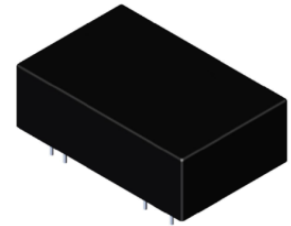


Features

- 1 Watts output power
- 1:1 input voltage range
- 1KVDC/2KVDC isolation
- -40°C to +100°C operating temperature
- DIP14 package
- 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.)
MD-3.33.3J	3.3VDC (±10%)	3.3VDC	303mA	75%	1000uF
MD-3.305J		5VDC	200mA	79%	1000uF
MD-3.312J		12VDC	84mA	79%	220uF
MD-3.315J		15VDC	67mA	81%	220uF
MD-3.33.3DJ		±3.3VDC	±152mA	77%	330uF
MD-3.305DJ		±5VDC	±100mA	74%	330uF
MD-3.312DJ		±12VDC	±42mA	79%	100uF
MD-3.315DJ		±15VDC	±34mA	80%	100uF
MD-053.3J	5VDC (±10%)	3.3VDC	303mA	78%	1000uF
MD-0505J		5VDC	200mA	79%	1000uF
MD-0512J		12VDC	84mA	79%	220uF
MD-0515J		15VDC	67mA	81%	220uF
MD-053.3DJ		±3.3VDC	±152mA	74%	330uF
MD-0505DJ		±5VDC	±100mA	74%	330uF
MD-0512DJ		±12VDC	±42mA	80%	100uF
MD-0515DJ		±15 VDC	±34mA	80%	100uF
MD-123.3J	12VDC (±10%)	3.3VDC	303mA	79%	1000uF
MD-1205J		5VDC	200mA	74%	1000uF
MD-1212J		12VDC	84mA	80%	220uF
MD-1215J		15VDC	67mA	81%	220uF
MD-123.3DJ		±3.3VDC	±152mA	80%	330uF
MD-1205DJ		±5VDC	±100mA	76%	330uF
MD-1212DJ		±12VDC	±42mA	81%	100uF
MD-1215DJ		±15 VDC	±34mA	81%	100uF
MD-243.3J	24VDC (±10%)	3.3VDC	303mA	80%	1000uF
MD-2405J		5VDC	200mA	74%	1000uF
MD-2412J		12VDC	84mA	80%	220uF
MD-2415J		15VDC	67mA	82%	220uF
MD-243.3DJ		±3.3VDC	±152mA	80%	330uF
MD-2405DJ		±5VDC	±100mA	75%	330uF
MD-2412DJ		±12VDC	±42mA	80%	100uF
MD-2415DJ		±15 VDC	±34mA	80%	100uF

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 D - 05 05 J
 Input voltage Output voltage

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

Specifications

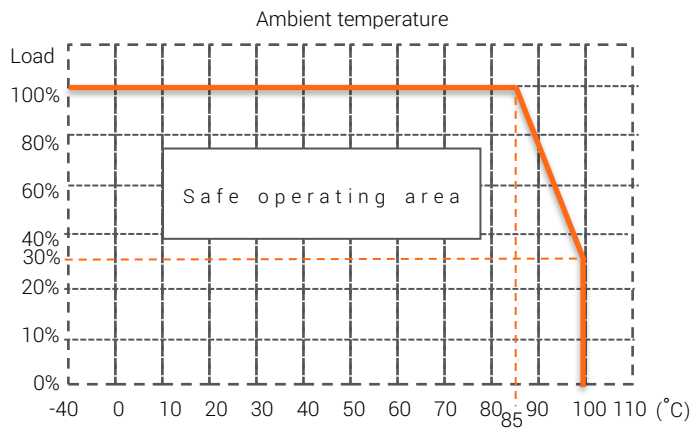
	Parameter	Conditions	Min.	Typ.	Max.	Unit
Input	Input filter			Internal capacitors		
	Input voltage range		-10		+10	%
Output	Voltage accuracy		-5		+5	%
	Minimum load		0			%
	Line regulation	LL to HL at 100% load		1.2% typ.@1% of Vin		
	Load regulation	Vo=3.3 / 5VDC			15	%
	(10% to 100% Load)	Vo=9~15 VDC			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	1 sec., Input to output	1000			VDC
		Add suffix "H"	2000			VDC
	Isolation resistance		10			GΩ
	Isolation capacitance				120	pF
	Short Circuit Protection	Option		Continuous		
	MTBF	25°C			16.4*10 ⁶	Hours
	Vibration			MIL-STD-202G		
Safety Approvals			EN60950 / EN60601			
Physical	Case material			UL94V-0 black plastic		
	Potting material			Epoxy (UL94V-0)		
	Dimension			19.90x10.00x7.10 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.

