



■ FEATURES

- Single in line package
- 8:1 Wide input range
- High efficiency up to 87%
- No minimum load required
- Overload protection & UVLO
- 1500Vdc I/O isolation

■ APPLICATIONS

- Automation equipment
- Power supplies
- Industrial PC
- Data communications
- Distributed power system

■ DESCRIPTION

PDW-E series is a 9W DC-DC converter in SIP-8 plastic package. It contains 8:1 extra wide input voltage range, and features high efficiency up to 87%, 1500Vdc isolation voltage between input and output, and wide working temperature range from -40°C up to $+75^{\circ}\text{C}$, and suit all kinds of systems like industrial control, automation field, and so on.

PDW	S	-	24	05	E
Series Name	Output Quantity		Input Voltage	Output Voltage	Input Range
	S : Single		24 : 9~75V	03.3 : 3.3V	E: 8:1
	D : Dual			05 : 5V ; $\pm 5\text{V}$	
				09 : 9V	
				12 : 12V ; $\pm 12\text{V}$	
				15 : 15V ; $\pm 15\text{V}$	
				24 : 24V	

■ 8:1 MODEL SELECTION TABLE

MODEL NUMBER	INPUT				OUTPUT		EFF. (%)	CAPACITOR LOAD (Max.)
	VOLTAGE (VDC)		CURRENT (mA)		VOLTAGE (VDC)	CURRENT (mA)		
	NOMINAL	RANGE	NO LOAD	FULL LOAD				
PDWS-2403.3E	24	9~75	10	339	3.3	0~2000	81	680uF
PDWS-2405E			10	401	5	0~1600	83	680uF
PDWS-2409E			10	436	9	0~1000	86	470uF
PDWS-2412E			10	431	12	0~750	87	330uF
PDWS-2415E			10	431	15	0~600	87	220uF
PDWS-2424E			10	431	24	0~375	87	100uF
PDWD-2405E	24	9~75	10	397	±5	±0~800	84	±330uF
PDWD-2412E			10	431	±12	±0~375	87	±150uF
PDWD-2415E			10	431	±15	±0~300	87	±100uF

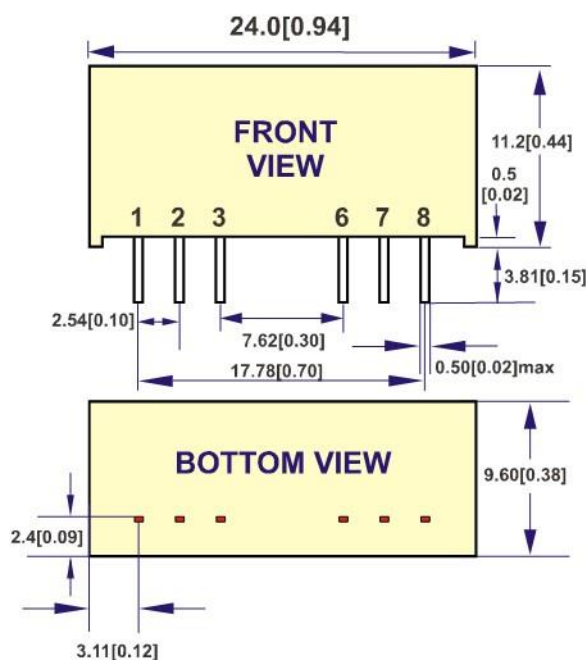
Note: Efficiency and input current are measured at nominal input voltage and full load.

Other input to output voltages may be available. Please contact factory.

