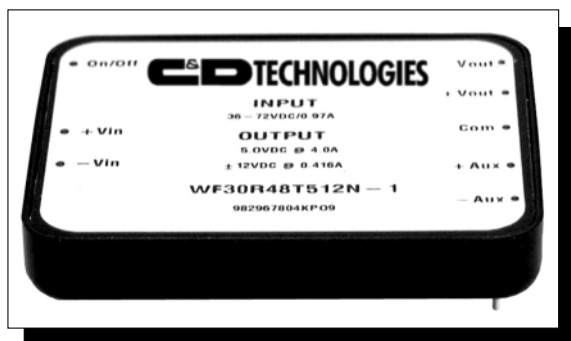


C&D TECHNOLOGIES

Product Data Sheet

30 WATT REGULATED, 4:1 WIDE INPUT RANGE, HIGH DENSITY DC/DC CONVERTER

WF30R



FEATURES

- 9-36 Vdc & 18-75 Vdc INPUT RANGES
- INDUSTRY STANDARD PINOUTS
- INPUT AND OUTPUT FILTERING
- SINGLE AND TRIPLE OUTPUTS
- EXTENDED TEMPERATURE RANGE:
-40°C TO +100°C BASEPLATE TEMPERATURE
- REMOTE ON/OFF FUNCTION
- INPUT REVERSE VOLTAGE PROTECTION
- FIXED FREQUENCY OPERATION
- EXCELLENT CROSS-REGULATION
- SIX-SIDED SHIELDING
- SHORT CIRCUIT PROTECTION
- EN60950, UL 1950 SAFETY APPROVALS PENDING
- EMC EN55022 LEVEL A

APPLICATIONS

- TELECOMMUNICATION APPLICATIONS
- BATTERY POWERED SYSTEMS
- PROCESS CONTROL EQUIPMENT
- TRANSPORTATION EQUIPMENT
- DISTRIBUTED POWER SYSTEMS

DESCRIPTION

The WF30R Series is a family of high performance DC/DC converters. The unit is housed in a space-saving shell and combines low cost with high performance across all line and load conditions. A $\pm 10\%$ output trim feature is provided, allowing the user to compensate for long line lengths. The WF30R Series is assembled by a fully automated process using surface mount components for increased reliability. The converter's rugged, low-profile, aluminium housing provides excellent EMI/RFI shielding. Other features include:

- Full Regulation Down to Zero Load
- Under Voltage Lock-Out, Auto-Start
- Internal Temperature Shutdown, Auto-Reset
- Soft Start
- Remote On/Off (Available in Positive or Negative Logic)
- Remote Sense (Available in Single Outputs)
- Over Current Protection
- Output Over Voltage Protection
- Output Voltage Adjust

AGENCY APPROVALS PENDING



Internet: <http://www.cdpowerelectronics.com>

Power Electronics Division, United States
3400 E Britannia Drive, Tucson, Arizona 85706
Phone: 800.547.2537 Fax: 520.770.9369

Power Electronics Division, Europe
C&D Technologies (Power Electronics) Ltd.
132 Shannon Industrial Estate, Shannon, Co. Clare, Ireland
Tel: +353.61.474.133 Fax: +353.61.474.141

ELECTRICAL SPECIFICATIONS

Specifications typical at $T_A=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise stated.

MODEL	NOMINAL INPUT VOLTAGE (V _{DC})	RATED OUTPUT OUTPUT (V _{DC})	MIN LOAD (A)	OUTPUT CURRENT NOM LOAD (A)	MAX LOAD (A)	INPUT CURRENT NOM LOAD (A)	EFFICIENCY %
WF30R24S03	24	3.3	0.0	9.0	11.0	1.488	84
WF30R24S05	24	5.0	0.0	6.0	7.5	1.488	84
WF30R24S12	24	12.0	0.0	2.5	3.0	1.471	85
WF30R24S15	24	15.0	0.0	2.0	2.4	1.471	85
WF30R24T312	24	3.3 ± 12	0.0	6.0 ± 0.417	7.5 ± 0.521	1.506	83
WF30R24T315	24	3.3 ± 15	0.0	6.0 ± 0.333	7.5 ± 0.416	1.506	83
WF30R24T512	24	5 ± 12	0.0	4.0 ± 0.417	5.0 ± 0.521	1.488	84
WF30R24T515	24	5 ± 15	0.0	4.0 ± 0.333	5.0 ± 0.416	1.488	84
WF30R48S03	48	3.3	0.0	9.0	11.0	0.727	86
WF30R48S05	48	5.0	0.0	6.0	7.5	0.727	86
WF30R48S12	48	12.0	0.0	2.5	3.0	0.718	87
WF30R48S15	48	15.0	0.0	2.0	2.4	0.718	87
WF30R48T312	48	3.3 ± 12	0.0	6.0 ± 0.417	7.5 ± 0.521	0.735	85
WF30R48T315	48	3.3 ± 15	0.0	6.0 ± 0.333	7.5 ± 0.521	0.735	85
WF30R48T512	48	5 ± 12	0.0	4.0 ± 0.417	5.0 ± 0.521	0.727	86
WF30R48T515	48	5 ± 15	0.0	4.0 ± 0.333	5.0 ± 0.416	0.727	86

