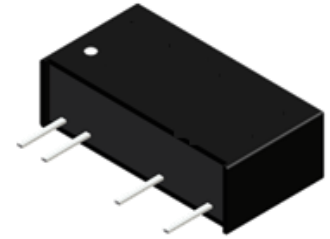


### Features

- 1 Watt output power
- 1:1 input voltage range
- 1KVDC/2KVDC isolation
- -40°C to +100°C operating temperature
- SIP7 Package
- Meet EN62368-1
- EMC-EN55022
- RoHS compliant

### Application

- Input voltage range from 3.3V to 24V
- Industry control application
- Tele-communication application



### Selection Guide

Part number	Input voltage	Output voltage	Output current @ full load	Efficiency <sup>(1)</sup> (typ.)	Capacitive load <sup>(2)</sup> (max.)
MSB-3.33.3J	3.3VDC (±10%)	3.3 VDC	303 mA	76%	1000uF
MSB-3.305J		5 VDC	200 mA	79%	1000uF
MSB-3.312J		12 VDC	84 mA	79%	220uF
MSB-3.315J		15 VDC	67 mA	81%	220uF
MSB-053.3J	5VDC (±10%)	3.3 VDC	303 mA	78%	1000uF
MSB-0505J		5 VDC	200 mA	80%	1000uF
MSB-0512J		12 VDC	84 mA	79%	220uF
MSB-0515J		15 VDC	67 mA	81%	220uF
MSB-123.3J	12VDC (±10%)	3.3 VDC	303 mA	79%	1000uF
MSB-1205J		5 VDC	200 mA	73%	1000uF
MSB-1212J		12 VDC	84 mA	80%	220uF
MSB-1215J		15 VDC	67 mA	81%	220uF
MSB-243.3J	24VDC (±10%)	3.3 VDC	303 mA	78%	1000uF
MSB-2405J		5 VDC	200 mA	73%	1000uF
MSB-2412J		12 VDC	84 mA	80%	220uF
MSB-2415J		15 VDC	67 mA	82%	220uF

1. The efficiency is test by nominal input and max. full load at 25°C.
2. The capacitive load is test by minimum input and constant resistive load.
3. Add "H" after P/N for isolation 2KVDC.
4. Add "P" after P/N for short circuit protection.

### Part Number

**M S B - 05 05 J**  
↓ Input voltage    ↓ Output voltage

# Specifications

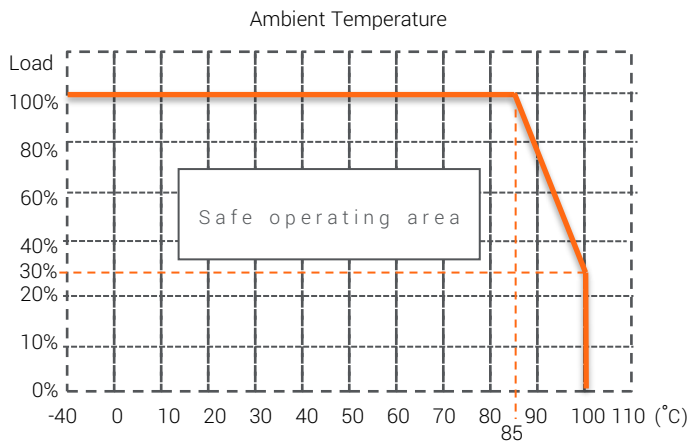
	Parameter	Conditions	Min.	Typ.	Max.	Unit
Input	Input filter			Internal capacitors		
	Input voltage range		-10		+10	%
Output	Voltage accuracy		-5		+5	%
	Minimum load		0			%
	Line regulation	LL to HL at 100% load		1.2% typ.@1% of Vin		
	Load regulation	Vo=3.3/5VDC			15	%
	(10% to 100% Load)	Vo=12~15VDC			10	%
	Ripple & noise	@20MHZ BW (@Nominal Vin)			100	mVp-p
	Operating frequency	100% Load at Nominal Vin			80	KHz
Environment	Operating temperature		-40		100	°C
	Storage temperature		-55		125	°C
	Relative humidity		5		95	%RH
Function	Isolation voltage	60 sec., Input to output	1			KVDC
		Add suffix "H", 60sec.	2			KVDC
	Isolation resistance		10			GΩ
	Isolation capacitance				120	pF
	Short Circuit Protection	Option		Continuous		
	MTBF	25°C			16.4*10 <sup>6</sup>	Hours
	Vibration			MIL-STD-202G		
	Safety approvals			EN 60950-1		
Physical	Case material			UL94V-0 black plastic		
	Potting material			Epoxy (UL94V-0)		
	Dimension			19.60x6.00x10.20 mm		
	Weight			2.2		g
EMC	EMI	EN 55022		Class A/B		
	ESD	EN61000-4-2, Air±8kV; Contact±6kV		Criteria A		
	Radiated immunity	EN61000-4-3		Criteria A		
	Fast transient	EN61000-4-4, ±1kV		Criteria A		
	Surge	EN61000-4-5, ±0.5kV		Criteria A		
	Conducted immunity	EN61000-4-6		Criteria A		
	Magnetic field immunity	EN61000-4-8		Criteria A		