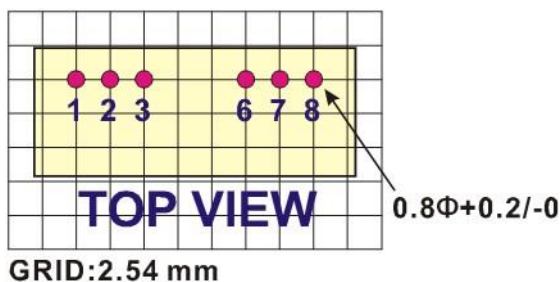
■ SPECIFICATION

INPUT	Voltage Range	9~75V		
	Surge Voltage(100ms max.)	24Vin models : 100Vdc		
	Filter	Pi network		
	Under Voltage Lockout	Start-up voltage : 8.8 Vdc Shutdown voltage : 8 Vdc		
	Remote Control	See page 4		
	Protection	Fuse recommended (see page 6)		
OUTPUT	Voltage Accuracy	±2% max.		
	Rated Power	9W		
	Ripple & Noise ¹	3.3~9V : 100mV Vp-p max.	12~24V : 1% output Vp-p max.	
	Line Regulation ²	±0.5%		
	Load Regulation ³	±0.5%	±1% for 3.3Vdc output	
	Cross Regulation	±5%	Dual : asymmetrical load 25%/100% FL	
	Switching Frequency	300KHz typ.(PWM)		
PROTECTION	Short Circuit	Protection type : continuous, recovery		
	Overload	110%~230% Protection type : recovers automatically after fault condition is removed		
ENVIRONMENT	Cooling	Free-air convection		
	Working Temperature	-40~ +75°C (refer to “Derating Curve”)		
	Case Temperature ⁴	+115 °C max.		
	Working Humidity	5% ~ 95% RH non-condensing		
	Storage Temp., Humidity	-55 ~ +125°C, 10 ~ 95% RH non-condensing		
	Temperature Coefficient	±0.05% / °C		
	Soldering Temperature	1.5mm from case of 3~5 sec./265°C(max.)		
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60 min. each along X, Y, Z axes		
SAFETY & EMC	Isolation Voltage	I/P-O/P : 1500Vdc		
	Isolation Resistance	I/P-O/P : 1000M Ohms / 500VDC / 25°C / 70% RH		
	Isolation Capacitance	80pF typ.		
	EMC Emission	Parameter	Standard	Test Level / Note
		Conducted	EN55032(CISPR32)	N/A
		Radiated	EN55032(CISPR32)	Class A (with external filter)
	EMC Immunity	Parameter	Standard	Test Level / Note
		ESD	BS IEC 61000-4-2	Air±8KV
		Radiated Susceptibility	BS IEC 61000-4-3	3V/m
		EFT/Burst	BS IEC 61000-4-4	±0.5KV
		Surge	BS IEC 61000-4-5	Line-Line ±0.5KV
		Conducted	BS IEC 61000-4-6	3Vrms
		Magnetic field immunity	BS IEC 61000-4-8	1A/m
OTHERS	MTBF ⁵	>980,000Hours		
	Weight	5.0g typ.		
	Dimension(L*W*H)	24.0mm*9.6mm*11.2mm		
	Case Material	Non-conductive plastic		
NOTE	¹ Ripple & noise are measured at 20MHz BW with 1uF ceramic capacitor connect to the output pins.			
	² High line to low line.			
	³ Load regulation is for output load current change from 0% to 100%.			
	⁴ The temperature measuring point is the center of the front side.			
	⁵ MIL-HDBK-217F @25 °C, Ground Benign.			
	*All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated output load			

MECHANICAL SPECIFICATION



All dimensions are in mm[inches]



PIN CONNECTION		
PIN	SINGLE	DUAL
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote	Remote
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

All dimensions are in mm[inches]

