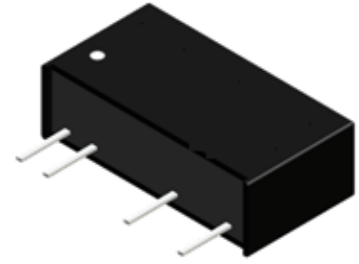


Features

- 1 Watt output power
- 1:1 input voltage **range**
- 1KVDC/2KVDC isolation
- -40°C to +100°C operating temperature
- SIP7 package
- Meet EN60950
- 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 ⁽¹⁾ (typ.)	Capacitive load ⁽²⁾ (max.)
MS-3.33.3J	3.3 VDC (±10%)	3.3 VDC	303 mA	75%	1000µF
MS-3.305J		5 VDC	200 mA	79%	1000µF
MS-3.312J		12 VDC	84 mA	79%	220µF
MS-3.315J		15 VDC	67 mA	81%	220µF
MS-3.33.3DJ		±3.3 VDC	±152 mA	77%	330µF
MS-3.305DJ		±5 VDC	±100 mA	74%	330µF
MS-3.312DJ		±12 VDC	±42 mA	79%	100µF
MS-3.315DJ		±15 VDC	±34 mA	80%	100µF
MS-053.3J	5 VDC (±10%)	3.3 VDC	303 mA	78%	1000µF
MS-0505J		5 VDC	200 mA	79%	1000µF
MS-0512J		12 VDC	84 mA	79%	220µF
MS-0515J		15 VDC	67 mA	81%	220µF
MS-053.3DJ		±3.3 VDC	±152 mA	71%	330µF
MS-0505DJ		±5 VDC	±100 mA	74%	330µF
MS-0512DJ		±12 VDC	±42 mA	80%	100µF
MS-0515DJ		±15 VDC	±34 mA	80%	100µF
MS-123.3J	12 VDC (±10%)	3.3 VDC	303 mA	79%	1000µF
MS-1205J		5 VDC	200 mA	74%	1000µF
MS-1212J		12 VDC	84 mA	80%	220µF
MS-1215J		15 VDC	67 mA	81%	220µF
MS-123.3DJ		±3.3 VDC	±152 mA	80%	330µF
MS-1205DJ		±5 VDC	±100 mA	76%	330µF
MS-1212DJ		±12 VDC	±42 mA	81%	100µF
MS-1215DJ		±15 VDC	±34 mA	81%	100µF
MS-243.3J	24 VDC (±10%)	3.3 VDC	303 mA	80%	1000µF
MS-2405J		5 VDC	200 mA	74%	1000µF
MS-2412J		12 VDC	84 mA	80%	220µF
MS-2415J		15 VDC	67 mA	82%	220µF
MS-243.3DJ		±3.3 VDC	±152 mA	80%	330µF
MS-2405DJ		±5 VDC	±100 mA	75%	330µF
MS-2412DJ		±12 VDC	±42 mA	80%	100µF
MS-2415DJ		±15 VDC	±34 mA	80%	100µF