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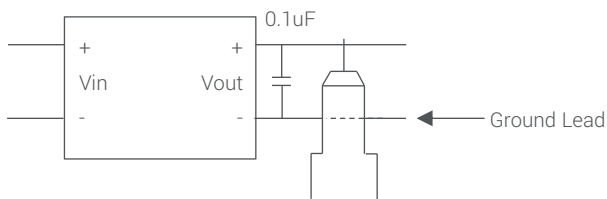
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Derating Curve

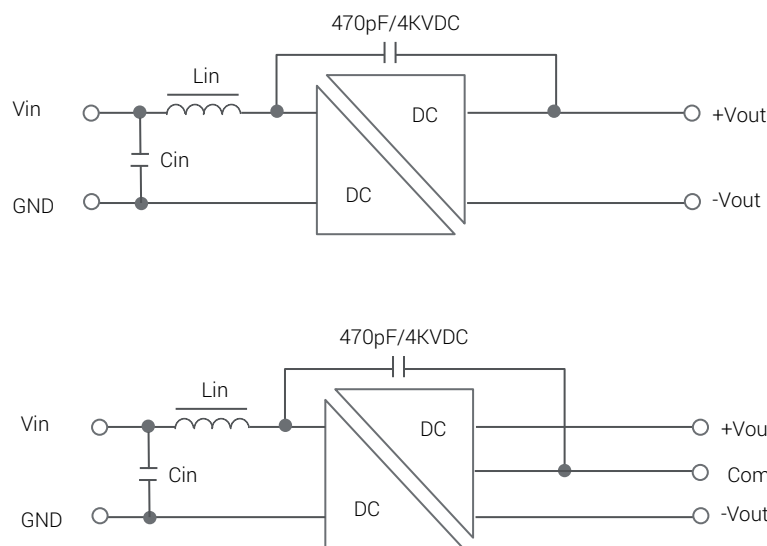


*The derating curve was measured at nominal Vin in chamber with forced air convection.

Ripple & Noise Measure Method



EMC Filtering-Suggestion For Class B



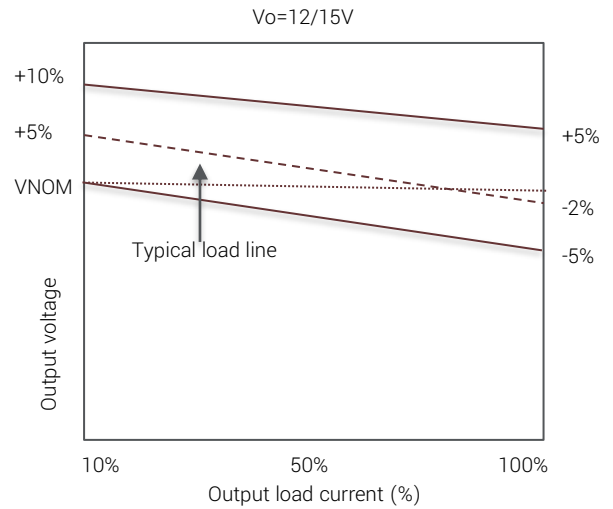
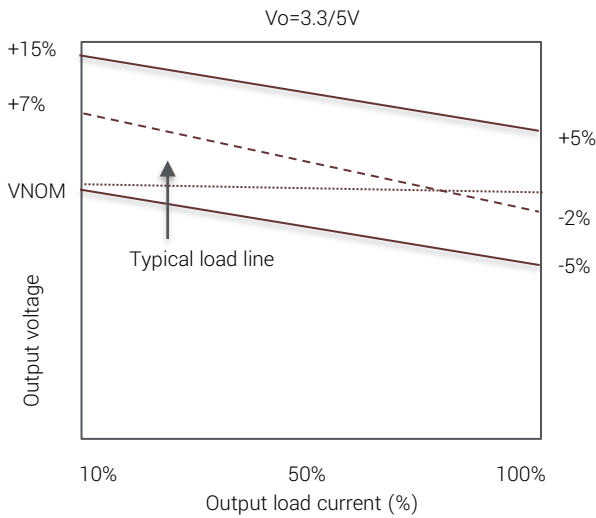
Part No.	Input voltage	Inductance/Capacitance (Lin/Cin)
MD (Single output)	5 V	4.7μH/10μF
	12 V	22μH/4.7μF
	24 V	47μH/2.2μF
MD-D (Dual output)	5 V	4.7μH/10μF
	12 V	22μH/4.7μF
	24 V	47μH/2.2μF

The external filter for meet EN55022 class B.

