PDW-E SERIES

9W 8:1 DC-DC Converter

■ 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 –40ºC up to +75ºC, 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 D : Dual		24 : 9~75V	03.3 : 3.3V 05 : 5V；±5V 09 : 9V 12 : 12V；±12V 15 : 15V；±15V 24 : 24V	E: 8:1

■ 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

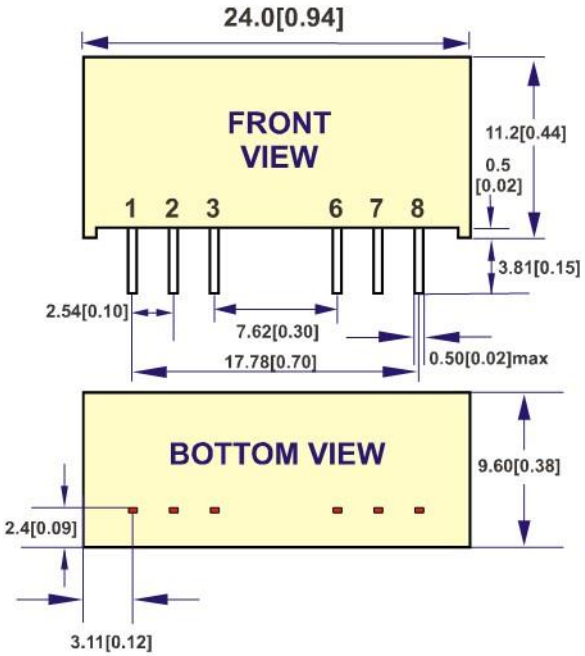
Note: Efficiency and input current are measured at nominal input voltage and full load.

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

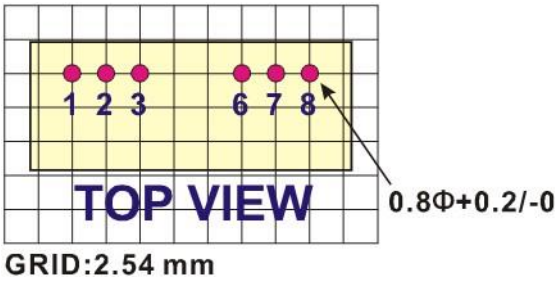
■ SPECIFICATION

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[5]	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[6]	>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] 1500VDC for 60 seconds.** **[6] MIL-HDBK-217F @25 °C, Ground Benign.** ***All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated output load unless otherwise specified.**			

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

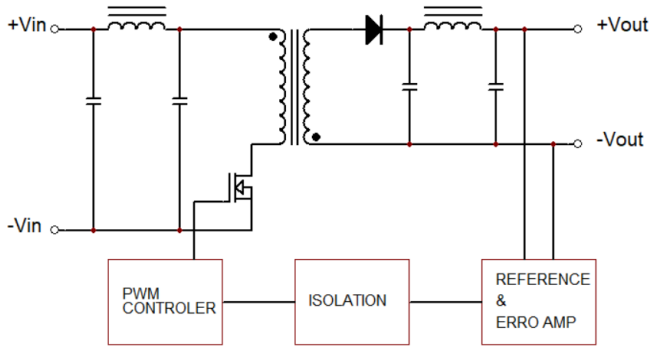
Tolerance .X or .XX= ±0.5mm

REMOTE ON/OFF CONTROL

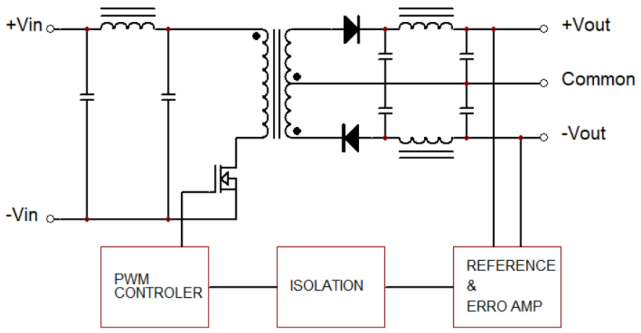
Remote On/Off Control			
Control Input	PIN3	Control Common	PIN1
Control Voltage		Converter Shutdown Idle Current	10mA
ON	> 2.5 ~ 30VDC or Open Circuit	Logic Compatibility	CMOS or Open Collector TTL
OFF	<1.0 VDC or Jumper to PIN1		

