



## FEATURES

- ◆RoHS compliant
- ◆12 Pin SIP Package
- ◆Low ripple and noise
- ◆High efficiency up to 70%
- ◆Operating temperature -40°C to+85°C
- ◆Input/Output Isolation 1000 , 3000 or 6000VDC
- ◆Pin compatible with multiple manufacturers

## MODEL SELECTION

**B<sup>①</sup>24<sup>②</sup>05<sup>③</sup>X<sup>④</sup>ES<sup>⑤</sup>-2W<sup>⑥</sup>**

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed Input
- ⑤ EXTEND SIP
- ⑥ Rated Power

## APPLICATIONS

1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Microdc; refer to [www.microdc.cn](http://www.microdc.cn) for the most current product specifications.
2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured.
3. Mechanical drawings and specifications are for reference only.
4. All specifications are measured at an ambient temperature of 25°C, humidity<75%,nominal input voltage and at rated output load unless otherwise specified.
5. Microdc may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release.
6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.
7. Warranty is in accordance with Microdc's sandard Terms of Sale available at [www.microdc.cn](http://www.microdc.cn).

## SELECTION GUIDE

Order code	Input Voltage (V)	Output Voltage (V)	Output Current max(MA)	Capacitive load,max (μ F)	Efficiency (%)
B0503XES-2W	4.5-5.5	3.3	600	470	64
B0505XES-2W	4.5-5.5	5	400	470	66
B0507XES-2W	4.5-5.5	7.2	278	470	64
B0509XES-2W	4.5-5.5	9	222	470	66
B0512XES-2W	4.5-5.5	12	167	470	70
B0515XES-2W	4.5-5.5	15	134	470	70
B0518XES-2W	4.5-5.5	18	111	470	67
B0524XES-2W	4.5-5.5	24	83	470	68
B1203XES-2W	10.8-13.2	3.3	600	470	64
B1205XES-2W	10.8-13.2	5	400	470	66
B1207XES-2W	10.8-13.2	7.2	278	470	63
B1209XES-2W	10.8-13.2	9	222	470	66
B1212XES-2W	10.8-13.2	12	167	470	70
B1215XES-2W	10.8-13.2	15	134	470	70
B1218XES-2W	10.8-13.2	18	111	470	66
B1224XES-2W	10.8-13.2	24	83	470	68
B2403XES-2W	21.6-26.4	3.3	600	470	54
B2405XES-2W	21.6-26.4	5	400	470	64
B2407XES-2W	21.6-26.4	7.2	278	470	63
B2409XES-2W	21.6-26.4	9	222	470	64
B2412XES-2W	21.6-26.4	12	167	470	68
B2415XES-2W	21.6-26.4	15	134	470	68
B2418XES-2W	21.6-26.4	18	111	470	68
B2424XES-2W	21.6-26.4	24	83	470	70
<b>Input/Output Isolation 3000VDC</b>					
F0503XES-2W	4.5-5.5	3.3	600	470	64
F0505XES-2W	4.5-5.5	5	400	470	66
F0507XES-2W	4.5-5.5	7.2	278	470	64
F0509XES-2W	4.5-5.5	9	222	470	66
F0512XES-2W	4.5-5.5	12	167	470	70
F0515XES-2W	4.5-5.5	15	134	470	70
F0518XES-2W	4.5-5.5	18	111	470	67
F0524XES-2W	4.5-5.5	24	83	470	68
F1203XES-2W	10.8-13.2	3.3	600	470	64
F1205XES-2W	10.8-13.2	5	400	470	66
F1207XES-2W	10.8-13.2	7.2	278	470	63
F1209XES-2W	10.8-13.2	9	222	470	66
F1212XES-2W	10.8-13.2	12	167	470	70
F1215XES-2W	10.8-13.2	15	134	470	70
F1218XES-2W	10.8-13.2	18	111	470	66
F1224XES-2W	10.8-13.2	24	83	470	68
F2403XES-2W	21.6-26.4	3.3	600	470	64
F2405XES-2W	21.6-26.4	5	400	470	64
F2407XES-2W	21.6-26.4	7.2	278	470	63
F2409XES-2W	21.6-26.4	9	222	470	64
F2412XES-2W	21.6-26.4	12	167	470	68
F2415XES-2W	21.6-26.4	15	134	470	68
F2418XES-2W	21.6-26.4	18	111	470	68
F2424XES-2W	21.6-26.4	24	83	470	70
<b>Input/Output Isolation 6000VDC</b>					
H0503XES-2W	4.5-5.5	3.3	600	470	53
H0505XES-2W	4.5-5.5	5	400	470	66
H0507XES-2W	4.5-5.5	7.2	278	470	64
H0509XES-2W	4.5-5.5	9	222	470	66



### SELECTION GUIDE

Order code	Input Voltage (V)	Output Voltage (V)	Output Current max(MA)	Capacitive load,max (μ F)	Efficiency (%)
H0512XES-2W	4.5-5.5	12	167	470	70
H0515XES-2W	4.5-5.5	15	134	470	70
H0518XES-2W	4.5-5.5	18	111	470	67
H0524XES-2W	4.5-5.5	24	83	470	68
H1203XES-2W	10.8-13.2	3.3	600	470	53
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H2418XES-2W	21.6-26.4	18	111	470	68
H2424XES-2W	21.6-26.4	24	83	470	70

### Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5		VDC
	12	10.8-13.2		
	24	21.6-25.4		
Filter	Capacitor			
Turn on Transient process time			100	ms
Start up time		300		ms
Absolute Maximum Rating	5 Vin	0-7		VDC
	12 Vin	0-15		
	24 Vin	0-28		
Peak Input Voltage time		100		ms

### Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1000, 3000 or 6000	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Short Circuit protection	Continuous			
Short Circuit restart	Auto-recovery			
Line voltage regulation (Single)		±0.5		%
Load voltage regulation (Single)	Load 0 – 100%	±0.5		%
Load voltage regulation (Single)	Load 0 – 100%	±1.5		%
3.3V output model				
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	75		mV p-p
Rising time		150		ms

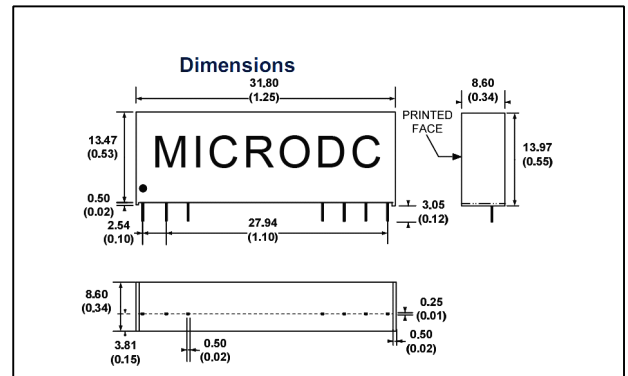
### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	50		KHz
Operating temperature	Full Load without Derating	-40 to +85		°C
Storage temperature		-40 to +125		°C
Max Case temperature			90	°C
Cooling	Free air convection			%
Humidity			90	%
Case material	Plastic UL94-VO			
Weight		3.8		g
Dimensions (L x W x H)		1.25 x 0.34 x 0.53 inches      31.80 x 8.60 x 13.47 mm		
MTBF	>1 500 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25 C)			

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified

### Pin Out Specifications

Pin	1000VDC	3000 and 6000VDC
1	+V Input	+V Input
2	N.C.	-V Input
3	N.C.	N.C.
9	N.C.	N.C.
10	-V Output	-V Output
11	+V Output	+V Output
12	-V Input	N.C.



#### RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds.

The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

#### REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.