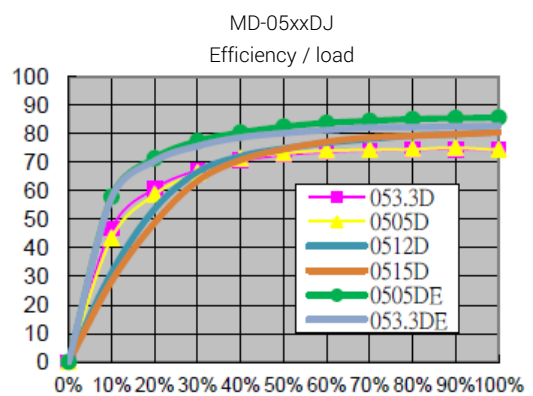
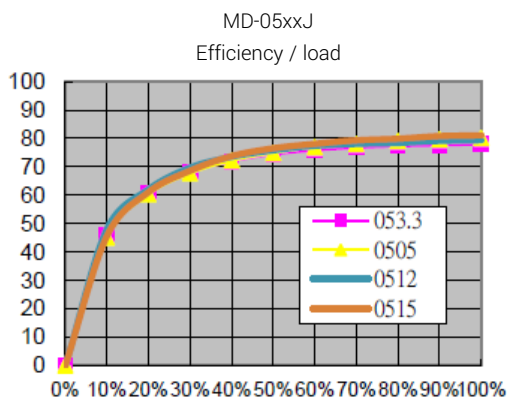
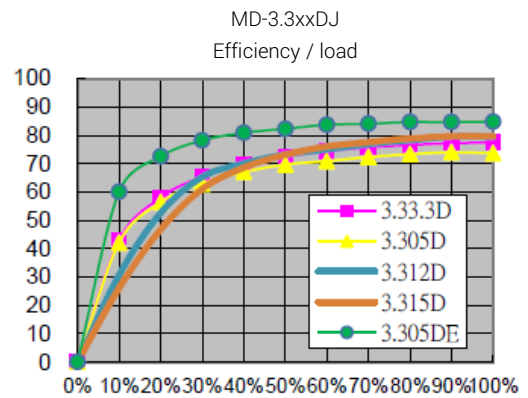
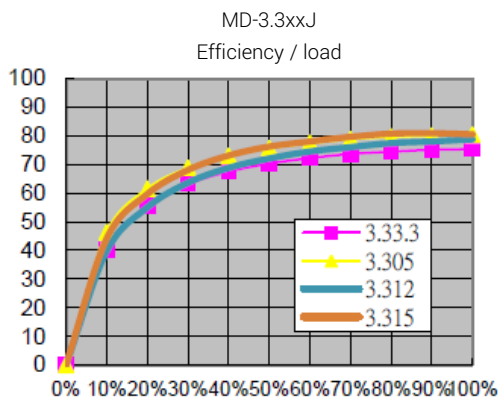
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Tolerance Envelope