SIMPLIFIED SCHEMATIC

Single output



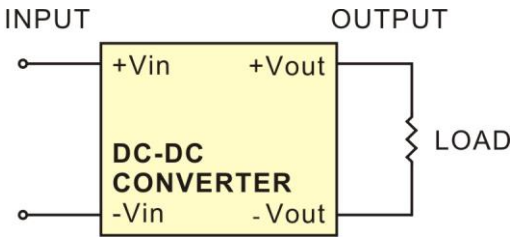
Dual output



TYPICAL APPLICATIONS

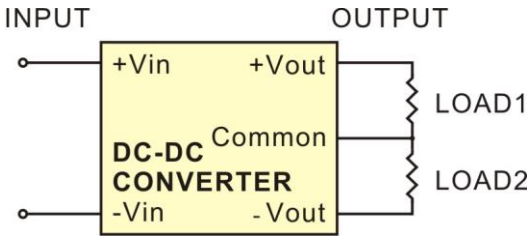
Single output

FIXED VOLTAGE OUTPUT

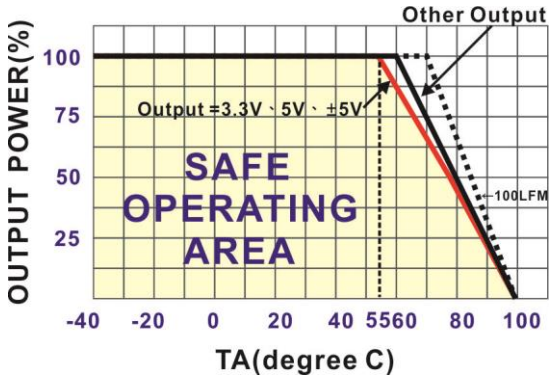


Dual output

FIXED VOLTAGE OUTPUT

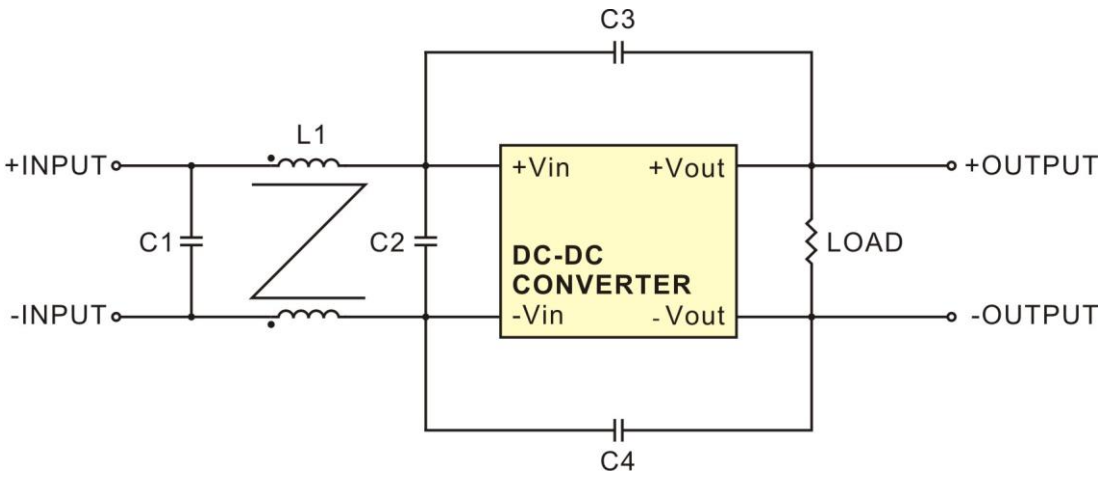


DERATING CURVE



■ RECOMMENDED FILTER FOR EN55032

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



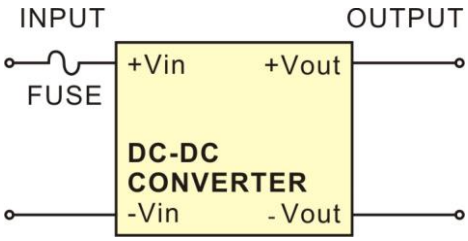
MODEL NUMBER	C1	C2	C3	C4	L1
PDWX-24XXE	X	2.2uF/100V MLCC	102/3KV	102/3KV	X

Note: All of capacitors are ceramic capacitors.

■ INPUT FUSE SELECTION GUIDE

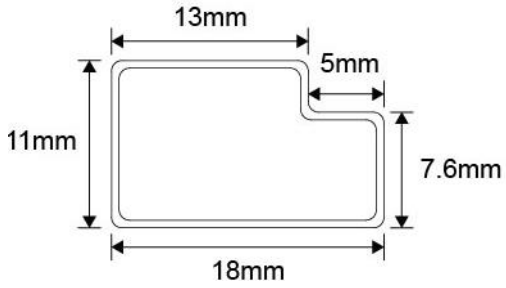
9-75V Input Voltage (Vdc)

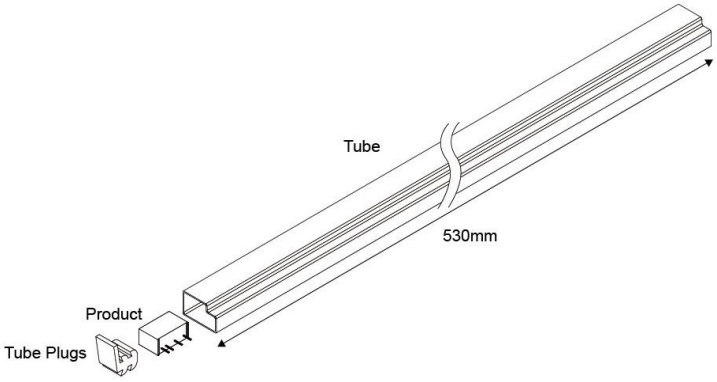
2000mA Slow-Blow Type



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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