Medical Comm

Single and Dual Output 6W DC-DC Converters

Features	Benefits
• 60601-1 approval	• Easier system approval
• I/O isolation 5kVAC, 2MOPP	• Patient protection at 250VAC rms working voltage
• 0.25μA low leakage	• Wide range of medical applications
• 4:1 Wide input range	• Less parts to inventory



Specification

Model	PXC-M06 (W)	
Rated input voltage range	24V nominal: 9-36VDC, 48V nominal: 18-75VDC	
Input surge voltage (max 3 seconds)	24V Nom : 50VDC	48V Nom: 100VDC
Switching frequency	250kHz	
Maximum input current (no load)	See Table	
Fusing	No internal fuse	
Max output power (W)	6	
Voltage accuracy	Single/Dual ± 1%	
Voltage adjustment (Note 1)	Single output 3.3V, 5V & 12V: ± 10%,15V & 24V: -10%/+20% Dual output ±5V, ±12V & ±15V: ±10%	
Line regulation (LL to HL at full load)	Single output ± 0.2%, Dual output ± 0.5%	
Ripple and noise (Note 7)	Measured with a 20MHz bandwidth - see table	
Start up time (Nominal Vin and constant resistive load)	Power on: 30ms, Remote ON/OFF: 30ms	
Start up voltage	24Vin(nom) 9V, 48V(nom) 18V	
Shutdown voltage	24Vin(nom) 8V, 48V(nom) 16V	
Remote on/off (option) (Note 1 & Note 6)	DC ON: OPEN or 0 to 1.2VDC DC OFF: 2.2 to 12VDC	
Efficiency	See Table	
Over current protection, factory set	Hiccup, 150% of rated full load	
Short circuit protection (Note 2)	Continuous, auto recovery	
Overvoltage protection	3.3V output 5V output 12V output 15V output 24V output 5V/5V output 12V/12V output 15V/15V output	3.7 to 5V 5.6 to 7.0V 13.5 to 16V 18.3 to 22.0V 29.1 to 34.5V 5.6 to 7.0V 13.5 to 18.2V 17.0 to 22.0V
Operating temperature	-40°C ~ +88°C (without derating), +88°C ~ +105°C (with derating - see curve)	
Storage temperature	-55°C ~ +125°C	
Thermal shock	MIL-STD-810F	
Relative humidity (non condensing)	5% to 95% RH	
Transient response (25% step load change)	250μS	
Isolation voltage (1 minute) (Note8)	5kVAC	
Isolation capacitance (max)	17pF	
MTBF MIL-HDBK-217F (Note 3)	644,400 hrs	
Vibration	MIL-STD-810F	
Conducted and radiated emissions (Note 4)	EN55011, EN55032, Class A and FCC part 18	
Immunity (Note 5)	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6: Perf. Criteria A	
Safety	IEC60601-1, ANSI/AAMI ES60601-1, EN60601-1, CE Mark	
Size (H x W x D)	10.2 x 20.3 x 31.8 mm	
Weight	14g	
Connector	PCB mount	
Cooling	Convection	
Warranty yrs	5	

