage	1 second, max.	24Vin(nom)		50	VDC
		48Vin(nom)		100	
		110Vin(nom)		170	
Remote ON/OFF	Referred to -Vin pin	Positive logic	DC-DC ON	Open or 3 ~ 12VDC	
		(Standard)	DC-DC OFF	Short or 0 ~ 1.2VDC	
		Negative logic	DC-DC ON	Short or 0 ~ 1.2VDC	
		(Option)	DC-DC OFF	Open or 3 ~ 12VDC	
		Input current of Ctrl pin	-0.5	1	mA
		Remote off input current		5	mA

OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy	3.3Vout		-1.5		+1.5	%
	Others		-1.0		+1.0	
Line regulation	Low Line to High Line at Full Load		-0.5		+0.5	%
Load regulation	No Load to Full Load					%
	3.3Vout, 5Vout		-1.5		+1.5	
	Others		-1.0		+1.0	
Cross regulation	Asymmetrical load 25%/100% FL					%
Voltage adjustability	Single output					%
	3.3Vout, 5Vout, 12Vout		-10		+10	
	15Vout, 24Vout		-10		+20	
Ripple and noise	Measured by 20MHz bandwidth			75		mVp-p
				100		
				150		
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% load step change			250		µs
Over voltage protection	Zener diode clamp			3.9		VDC
				6.2		
				15		
				20		
				30		
Output indicator				Green LED		
Over load protection	% of Iout rated; Hiccup mode			150		%
Short circuit protection				Continuous, automatic recovery		

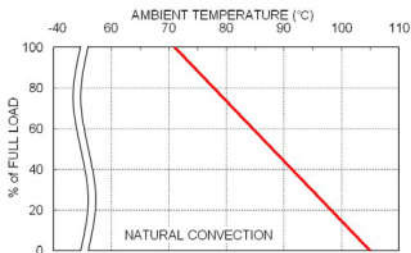
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	110Vin(nom) Input to Output	3000			VDC
		Input (Output) to Chassis	1600			
		Others Input to Output	1600			VDC
		Input (Output) to Chassis	1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance				4000		pF
Switching frequency			225	250	275	kHz
Safety meets			IEC/ UL/ EN60950-1, 62368-1			
Chassis material			Aluminum			
Conformal coating			Impregnating varnish			
Weight			110g (3.88oz)			
MTBF	MIL-HDBK-217F, Full load		1.944 x 10 <sup>6</sup> hrs			

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	with derating		-40		+105	°C
Over temperature protection	Case of DC/DC module			115		°C
Storage temperature range			-40		+105	°C
Thermal shock			MIL-STD-810F			
Shock	□□S□□W -□		EN61373, MIL-STD-810F			
	□□S□□W -□EC		EN61373, MIL-STD-810F			
	□□S□□W -□DR		EN61373, IEC60068-2-27			
	□□S□□W -□ED		EN61373, IEC60068-2-27			
Vibration	□□S□□W -□		EN61373, MIL-STD-810F			
	□□S□□W -□EC		EN61373, MIL-STD-810F			
	□□S□□W -□DR		EN61373, IEC60068-2-6			
	□□S□□W -□ED		EN61373, IEC60068-2-6			
Relative humidity			5% to 95% RH			

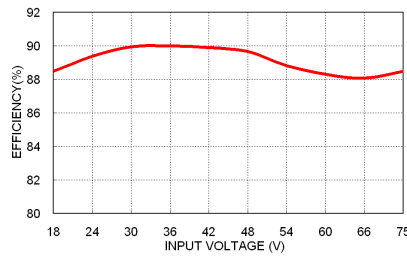
**EMC SPECIFICATIONS**

Parameter	Conditions	Level
EMI	EN55032	Class B
ESD	EN61000-4-2 Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3 20V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ± 2kV	Perf. Criteria A
Surge	EN61000-4-5 EN55024 ±1kV and EN50155 ±1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6 10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