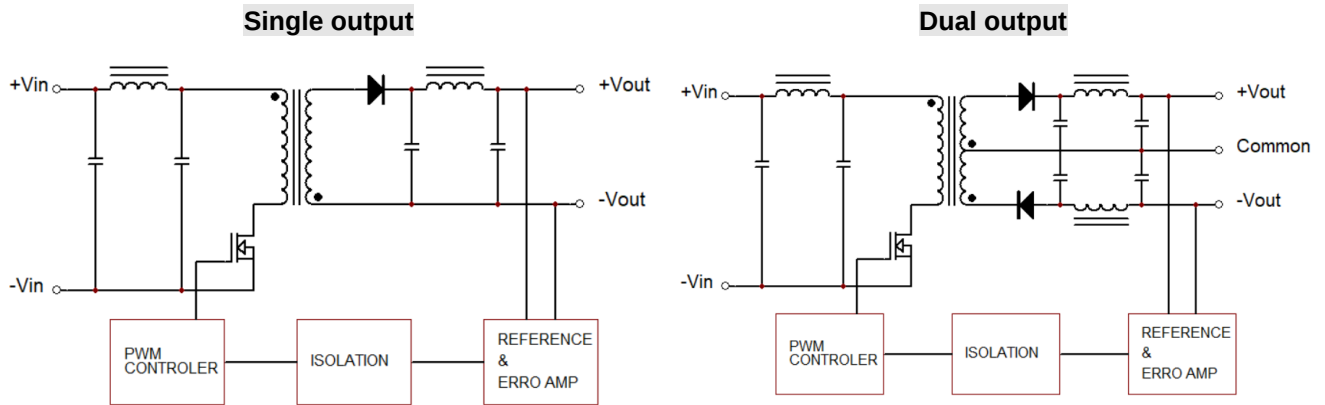
Pin size is 0.50x0.30mm ±0.05mm

Tolerance .X or .XX= ±0.5mm

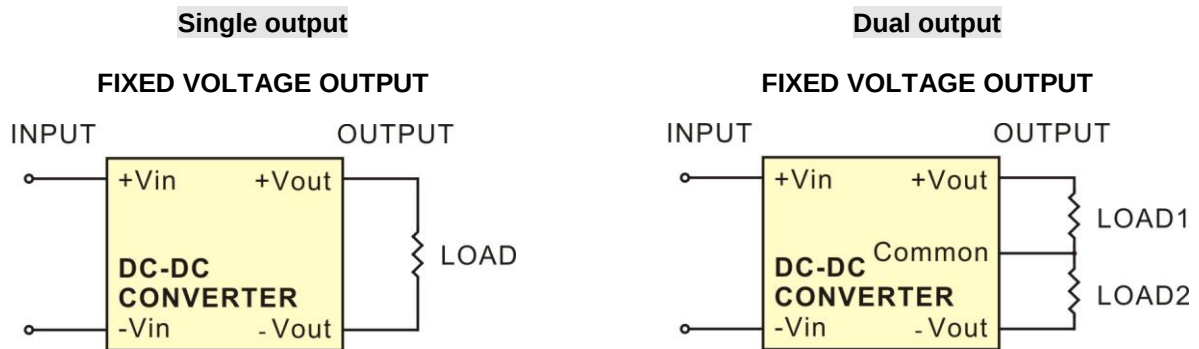
REMOTE ON/OFF CONTROL

Remote On/Off Control			
Control Input	PIN3	Control Common	PIN1
Control Voltage		Converter Shutdown Idle Current	10mA
ON	> 2.5 ~ 30VDC or Open Circuit	Logic Compatibility	CMOS or Open Collector TTL
OFF	<1.0 VDC or Jumper to PIN1		

