

OBSOLETE PRODUCT
Contact factory for replacement model

WFC02RC

2 WATT REGULATED WIDE INPUT RANGE DC/ DC CONVERTER



For full details go to
www.murata-ps.com/rohs

ISO9001
CERTIFIED

DESCRIPTION

The WFC02RC is a family of high performance DC/DC converters that offers regulated outputs over input voltage ranges of 9-36V and 18-72V while offering a wide operating temperature range of -40°C to +85°C without derating.

Each WFC02RC contains input filtering to minimize conducted noise. The design utilizes surface mounted components, including magnetics, to provide enhanced reliability.

The converter is designed to meet the requirements of EN60950 with the "L" pinout having 1,500 VDC isolation. All WFC02RC converters are designed to withstand input voltage transients to 200% of nominal input voltage. An additional feature is the ability of the WFC02RC to drive high capacitive loads.

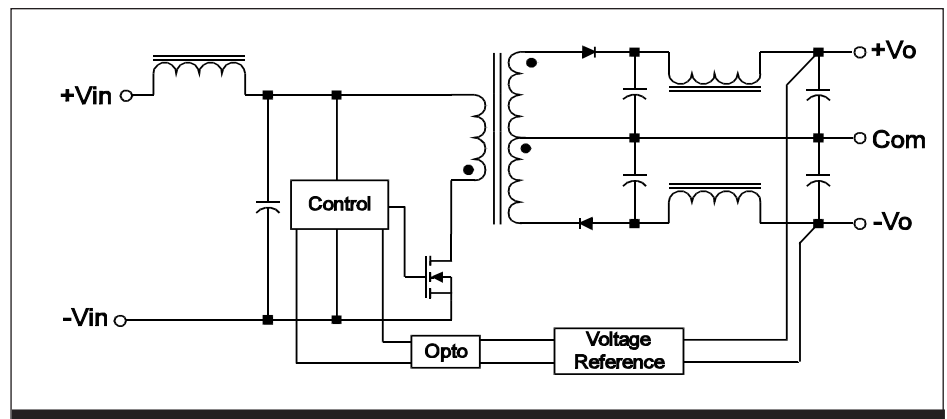
FEATURES

- RoHS Compliant
- Low Cost, High Performance
- Small DIP Package
- Full Power to +85°C
- Extended Temperature Range: -40°C to +85°C
- Industry Standard Pinout
- Full Short Circuit Protection
- High Capacitive Loading Capability
- Protected Against High Input Voltage

APPLICATIONS

- Telecommunications
- Battery Powered Systems
- Portable Instruments
- Process Control Equipment
- Transportation Equipment
- Distributed Power Systems

SIMPLIFIED CIRCUIT DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Output Short Circuit Protection-----Continuous
Internal Power Dissipation-----1.5W
Max Case Temperature-----+100°C

ELECTRICAL SPECIFICATIONS

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

Model	Nominal Input Voltage (Volts)	Rated Output Voltage (Volts)	Output Current (mA)		Max Input Current (mA) Rated Load	Max Capacitive Load (μF)	Efficiency %
			Min Load	Rated Load			
WFC02R24S05LC	24	5.0	40	400	300	400	77
WFC02R24S12LC	24	12.0	16	167	306	167	76
WFC02R24S15LC	24	15.0	12	125	306	125	77
WFC02R24D05LC	24	± 5.0	± 20	± 200	315	± 200	75
WFC02R24D12LC	24	± 12.0	± 8	± 80	315	± 80	76
WFC02R24D15LC	24	± 15.0	± 7	± 67	315	± 67	76
WFC02R48S05LC	48	5.0	40	400	152	400	74
WFC02R48S12LC	48	12.0	16	167	152	167	74
WFC02R48S15LC	48	15.0	12	125	152	125	76
WFC02R48D05LC	48	± 5.0	± 20	± 200	156	± 200	74
WFC02R48D12LC	48	± 12.0	± 8	± 80	156	± 80	76
WFC02R48D15LC	48	± 15.0	± 7	± 67	155	± 67	77

ORDERING INFORMATION

Device Family	WFC02R	xx	yy	zz	L	C
Model Number						
Indicates wide input power 2W regulated DC/DC						
Selected from Table of Electrical Characteristics						
xx=input voltage						
y=number of outputs: S=single, D=dual						
zz=output voltage						
Pinout						
RoHS Compliant						

COMMON SPECIFICATIONS

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

Input					
Voltage Range		9	24	36	Vdc
		18	48	72	Vdc
Reflected Ripple Current			50		mA p-p
Isolation					
Safety Standards	Designed to meet requirements of				
	EN60950, EN41003 & UL1950				
Rated Voltage	"L" Pinout	1500			Vdc
Test Voltage—60 Hz, 10 secs	"L" Pinout	1500			Vpk
Resistance			10		G Ω
Capacitance			220		pF
Leakage Current	$V_{iso}=240\text{Vac}$, 60 Hz		30		μA_{rms}
Output					
Rated Power				2	W
Voltage Setpoint Accuracy				± 3.0	%
Temperature Coefficient			± 0.02		%/ $^{\circ}\text{C}$
Line Regulation-singles	Low line to high line			$\pm 1.5\%$	%
Line Regulation-duals	Low line to high line			$\pm 1.5\%$	%
Load Regulation-singles	Min load to rated load			$\pm 2\%$	%
Load Regulation-duals	Min load to rated load			$\pm 2\%$	%
Ripple & Noise	BW=5 Hz to 20 MHz		50	100	mV p-p
General					
MTTF per MIL-HDBK-217, Rev F	$T_A=25^{\circ}$		1,000,000		Hours
Moisture Sensitivity Level (MSL)	Per IPC/JEDEC J-STD-020		2		
Temperature					
Operation		-40		+85	$^{\circ}\text{C}$
Storage		-55		+125	$^{\circ}\text{C}$