Notes: See page 2

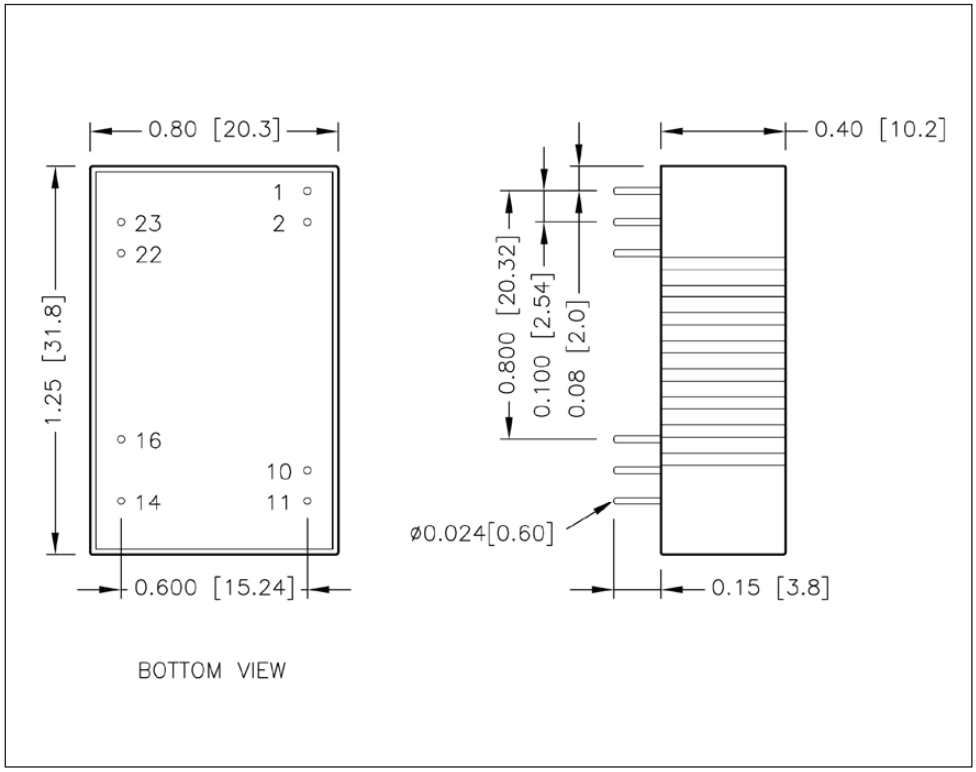
Model Selector

Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current Full Load (mA)	Output [7] Ripple & Noise (mV)	Input Current No Load mA	Efficiency % [2]	Maximum Capacitive Load [2]
PXC-M06-24WS3P3	9 ~ 36	3.3	1800	30	6	83	2100
PXC-M06-24WS05	9 ~ 36	5	1200	30	6	86	1500
PXC-M06-24WS12	9 ~ 36	12	500	40	6	89	260
PXC-M06-24WS15	9 ~ 36	15	400	40	6	89	210
PXC-M06-24WS24	9 ~ 36	24	250	50	6	88.5	75
PXC-M06-24WD05	9 ~ 36	±5	±600	30	6	85	± 860
PXC-M06-24WD12	9 ~ 36	±12	±250	40	6	88.5	± 150
PXC-M06-24WD15	9 ~ 36	±15	±200	40	6	88.5	± 110
PXC-M06-48WS3P3	18 ~ 75	3.3	1800	30	4	82.5	2100
PXC-M06-48WS05	18 ~ 75	5	1200	30	4	86.5	1500
PXC-M06-48WS12	18 ~ 75	12	500	40	4	88	260
PXC-M06-48WS15	18 ~ 75	15	400	40	4	88.5	210
PXC-M06-48WS24	18 ~ 75	24	250	50	4	88	75
PXC-M06-48WD05	18 ~ 75	±5	±600	30	4	85	± 860
PXC-M06-48WD12	18 ~ 75	±12	±250	40	4	88	± 150
PXC-M06-48WD15	18 ~ 75	±15	±200	40	4	87	± 110

Notes

1. Not available for A type pin configuration
2. Typical value at nominal input voltage and full load.
3. MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load (Ground Benign, controlled environment).
4. Built in Class A filter. Class B can be achieved with the addition of exterenal components for further information contact your local TDK-Lambda sales office
5. Meeting EN61000-4-4 and 61000-4-5 requires and additional input electrolytic capacitor: 5V input -1000µF/25V, 12V & 24V input - 470µF/50V and 48V input - 330µF/100V
6. The ON/OFF control pin voltage is referenced to -Vin.The ctrl pin input current is <1mA.Remote off input current is typically 2.5mA
7. For R & N, measure the 24V output with a 4.7µF/50V X7R MLCC. All other outputs use a 10µF25V X7R MLCC. Nominal input, full load at +25°C
8. Reinforced insulation 8mm at 250VAC

Outline Drawing PXC-M06 (W)



Pin Assignment PXC-M06 (W)

PIN	Single	Dual
1	CtrlL (Option) / No pin*	CtrlL (Option) / No pin*
2	-Vin	-Vin
10	Trim (option) / No Pin*	Trim (option) / No Pin*
11	No Pin / NC **	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

NOTES:

* If the Ctrl or Trim option is not selected there will be no pin fitted in the corresponding pin number position.