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 - 05 05 J

↓ Input voltage ↓ Output voltage

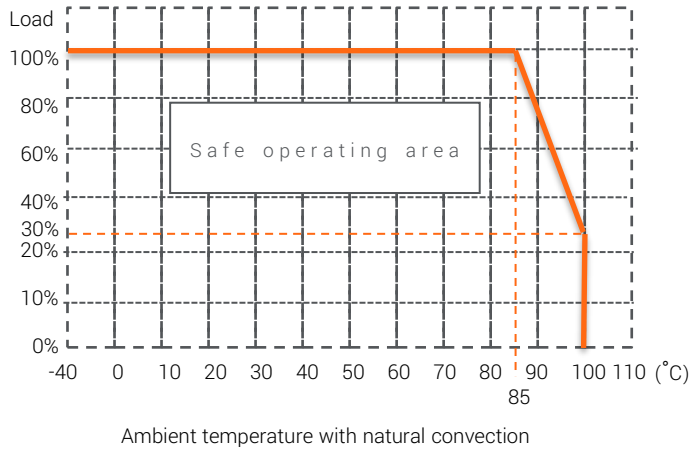
Specifications

	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 (10% to 100% Load)	Vo=3.3VDC				20	%
		Vo=5VDC				15	%
		Vo=9 - 15 VDC				10	%
	Ripple & noise @20MHZ BW (@Nominal Vin)	Single output types				100	mVp-p
Dual output types					±75	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	1 sec., Input to output	1			KVDC	
		Add suffix "H"	2			KVDC	
	Isolation resistance		10			GΩ	
	Isolation capacitance				120	pF	
	Short Circuit Protection	Option			Continuous		
	MTBF	25°C				16.4*10 ⁶	Hours
		85°C				10.2*10 ⁶	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,		Criteria A			
		Air±8kV, Contact±6kV					
	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				

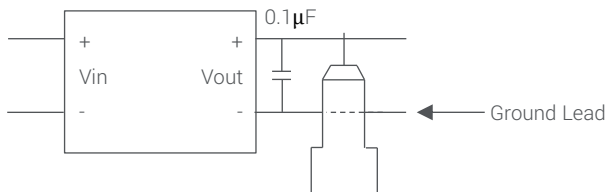
CTC is the professional and one among world's leading manufacturers of DC-DC/ AC-DC converters.

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

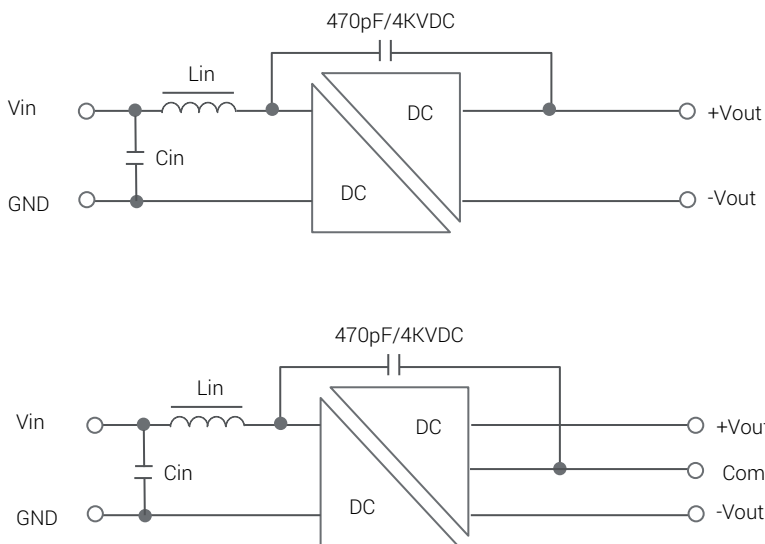
Derating Curve



Ripple & Noise Measure Method



EMI Filtering-Suggestion For Class B



Part No.	Input voltage	Inductance/Capacitance (Lin/Cin)
MS-J (Single out)	3.3 V	3.3 μ H/22 μ F
	5 V	4.7 μ H/10 μ F
	12 V	22 μ H/4.7 μ F
	24 V	47 μ H/2.2 μ F
MS-DJ (Dual output)	3.3 V	3.3 μ H/22 μ F
	5 V	4.7 μ H/10 μ F
	12 V	22 μ H/4.7 μ F
	24 V	47 μ H/2.2 μ F

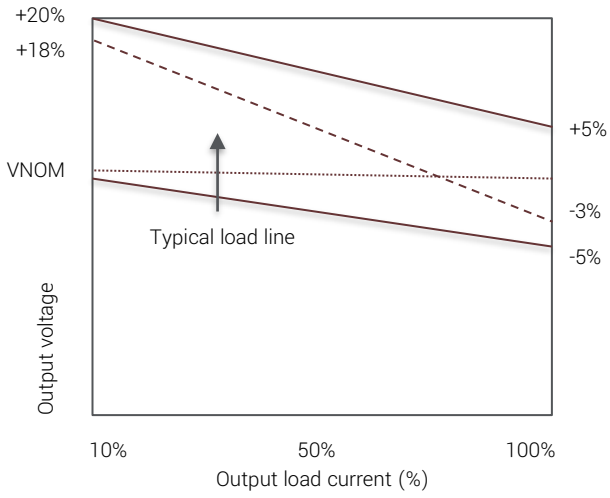
The external filter for meet EN55022 class B.