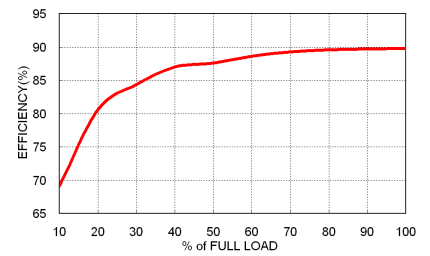
**CHARACTERISTIC CURVE**



VPED40-48S05W Derating Curve



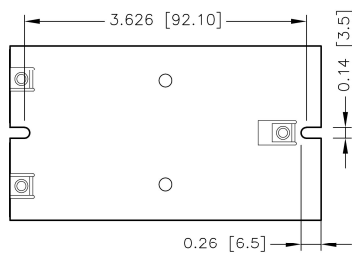
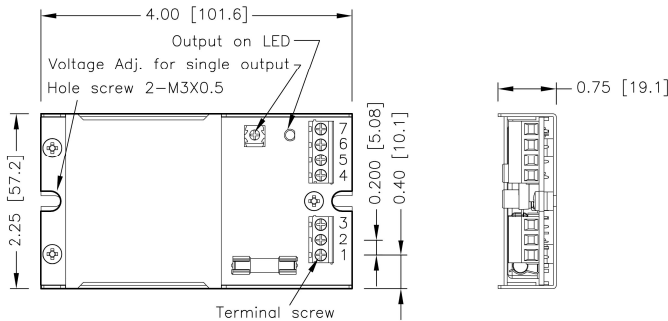
VPED40-48S05W Efficiency vs. Input Voltage



VPED40-48S05W Efficiency vs. Output Load

**MECHANICAL DRAWING**

**CHASSIS MOUNTING TYPE**



BOTTOM VIEW

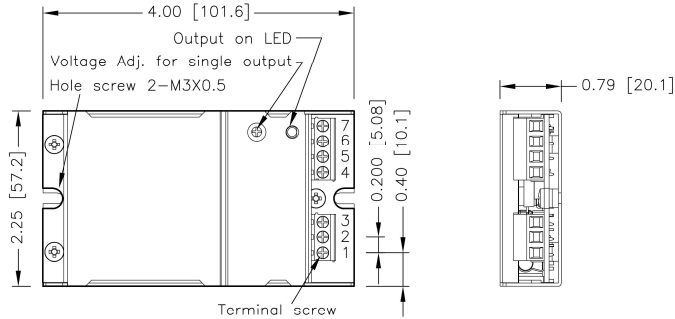
**TERMINAL CONNECTION**

NO.	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

- ※ NC : No Connection
- ※ Screw terminals – wire range from 14 to 18 AWG

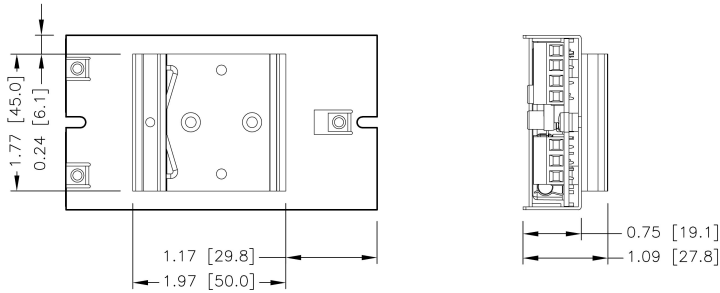
**MECHANICAL DRAWING (CONTINUED)**

**ENCLOSED MOUNTING TYPE**



TOP VIEW

**DIN RAIL MOUNTING TYPE**



BOTTOM VIEW

1. All dimensions in Inch [mm]
2. Tolerance : X.XX±0.02 [X.X±0.5]
2. Tolerance : X.XXX±0.01 [X.XX±0.25]
3. Hole screw locked torque :  
MAX 5.0kgf-cm/ 0.49N-m
4. Terminal screw locked torque :  
MAX 2.5kgf-cm/ 0.25N-m