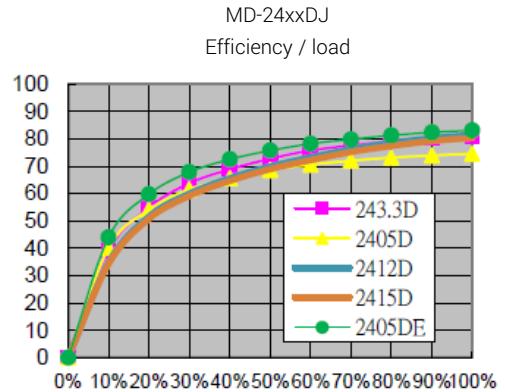
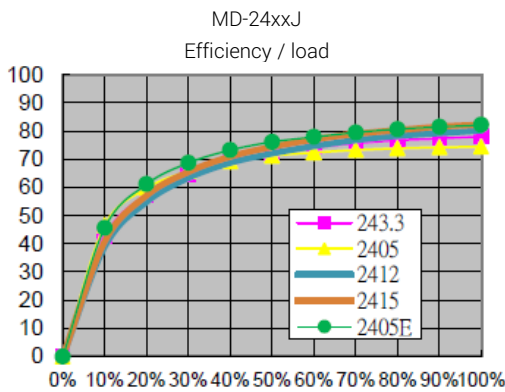
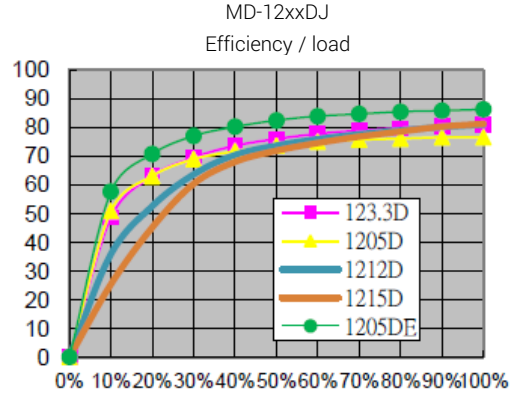
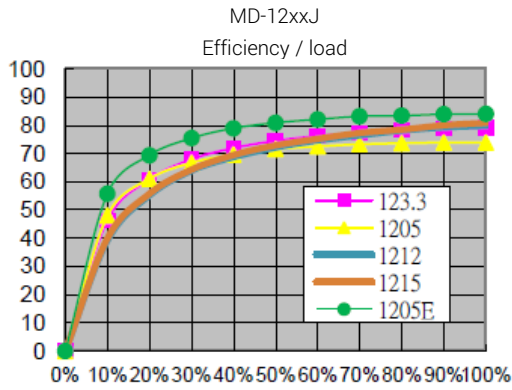


Efficiency Curve

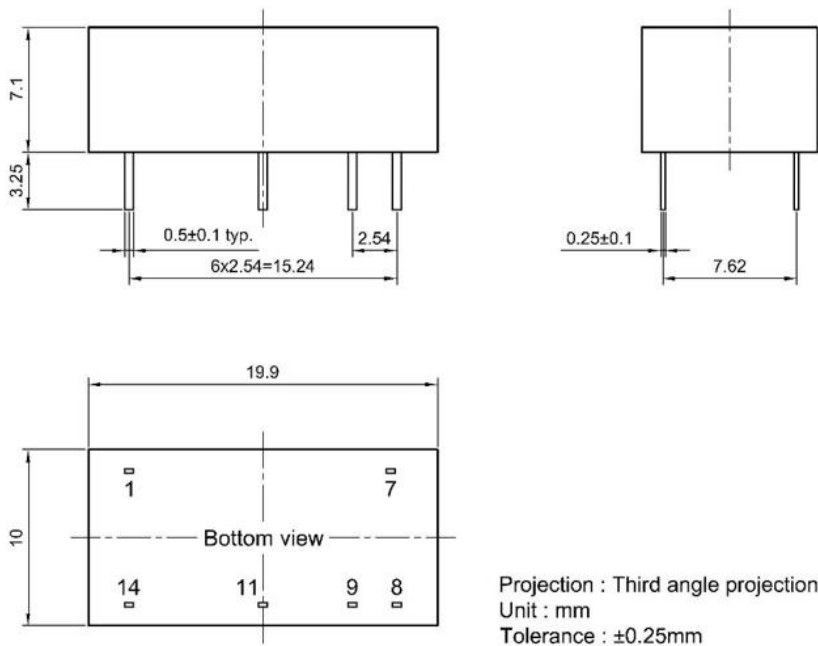


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Mechanical Dimension & Pinning



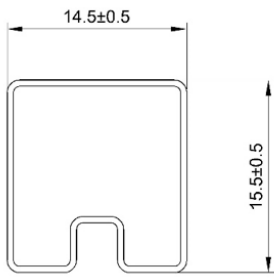
Pin	Single	Dual
1	-Vin	-Vin
7	NC	NC
8	-Vout	Com
9	+Vout	+Vout
11	NC	-Vout
14	+Vin	+Vin

NC= No Connection

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Package



UNIT:mm
1 Tube = 24 pcs
Length:520±2mm

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