1. "EMC filtering suggestion" is as following.
2. In this datasheet, all test methods are based on our corporate standards.
3. The product information and specifications are subject to change without prior notice.
4. All specifications valid at nominal input voltage, full load and 25°C unless otherwise stated.
5. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more detail.

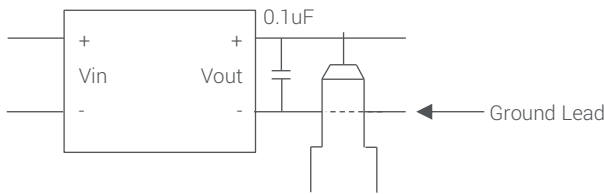
CTC is the professional and one among world's leading manufacturers of DC-DC/ AC-DC converters.

The products were used in Computers, Industrial controls, Medical equipment, Transportation, EV, ECO-power, Aero-space application and communication.

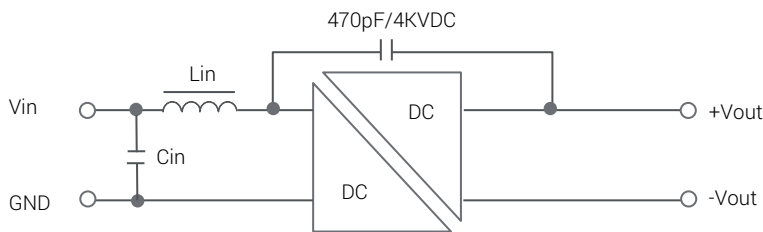
## Derating Curve



## Ripple & Noise Measure Method



## EMC filtering-suggestion for Class B



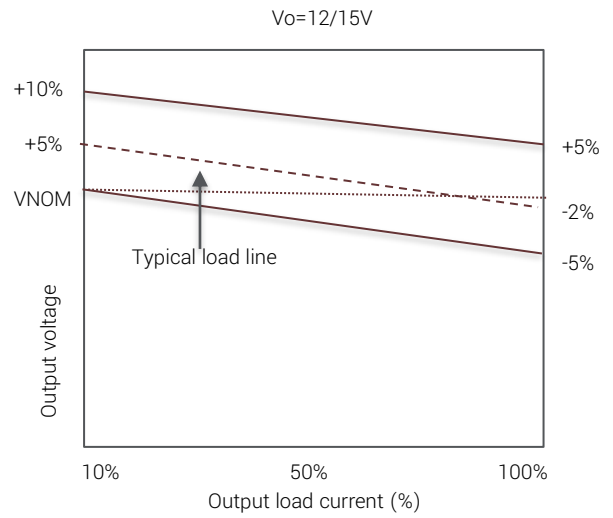
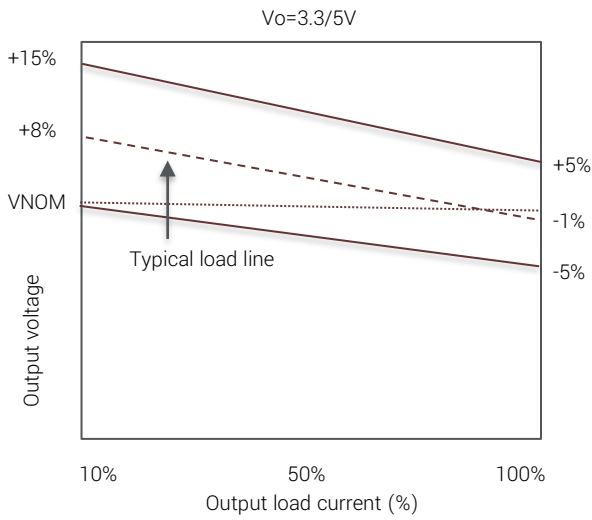
Part No.	Input voltage	Inductance/Capacitance (Lin/Cin)
MSB-J	3.3 V	3.3µH/22µF
	5 V	4.7µH/10µF
	12 V	22µH/4.7µF
	24 V	47µH/2.2µF

\*The external filter for meet EN55022 class B.