** Pin 11 is "No pin" for PXC-M06-xxWSxxx-T, PXC-M06-xxWSxxx-PT
Pin 11 is "NC" for: PXC-M06-xxWSxxx, PXC-M06-xxWSxxx-P

Options

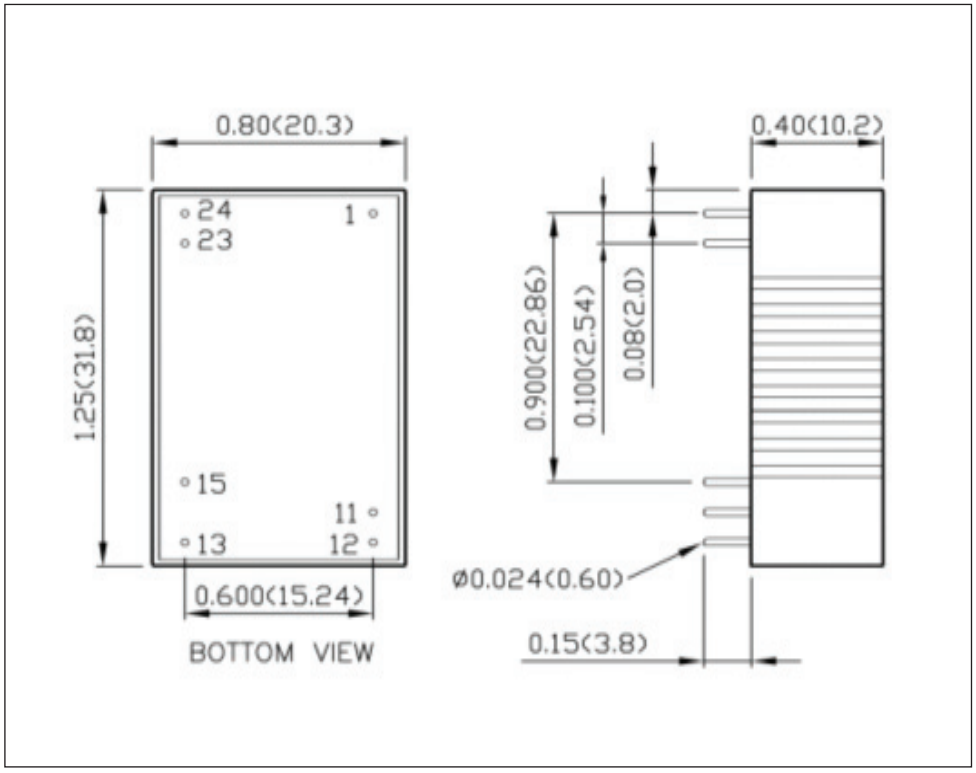
Suffix	Description
P	Positive Logic
T	Trim
PT	Positive Logic & Trim

Standard part is no suffix. Add P, T, or PT as required

External Output Trimming

The output of the PXC-M06 (W) can be adjusted by connecting an external resistor. **See application note on the website.**

