



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

2B^①24^②05^③X^④ES^⑤

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

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 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.

SELECTION GUIDE

Order code	Input Voltage (V)	Output Voltage (V)	Output Current max(MA)	Capacitive load,max (μF)	Efficiency (%)
2B0503XES	4.5-5.5	3.3	600	470	64
2B0505XES	4.5-5.5	5	400	470	66
2B0507XES	4.5-5.5	7.2	278	470	64
2B0509XES	4.5-5.5	9	222	470	66
2B0512XES	4.5-5.5	12	167	470	70
2B0515XES	4.5-5.5	15	134	470	70
2B0518XES	4.5-5.5	18	111	470	67
2B0524XES	4.5-5.5	24	83	470	68
2B1203XES	10.8-13.2	3.3	600	470	64
2B1205XES	10.8-13.2	5	400	470	66
2B1207XES	10.8-13.2	7.2	278	470	63
2B1209XES	10.8-13.2	9	222	470	66
2B1212XES	10.8-13.2	12	167	470	70
2B1215XES	10.8-13.2	15	134	470	70
2B1218XES	10.8-13.2	18	111	470	66
2B1224XES	10.8-13.2	24	83	470	68
2B2403XES	21.6-26.4	3.3	600	470	54
2B2405XES	21.6-26.4	5	400	470	64
2B2407XES	21.6-26.4	7.2	278	470	63
2B2409XES	21.6-26.4	9	222	470	64
2B2412XES	21.6-26.4	12	167	470	68
2B2415XES	21.6-26.4	15	134	470	68
2B2418XES	21.6-26.4	18	111	470	68
2B2424XES	21.6-26.4	24	83	470	70
Input/Output Isolation 3000VDC					
2F0503XES	4.5-5.5	3.3	600	470	64
2F0505XES	4.5-5.5	5	400	470	66
2F0507XES	4.5-5.5	7.2	278	470	64
2F0509XES	4.5-5.5	9	222	470	66
2F0512XES	4.5-5.5	12	167	470	70
2F0515XES	4.5-5.5	15	134	470	70
2F0518XES	4.5-5.5	18	111	470	67
2F0524XES	4.5-5.5	24	83	470	68
2F1203XES	10.8-13.2	3.3	600	470	64
2F1205XES	10.8-13.2	5	400	470	66
2F1207XES	10.8-13.2	7.2	278	470	63
2F1209XES	10.8-13.2	9	222	470	66
2F1212XES	10.8-13.2	12	167	470	70
2F1215XES	10.8-13.2	15	134	470	70
2F1218XES	10.8-13.2	18	111	470	66
2F1224XES	10.8-13.2	24	83	470	68
2F2403XES	21.6-26.4	3.3	600	470	64
2F2405XES	21.6-26.4	5	400	470	64
2F2407XES	21.6-26.4	7.2	278	470	63
2F2409XES	21.6-26.4	9	222	470	64
2F2412XES	21.6-26.4	12	167	470	68
2F2415XES	21.6-26.4	15	134	470	68
2F2418XES	21.6-26.4	18	111	470	68
2F2424XES	21.6-26.4	24	83	470	70
Input/Output Isolation 6000VDC					
2H0503XES	4.5-5.5	3.3	600	470	53
2H0505XES	4.5-5.5	5	400	470	66
2H0507XES	4.5-5.5	7.2	278	470	64
2H0509XES	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 (μF)	Efficiency (%)
H0512XES	4.5-5.5	12	167	470	70
H0515XES	4.5-5.5	15	134	470	70
H0518XES	4.5-5.5	18	111	470	67
H0524XES	4.5-5.5	24	83	470	68
H1203XES	10.8-13.2	3.3	600	470	53
H1205XES	10.8-13.2	5	400	470	66
H1207XES	10.8-13.2	7.2	278	470	63
H1209XES	10.8-13.2	9	222	470	66
H1212XES	10.8-13.2	12	167	470	70
H1215XES	10.8-13.2	15	134	470	70
H1218XES	10.8-13.2	18	111	470	66
H1224XES	10.8-13.2	24	83	470	68
H2403XES	21.6-26.4	3.3	600	470	54
H2405XES	21.6-26.4	5	400	470	64
H2407XES	21.6-26.4	7.2	278	470	63
H2409XES	21.6-26.4	9	222	470	64
H2412XES	21.6-26.4	12	167	470	68
H2415XES	21.6-26.4	15	134	470	68
H2418XES	21.6-26.4	18	111	470	68
H2424XES	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

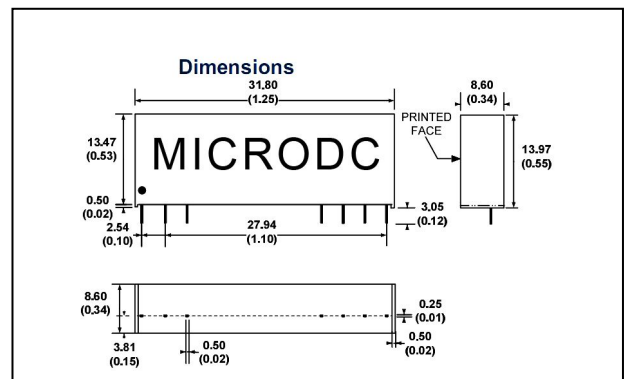
General Specifications

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.