COMMON SPECIFICATIONS

Specifications typical at $T_A=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise stated.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Voltage Range	WF30R24xyzz	9	24	36	V _{DC}
Reflected Ripple Current	WF30R48xyzz	18	48	75	V _{DC} mA
INPUT CONTROL					
Temperature Shutdown			107		°C
Temperature Hysteresis			5		°C
Quiescent Standby Current	Current Into + V _{IN}		8	10	mA
Undervoltage Shutdown	WF30R24xyzz		7.5		V
	WF30R48xyzz		16.5		V
Undervoltage Hysteresis	WF30R24xyzz		1		V
	WF30R48xyzz		1		V
ISOLATION					
Rated Voltage		1500			V _{DC}
Test Voltage	60Hz, 10 Seconds	1500			V _{pk}
Resistance			10		GΩ
Capacitance			1000		pF
Leakage Current	V _{ISO} =240V _{AC} , 60Hz			100	μA _{rms}
OUTPUT					
Rated Power				30	W
Voltage Setpoint Accuracy				±1.5	%
Single & Main Outputs				±3.0	%
Aux. Outputs, Triples					%
Temperature Coefficient			±0.2		%/°C
Line Regulation					%
Single & Main Outputs	High Line to Low Line			±0.1	%
Aux. Outputs, Triples				±0.7	%
Load Regulation					%
Single & Main Outputs	Min Load to Nom. Load			±0.4	%
Aux. Outputs, Triples	Mn Load to Nom. Load			±0.6	%
Ripple & Noise					mV _{pk-pk}
Single & Main Outputs	BW = 5Hz to 20MHz		50	80	mV _{pk-pk}
Aux. Outputs, Triples	BW = 5Hz to 20MHz		80	120	mV _{pk-pk}
Output Adjust Range	All Outputs		±10	±12	%
Short Circuit and Overcurrent Protection					A
Single & Main Output				7.5	A
GENERAL					
Switching Frequency			300		KHz
MTTF per ML-HDBK-217	Circuit Stress Method		1,500,000		Hr
Ground Benign	TA = +25° Unmodified Database		85		g
Package Weight					
TEMPERATURE					
Operation/Specification	Case Temperature	-40		+100	°C
Storage	Case Temperature	-55		+110	°C
Shutdown Temperature	Case Temperature	+105		+110	°C
Thermal Impedance, case-ambient			7		°C/W

ORDERING INFORMATION

Device Family	WF30R	xyzz	-
Indicated 30 Watt Regulated DC/DC Converter			
Model Number			
Selected from Table of Electrical Characteristics			
Where:			
xx = Input Voltage			
y = Number of Outputs (Single "S", Triple "T")			
zz = Output Voltage			
Shell Connection			
(C,F,M,N,P) refer to NOTES.			
Remote On/Off Logic			
Positive Logic - No Number			
Negative Logic - 1			

NOTES: A "C" designator indicates the aluminum shell is connected internally to the common output return pin.

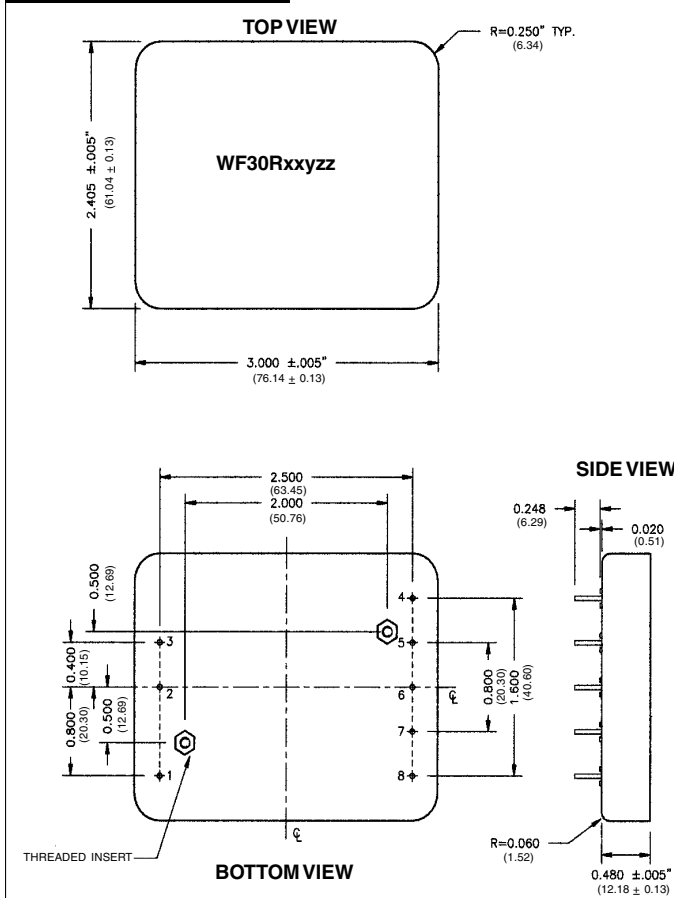
An "F" designator indicates the aluminum shell is floating and is not connected to any part of the converter circuitry.