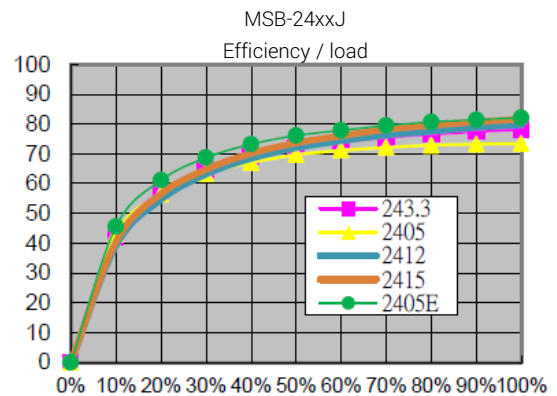
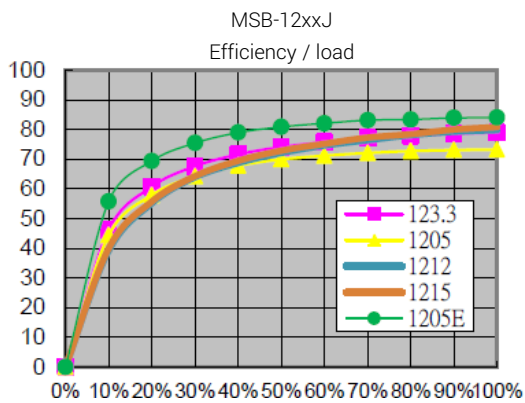
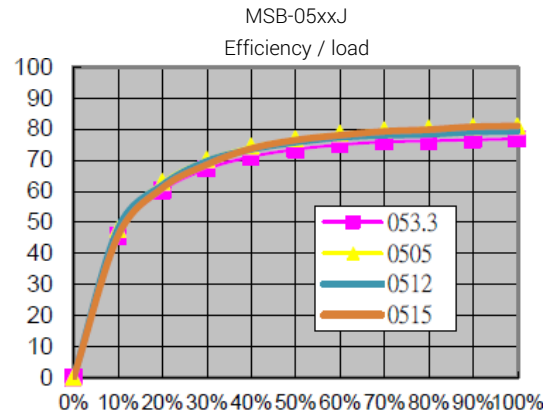
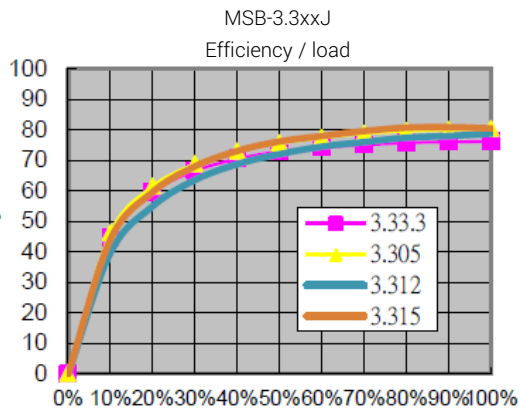
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## Tolerance Envelope



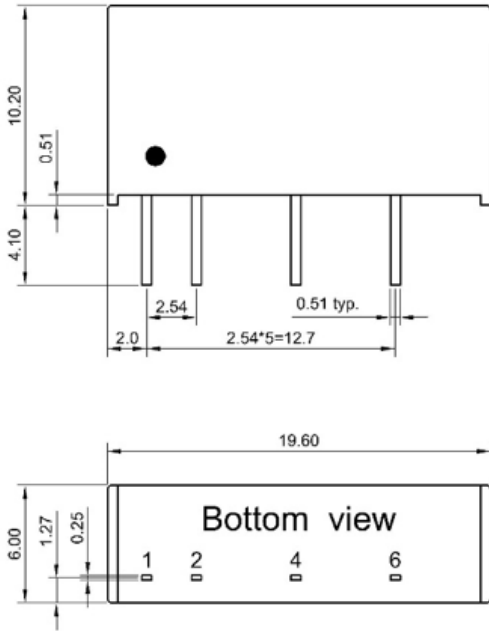
## Efficiency Curve



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## Mechanical Dimension & Pinning



Pin	Single
1	+Vin
2	-Vin
4	-Vout
6	+Vout

Unit: mm

TOL:  $\pm 0.25\text{mm}$

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