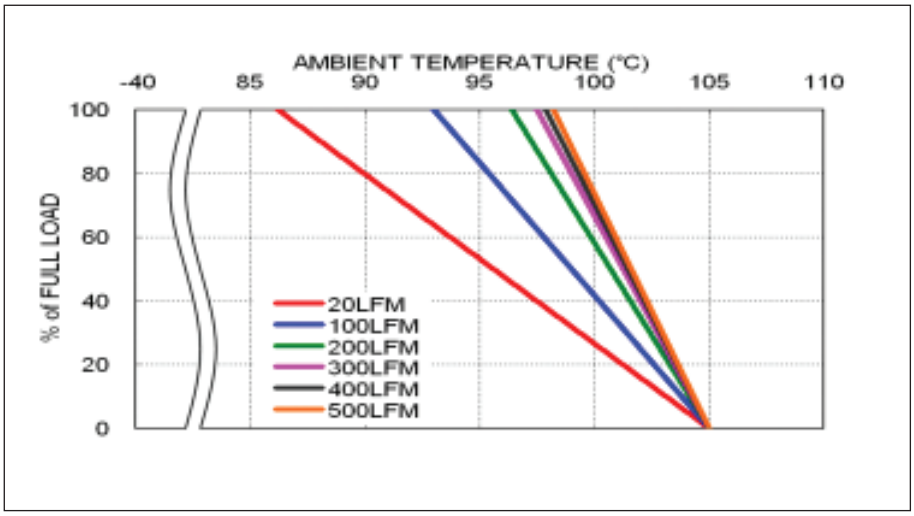
Outline Drawing PXC-M06 (W) A-type



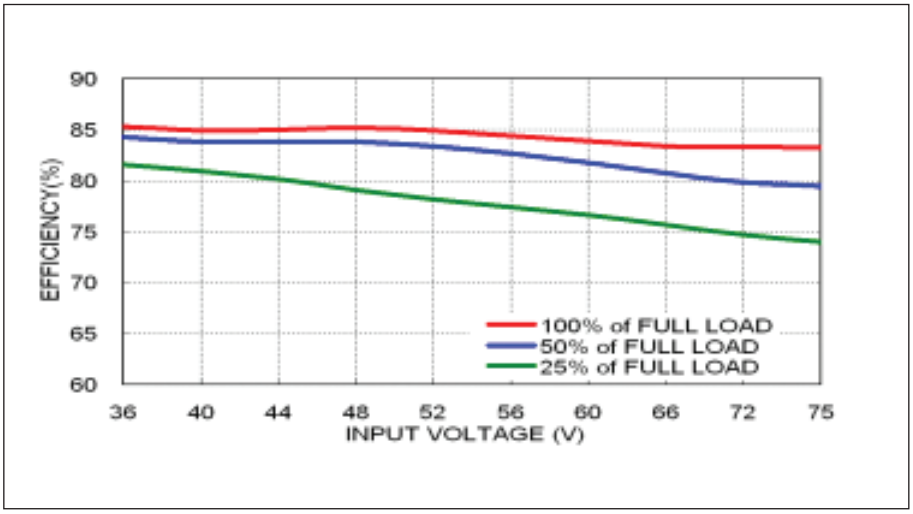
Pin Assignment PXC-M06 (W) A-type

PIN	Single	Dual
1	+Vin	+Vin
11	No Pin	Common
12	-Vout	No Pin
13	+Vout	-Vout
15	No Pin	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

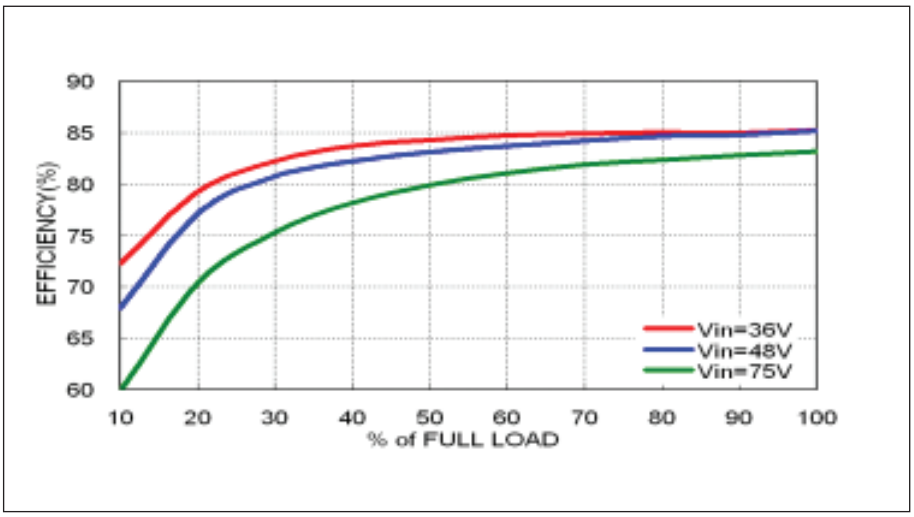
PXC-M06-48WS05A Derating curve



PXC-M06-48WS05A Efficiency Vs Input Voltage



PXC-M06-48WS05A Efficiency Vs Output Voltage



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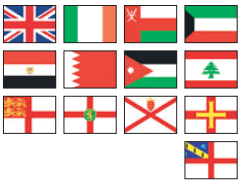
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