An "M" designator indicates the aluminum shell is connected internally to the main output return pin.

An "N" designator indicates the aluminum shell is connected internally to the negative input voltage pin.

A "P" designator indicates the aluminum shell is connected internally to the positive input voltage pin.

MECHANICAL



PIN CONNECTIONS		
PIN #	SINGLE	TRIPLE
1	Remote On/Off	Remote On/Off
2	+Vin	+Vin
3	-Vin	-Vin
4	-Sense	-Aux
5	+Sense	+Aux
6	Com	Com
7	+Vout	+Vout
8	Adj	Adj

NOTES:

All dimensions are in inches (millimeters).

Pin placement tolerance: ±0.015" (±0.2mm)

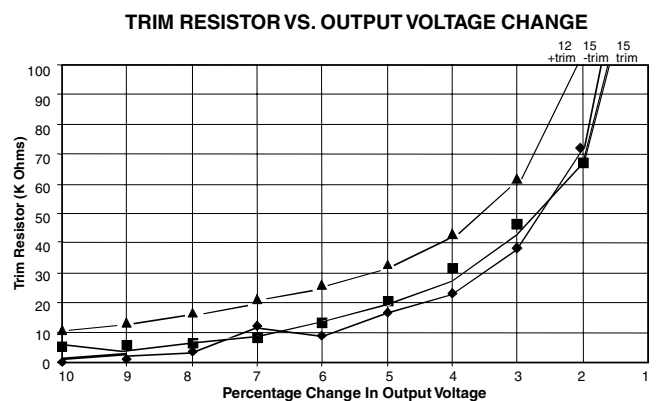
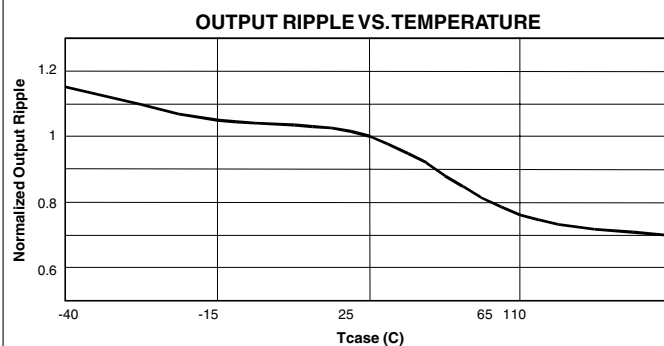
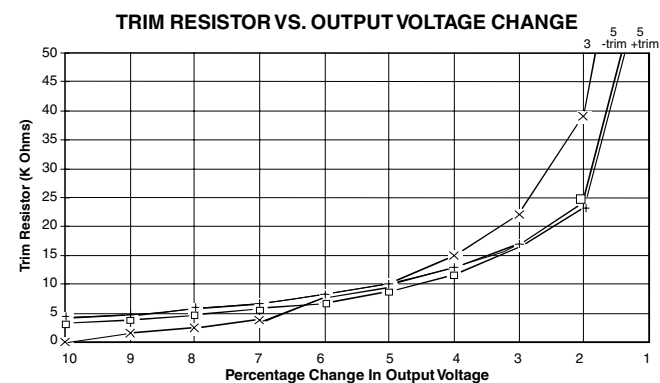
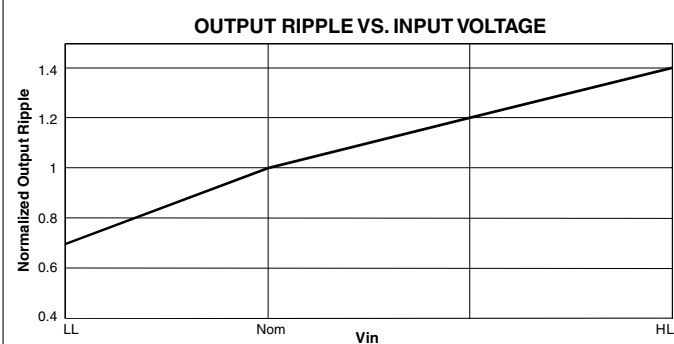
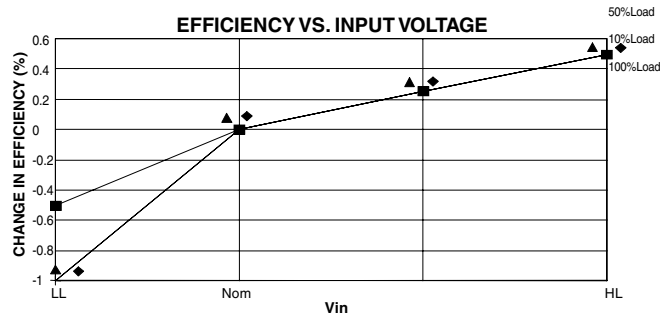
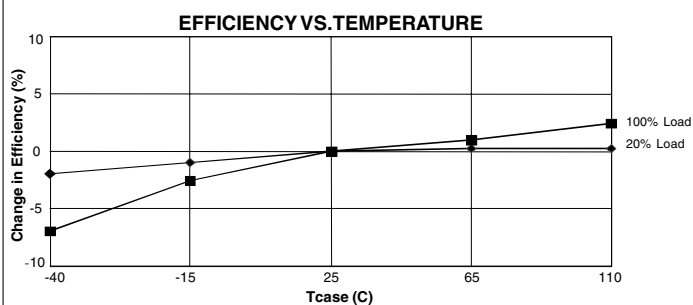
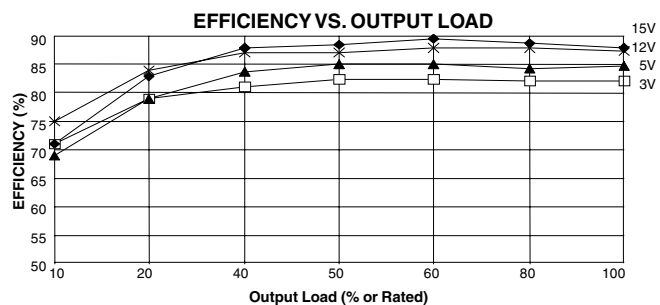
Threaded insert (hex) for fixing to PCB.