THROUGH-HOLE SOLDERING INFORMATION

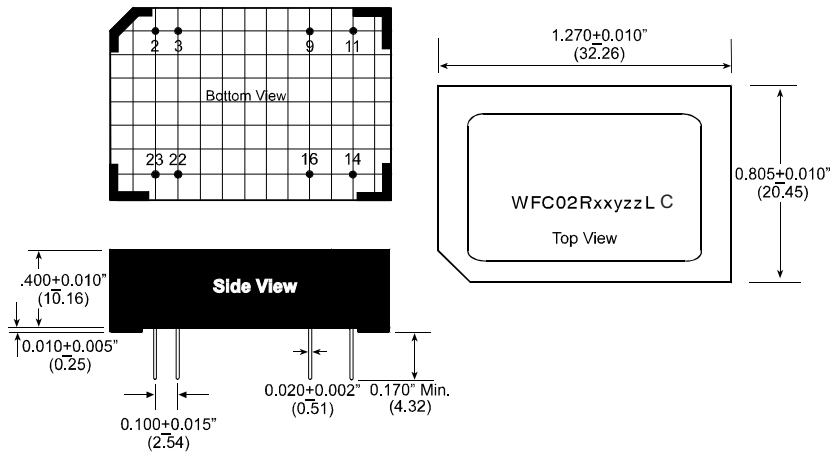
These devices are intended for wave soldering or manual soldering.

They are not intended to be subject to surface mount processes under any circumstances.

The normal wave soldering process can be used with these devices where the device is subjected to a maximum wave temperature of 260°C for a period of no more than 10 seconds. Within this time and temperature range, the integrity of the device's plastic body will not be compromised and internal temperatures within the converter will not exceed 175°C . Care should be taken to control manual soldering limits identical to that of wave soldering.

MECHANICAL SPECIFICATIONS

PINOUT “L”



Pin Number	Pin Function	
	Singles	Duals
2	-Vin	-Vin
3	-Vin	-Vin
9	No connection	Common
11	No connection	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

TECHNICAL INFORMATION

Notes:

- All dimensions in inches and (millimeters).
- Units are encapsulated with a low thermal resistance molding compound which has excellent chemical resistance, wide operating temperature range and good electrical properties under high humidity environments. The encapsulant and outer shell have UL94V-0 ratings. Lead material is brass; pin finish is 100-300 microinches of matte tin over a nickel barrier layer of 40-80 microinches.
- GRID: 0.100 inches, (2.54 mm).
- Pin Placement Tolerance: ±0.015", (±.381 mm).



Murata Power Solutions, Inc.

11 Cabot Boulevard, Mansfield, MA 02048-1151 U.S.A.

Tel: (508) 339-3000 (800) 233-2765 Fax: (508) 339-6356

www.murata-ps.com email: sales@murata-ps.com ISO 9001 & ISO 14001 REGISTERED

Murata Power Solutions, Inc. makes no representation that the use of its products in the circuits described herein, or the use of other technical information contained herein, will not infringe upon existing or future patent rights. The descriptions contained herein do not imply the granting of licenses to make, use, or sell equipment constructed in accordance therewith. Specifications are subject to change without notice.
© 2009 Murata Power Solutions, Inc.

USA: Mansfield (MA), Tel: (508) 339 3000, email: sales@murata-ps.com

Canada: Toronto, Tel: (866) 740 1232, email: toronto@murata-ps.com

UK: Milton Keynes, Tel: +44 (0)1908 615232, email: mk@murata-ps.com

France: Montigny Le Bretonneux, Tel: +33 (0)1 34 60 01 01, email: france@murata-ps.com

Germany: München, Tel: +49 (0)89-544334-0, email: ped.munich@murata-ps.com

Japan: Tokyo, Tel: 3-3779-1031, email: sales_tokyo@murata-ps.com

Osaka, Tel: 6-6354-2025, email: sales_osaka@murata-ps.com

China: Shanghai, Tel: +86 215 027 3678, email: shanghai@murata-ps.com

Guangzhou, Tel: +86 208 221 8066, email: guangzhou@murata-ps.com

Singapore: Parkway Centre, Tel: +65 6348 9096, email: singapore@murata-ps.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Murata:

[WFC02R24S05E](#) [WFC02R24S05L](#) [WFC02R48S15L](#) [WFC02R48S15E](#) [WFC02R48S05L](#) [WFC02R48S05E](#)
[WFC02R48D12E](#) [WFC02R48D12L](#) [WFC02R24D05E](#) [WFC02R24D05L](#) [WFC02R48D05E](#) [WFC02R48D05L](#)
[WFC02R48D15L](#) [WFC02R48D15E](#) [WFC02R24S12L](#) [WFC02R24S12E](#) [WFC02R24S15E](#) [WFC02R24S15L](#)
[WFC02R24D12E](#) [WFC02R24D12L](#) [WFC02R24D15L](#) [WFC02R24D15E](#) [WFC02R48S12E](#) [WFC02R48S12L](#)
[WFC02R24S05LC](#) [WFC02R24S12LC](#) [WFC02R48S05LC](#) [WFC02R48S12LC](#)