

LWM and WF SERIES

Single output

Recommended for new design-ins

- Ultra wide input range
- Six sided shield
- Economically priced
- Fixed 100kHz switching frequency (WF series)
- Efficiencies to 80%



2 YEAR WARRANTY

The WF12S05/1000Z is an un-isolated 5 Watt DC/DC converter. An ultra wide input voltage range facilitates operation from 12VDC and 24VDC battery sources. Its relatively low cost makes the WF a particularly cost effective solution for low power applications where I/O isolation is not required. The WF features external output voltage trim of $\pm 10\%$, regulation less than 1%, over voltage protection and a fixed switching frequency of 100kHz. The result is a 75% efficient converter

in a package measuring 2 x 2 x 0.38 inches.

The LWM12S05/5000XC has an output power capability of 25 Watts and is supplied in a package measuring just 2.56 x 3 x 0.83 inches. Key features include an ultra wide 7 to 40VDC input voltage range, fixed 75kHz switching frequency, remote on/off, output sense and output trim to $\pm 10\%$ of nominal value.

SPECIFICATION

ALL SPECIFICATIONS ARE TYPICAL AT NOMINAL INPUT, FULL LOAD AND 25°C UNLESS OTHERWISE STATED

OUTPUT SPECIFICATIONS		
Voltage adjustability	LWM and WF	$\pm 10\%$
Remote sense	LWM WF	Yes No
Line regulation	LWM and WF	$\pm 0.5\%$, max.
Load regulation	LWM and WF, FL-NL	see table
Ripple and noise	LWM	60mV pk-pk, 15mV rms, max.
5Hz to 20MHZ	WF	40mV pk-pk, 10mV rms, max.
Transient response	LWM, 25% step change WF, FL-fil or fil-FL	300 μ s recovery to within 1.0% 25mV peak, 50 μ s recovery
Temperature coefficient	LWM WF	$\pm 0.02\%/^{\circ}\text{C}$, max. $\pm 0.10\%/^{\circ}\text{C}$, max.
Overvoltage protection	+5V output	6.8VDC $\pm 10\%$
Short circuit protection	Output to common	Continuous automatic recovery
INPUT SPECIFICATIONS		
Input voltage range	LWM WF	7 to 40VDC 7 to 32VDC
Input filter See Note 6	LWM WF	Pi Network Low ESR cap
Remote ON/OFF Logic compatibility EC-ON EC-OFF Control input resistance	On LWM only CMOS or open collector TTL Min. 4.2VDC or open circuit 3.5VDC 100k Ω	

GENERAL SPECIFICATIONS		
Efficiency	LWM WF	80%, min. 75%, min.
Switching frequency	LWM - fixed WF - fixed	75kHz typ. 100kHz typ.
Case material	Black coated copper with non-conductive base	
Material flammability	UL94V-0	
Weight	LWM WF	213g (7.5oz) 99g (3.5oz)
MTBF	MIL-HDBK-217C	620,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Temperature	Operating amb. Non-operating Case Derating Cooling	-25°C to +71°C -55°C to +105°C +95°C max. None required Free air convection
Relative humidity	Non-condensing	5% to 95% RH

5 to 25 Watt Un-isolated DC/DC regulators

INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT ⁽¹⁾		EFFICIENCY	REGULATION ⁽²⁾		MODEL NUMBER
			NO LOAD	FULL LOAD		LINE ⁽³⁾	LOAD ⁽⁴⁾	
7-40VDC	5VDC	3A	20mA	1570mA	80%	±0.5%	±0.5%	LWM12S05/3000XA
7-40VDC	5VDC	5A	20mA	2600mA	80%	±0.5%	±0.5%	LWM12S05/5000XC
7-32VDC	5VDC	1A	16mA	555mA	75%	±0.5%	±1.0%	WF12S05/1000Z