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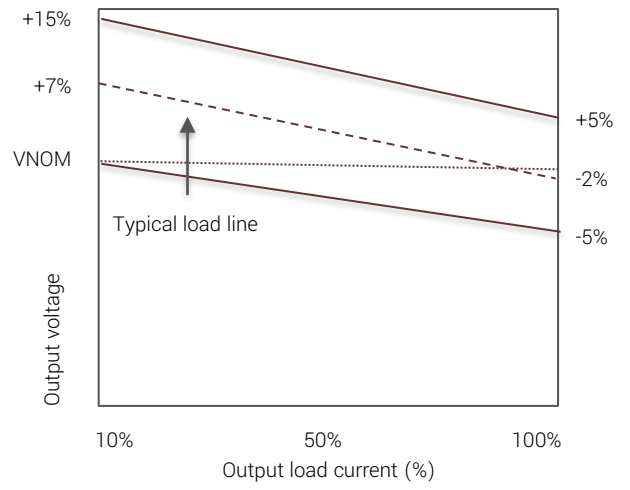
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Tolerance Envelope

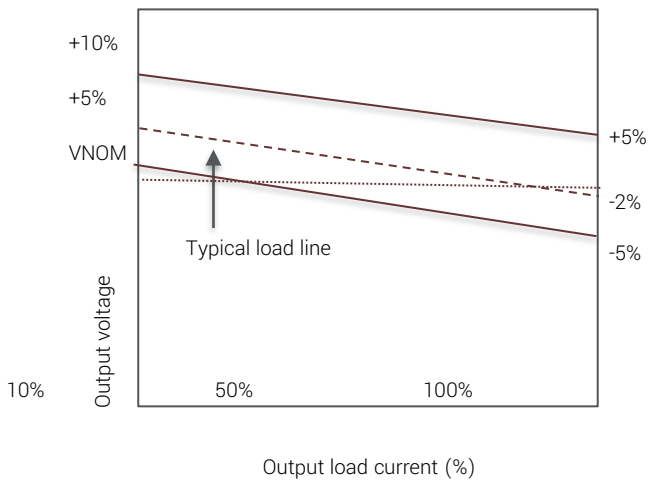
Vo=3.3V



Vo=5V



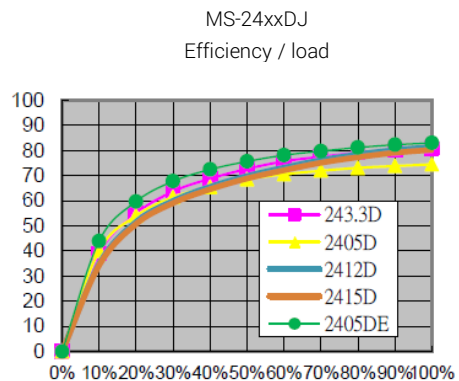
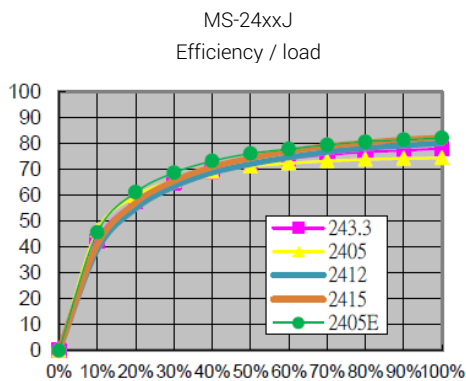
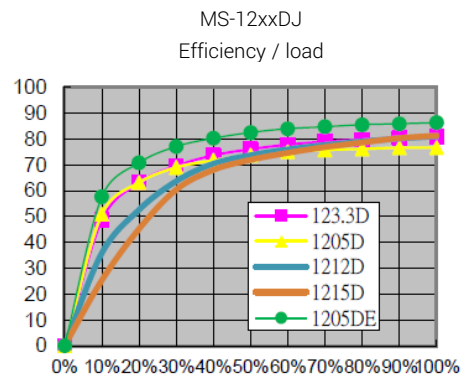
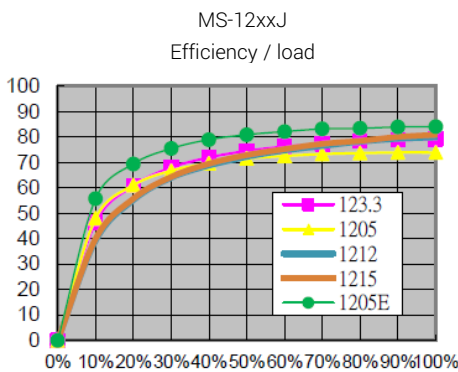
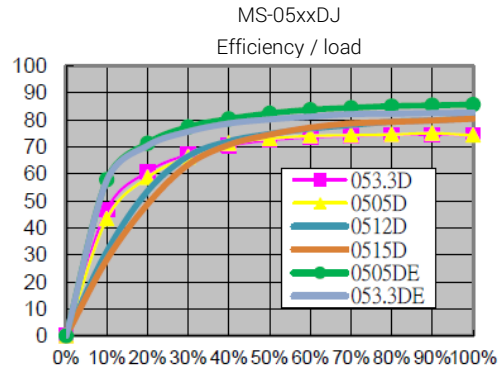
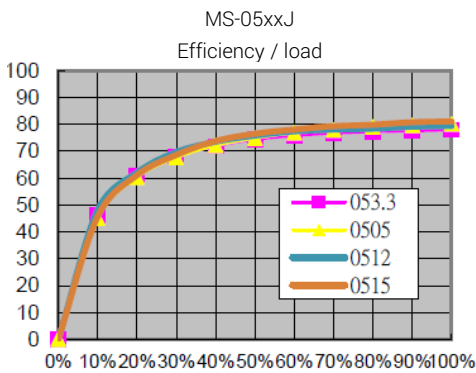