Marked with specific model ordered, date, code, job code.

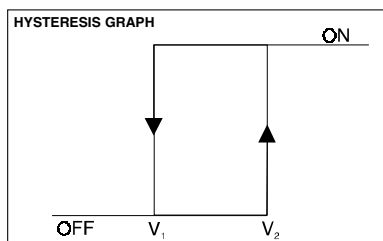
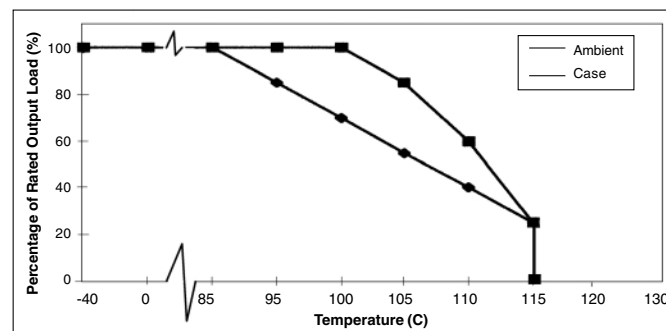
MATERIAL: Units are enclosed in an aluminum case. Lead material is brass with a solder plated surface to allow ease of solderability.

The information provided herein is believed to be reliable; however, C&D TECHNOLOGIES assumes no responsibility for inaccuracies or omissions. C&D TECHNOLOGIES assumes no responsibility for the use of this information, and all use of such information shall be entirely at the user's own risk. Prices and specifications are subject to change without notice. No patent rights or licenses to any of the circuits described herein are implied or granted to any third party. C&D TECHNOLOGIES does not authorize or warrant any C&D TECHNOLOGIES product for use in life support devices/systems or in aircraft control applications.

PERFORMANCE GRAPHS



THERMAL DERATING CURVE



Undervoltage Lockout Threshold Voltages

Nominal Input Voltage Range	Shutdown Low Voltage (V1) OFF	Shutdown High Voltage (V2) ON
24	7.5	8.5
48	16.5	17.5

Specifications typical at TA=25°C, rated output current.