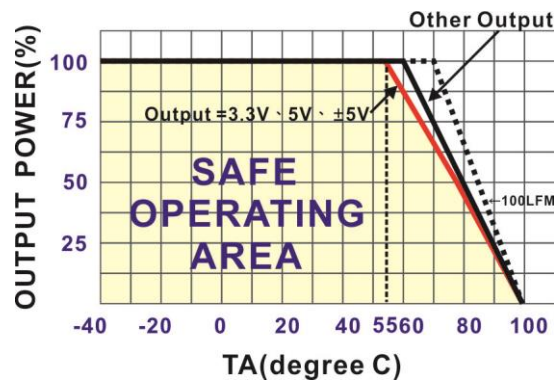
SIMPLIFIED SCHEMATIC



TYPICAL APPLICATIONS

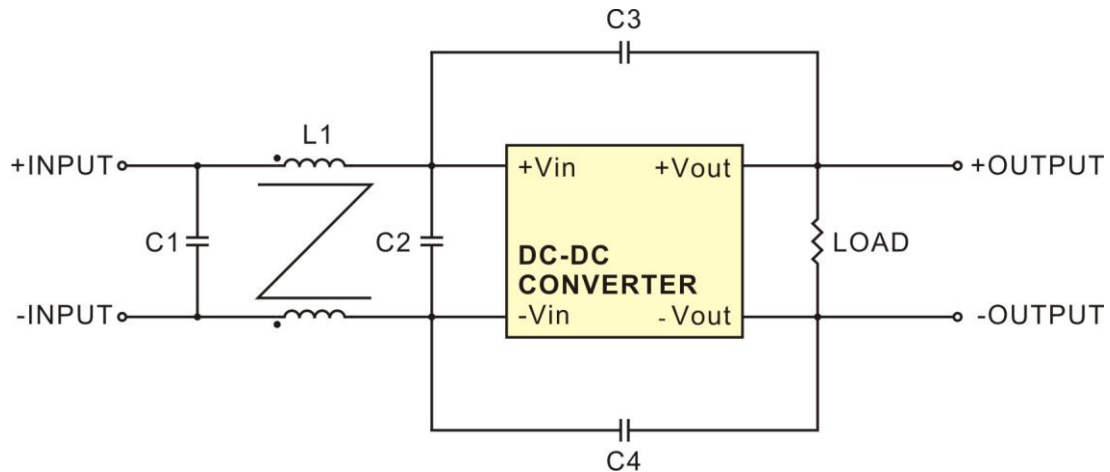


DERATING CURVE



RECOMMENDED FILTER FOR EN55032

The components used in the under figure, together with the manufacturer's part numbers for these components, are as follows:



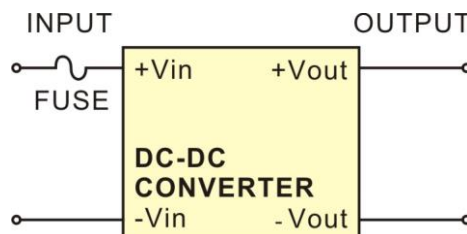
MODEL NUMBER	C1	C2	C3	C4	L1
PDWX-24XXE	X	2.2uF/100V MLCC	102/3KV	102/3KV	X

Note: All of capacitors are ceramic capacitors.

INPUT FUSE SELECTION GUIDE

9-75V Input Voltage (Vdc)

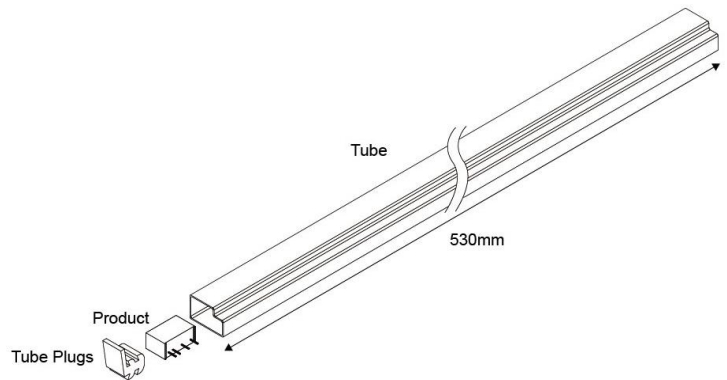
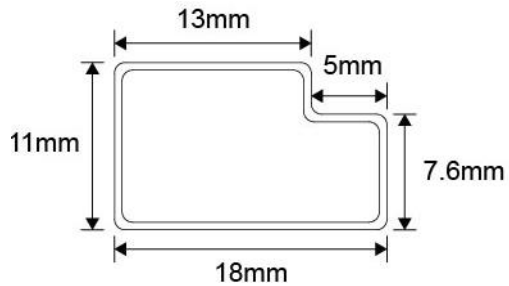
2000mA Slow-Blow Type



Note: Certain applications may require the installation of external fuse in front of the input.



■ PACKAGING INFORMATION



Packaging Quantity: 21 pcs converter per tube



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