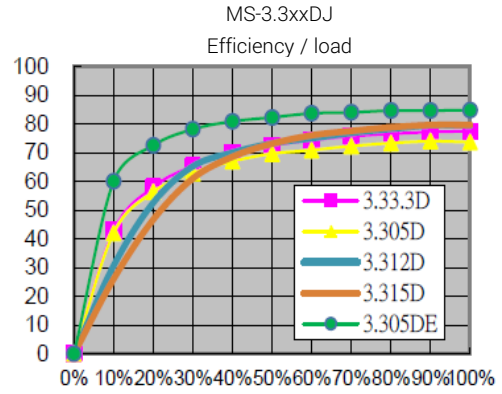
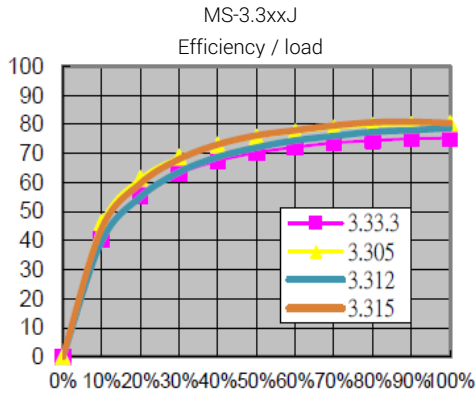
Vo=12/15V



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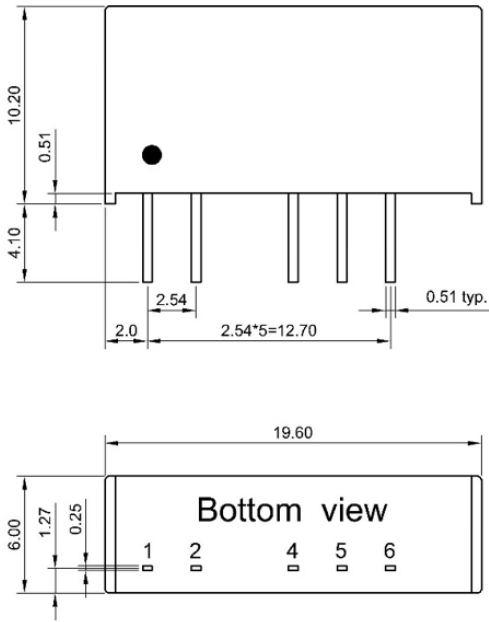
Efficiency curve



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Mechanical Dimension & Pinning



Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	NC	-Vout
5	-Vout	Com
6	+Vout	+Vout

NC= No Connection

Unit: mm

TOL.: ±0.25mm

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