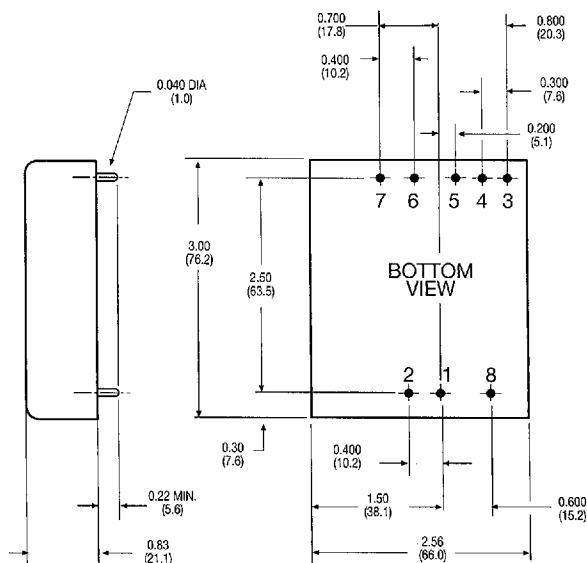
Notes

- 1 Nominal input 12VDC.
- 2 Maximum.
- 3 Measured from high line to low line.
- 4 Measured from full load to no load.
- 5 Standard specifications are conservative and can be optimized for specific applications. In particular, converter start-up at lower than specified temperature and output voltage adjustment are all relatively simple modifications to the standard product. Consult factory for details.
- 6 Fixed frequency design provides for easier input filtering and better noise performance.
- 7 The XA and XC case mechanical specifications are identical except for height. The XA height is 0.37", while the XC height is 0.83".
- 8 For XA and XC, the - input is connected to the case.

Tolerance .xx = ±0.04
.xxx = ±0.005

PIN CONNECTIONS			
Pin	WF (CASE Z)	LWM (CASE XC) ⁽⁸⁾	LWM (CASE XA) ⁽⁸⁾
1	+ Input	+ Input	+ Input
2	- Input	- Input	- Input
3	+ Output	+ Sense	Trim Down
4	Output Trim	Output Trim	Output Trim
5	- Output	- Sense	Trim Up
6	No Pin	+ Output	+ Output
7	No Pin	- Output	- Output
8	No Pin	Remote On/Off	No Pin

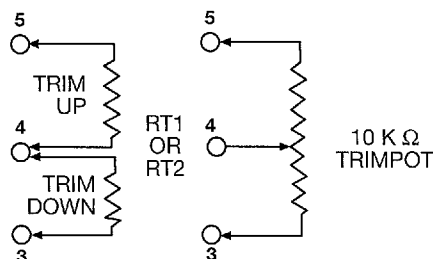
XA⁽⁷⁾, XC CASE



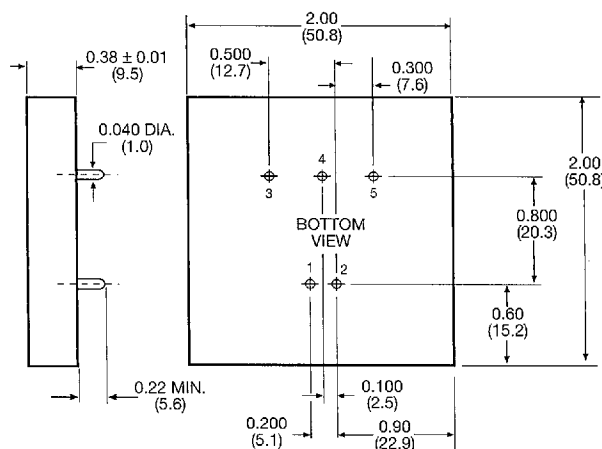
ALL DIMENSIONS INCHES (mm)

EXTERNAL OUTPUT TRIMMING

Output may optionally be externally trimmed ±10% with a fixed resistor or an external trimpot as shown.



CASE Z



ALL DIMENSIONS IN INCHES (mm)