



FEATURES

- RoHS compliant
- Small DIP package
- Full power to + 85°C
- Industry standard pinout
- High capacitive loading capability

DESCRIPTION

The WPC03RC is a family of DC/DC converters that offers regulated outputs over input voltage ranges of 18-36V and 34-72V while offering a wide operating temperature range of -40°C to +85°C without derating.

Each WPC03RC contains input filtering to minimize conducted noise.

WPC03

3W Regulated Wide Input DC/DC Converter

SELECTION GUIDE

Order Code	Input Voltage	Output Voltage	Output Current		Max. Capacitive Load	Efficiency
	Nom.		Min. Load	Rated Load		
	V		mA	mA	μF	%
WPC03R24S05LC	24	5.0	60	600	600	74
WPC03R24D15LC	24	±15.0	±10	±100	±100	75
WPC03R48S05LC	48	5.0	60	600	600	74

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	All WPC03R24 types	18	24	36	V
	All WPC03R48 types	34	48	72	
Reflected ripple current			50		mA p-p

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated power				3	W
Voltage setpoint accuracy				±3.0	%
Temperature coefficient			±0.02		%/°C
Line regulation	High line to low line			±1.5	%
				±1.5	%
Load regulation	Min load to Nom. load			±2.0	%
				±2.0	%
Ripple & Noise	BW = 5Hz to 20MHz		50	100	mVp-p

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	Variable frequency min.-max.	70		225	kHz
MTTF per ML-HDBK-217, Rev F	T _A = +25°		1.0		MHr

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated voltage		1500			Vdc
Test voltage	60Hz, 10 seconds	1500			Vpk
Resistance			10		GΩ
Capacitance			220		pF

TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Operation		-40		+85	°C
Storage		-55		+125	°C

ABSOLUTE MAXIMUM RATINGS

Output short circuit protection	Continuous
Internal power dissipation	1.5W
Max. case temperature	+100°C

1. Although minimum load specifications are indicated, all models will operate under no-load conditions, but may not remain within data sheet specification.

All specifications typical at T_A=25°C, nominal input voltage and rated output current unless otherwise specified.



RoHS COMPLIANCE INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 260°C for 10 seconds. The pin termination finish on this product series is matte tin (100 microns min.) over nickel (40-80 microinches). The series is backward compatible with Sn/Pb soldering systems. For further information, please visit www.murata-ps.com/rohs

TECHNICAL NOTES**ISOLATION VOLTAGE**

'Hi Pot Test', 'Flash Tested', 'Withstand Voltage', 'Proof Voltage', 'Dielectric Withstand Voltage' & 'Isolation Test Voltage' are all terms that relate to the same thing, a test voltage, applied for a specified time, across a component designed to provide electrical isolation, to verify the integrity of that isolation.

Murata Power Solutions WPC03 series of dc/dc converters are all 100% production tested at their stated isolation voltage. This is 1500V pk for 10 seconds.

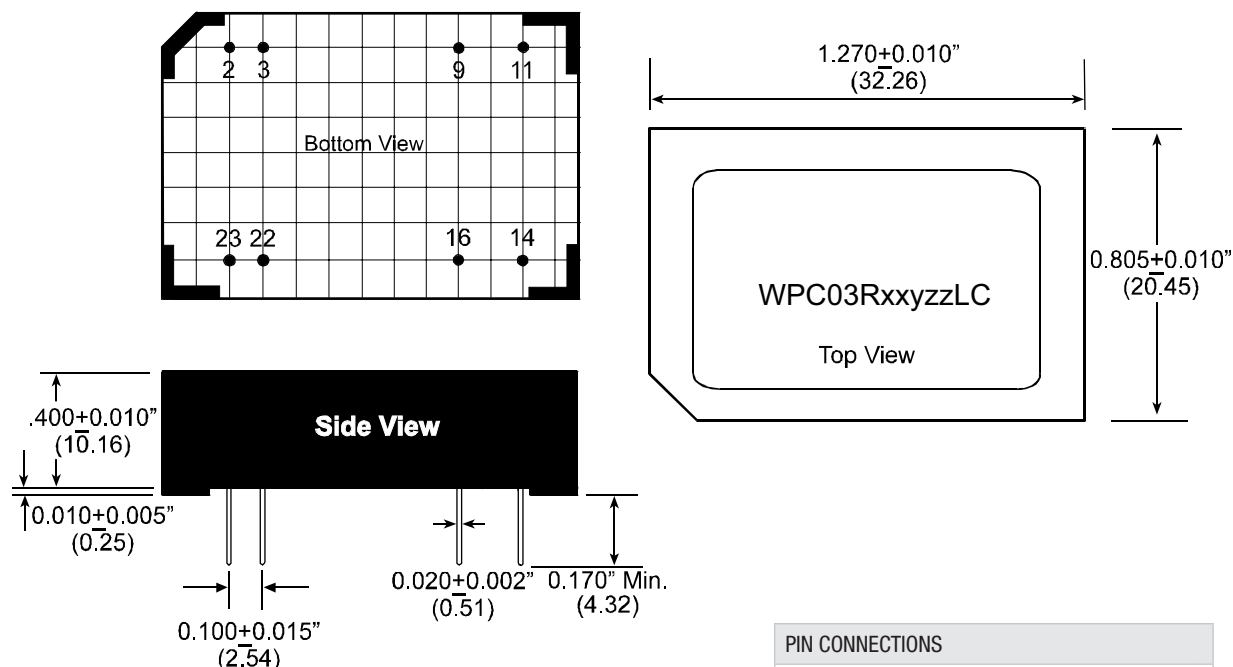
A question commonly asked is, "What is the continuous voltage that can be applied across the part in normal operation?"

The WPC03 series has been recognized by Underwriters Laboratory, both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation system. The part could be expected to function correctly with several hundred volts offset applied continuously across the isolation barrier; but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these circuits and any user-accessible circuitry according to safety standard requirements.

REPEATED HIGH-VOLTAGE ISOLATION TESTING

It is well known that repeated high-voltage isolation testing of a barrier component can actually degrade isolation capability, to a lesser or greater degree depending on materials, construction and environment. While manufactured parts can withstand several times the stated test voltage, the isolation capability does depend on the wire insulation. Any material, including this enamel (typically polyurethane) is susceptible to eventual chemical degradation when subject to very high applied voltages thus implying that the number of tests should be strictly limited. We therefore strongly advise against repeated high voltage isolation testing, but if it is absolutely required, that the voltage be reduced by 20% from specified test voltage.

MECHANICAL DIMENSIONS



PIN CONNECTIONS

Pin	Function	
	Singles	Duals
2	-V _{IN}	-V _{IN}
3	-V _{IN}	-V _{IN}
9	No Connection	OV
11	No Connection	-V _{OUT}
14	+V _{OUT}	+V _{OUT}
16	-V _{OUT}	OV
22	+V _{IN}	+V _{IN}
23	+V _{IN}	+V _{IN}

Weight: 12g

All pins on a 0.1 (2.54) pitch and within ±0.01 (0.25) of true position.

Unless otherwise stated all dimensions are in inches (mm) ±0.01 (0.25).