

0.25W, FIXED INPUT, ISOLATED&UNREGULATED SINGLE OUTPUT DC-DC CONVERTER



FEATURES

- ◆RoHS compliant
- ◆4 Pin SIP Package
- ◆Low ripple and noise
- ◆High efficiency up to 72%
- ◆Operating temperature -40°C to +85°C
- ◆Input/Output isolation 1000VDC
- ◆Pin compatible with multiple manufacturers

MODEL SELECTION

QB^①05^②03^③X^④M^⑤

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed Input
- ⑤ Mini SIP4 Package

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 Standard Terms of Sale available at www.microdc.cn.

PRODUCT PROGRAM

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	EQFOFiciency (%)
QB0503XM	4.5-5.5	3.3	75.7	1000	100	66
QB0505XM	4.5-5.5	5	50	1000	100	66
QB0507XM	4.5-5.5	7.2	34.72	1000	100	66
QB0509XM	4.5-5.5	9	27.77	1000	100	68
QB0512XM	4.5-5.5	12	20.83	1000	100	68
QB0515XM	4.5-5.5	15	16.67	1000	100	68
QB0518XM	4.5-5.5	18	13.88	1000	100	68
QB0524XM	4.5-5.5	24	10.41	1000	100	70
QB1203XM	10.8-13.2	3.3	75.7	1000	100	66
QB1205XM	10.8-13.2	5	50	1000	100	67
QB1207XM	10.8-13.2	7.2	34.72	1000	100	68
QB1209XM	10.8-13.2	9	27.77	1000	100	68
QB1212XM	10.8-13.2	12	20.83	1000	100	68
QB1215XM	10.8-13.2	15	16.67	1000	100	69
QB1218XM	10.8-13.2	18	13.88	1000	100	70
QB1224XM	10.8-13.2	24	10.41	1000	100	72
QB2403XM	21.6-26.4	3.3	75.7	1000	100	67
QB2405XM	21.6-26.4	5	50	1000	100	67
QB2407XM	21.6-26.4	7.2	34.72	1000	100	67
QB2409XM	21.6-26.4	9	27.77	1000	100	69
QB2412XM	21.6-26.4	12	20.83	1000	100	69
QB2415XM	21.6-26.4	15	16.67	1000	100	69
QB2418XM	21.6-26.4	18	13.88	1000	100	69
QB2424XM	21.6-26.4	24	10.41	1000	100	69



Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5		VDC
	12	10.8-13.2		
	15	13.5 - 16.5		
	24	21.6-26.4		
Filter	Capacitor			
Turn on transient process time			25	ms
Start up time		200		ms
Absolute maximum rating	5 Vin	7		VDC
	12 Vin	15		
	15 Vin	17		
	24 Vin	28		
Peak input voltage time		100		ms

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	80		KHz
Operating temperature	Without derating	-40~+85		°C
Storage temperature		-40~+125		°C
Maximum case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Non-conductive black plastic			
Weight		1.5	F	g
Dimensions (Lx W x H)	0.46 x 0.24 x 0.38 inches		11.68 x 6.00 x 9.65 mm	
MTBF	>2 010 000 hrs (MIL-HDBK -217F, Ground Benign, t _e +25 °C)			

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

Output Specifications

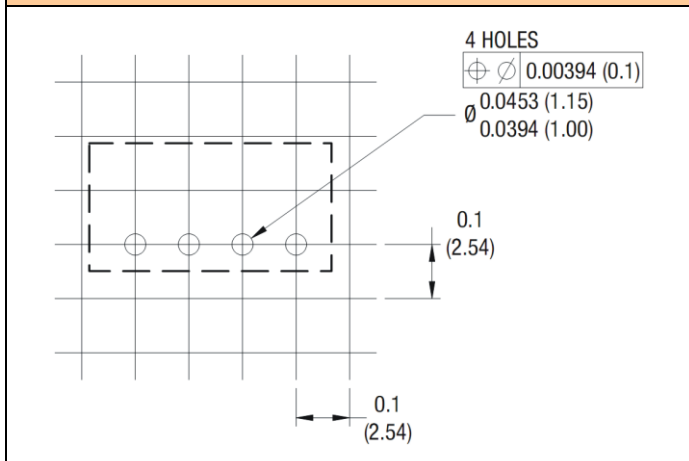
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±3		%
Short circuit protection	Momentary (1sec)			
Line voltage regulation	For 1% change of Vin	±1.2		% of Vin
Load voltage regulation	Load 20 – 100%	±10		%
Load voltage regulation 3.3V output model	Load 20 – 100%	±20		%
Temperature coefficient		±0.02		%/ C
Ripple & noise	At 20MHz Bandwidth	100		mV p-p
Capacitive load			100	µF
Rising time		50		ms

Isolation Specifications

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

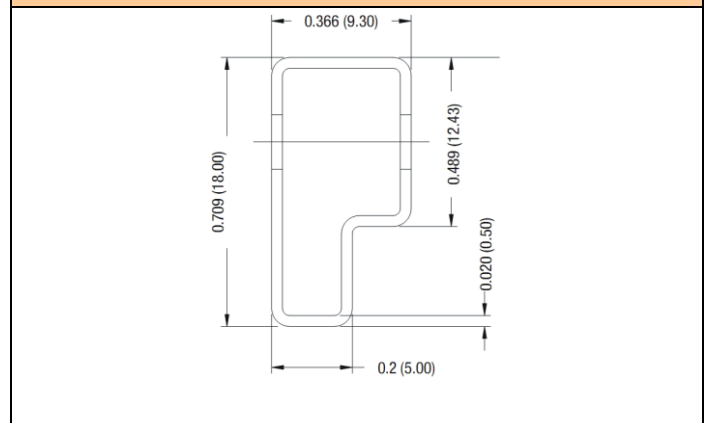
Recommended footprint details

4 PIN SIP Package



TUBE OUTLINE DIMENSIONS

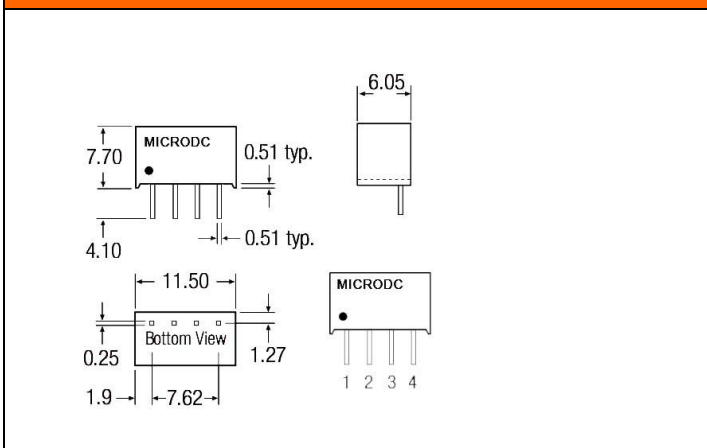
4 PIN SIP Tube



Unless otherwise stated all dimensions in inches (mm) ± 0.5 mm.
 Tube length (4 Pin SIP) : 20.47 (520mm ± 2 mm).

Tube Quantity :25

Dimensions



Pin Out Specifications

Pin	Single
1	-V Input
2	+V Input
3	-V Output
4	+V Output