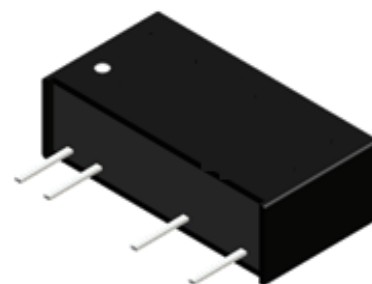


### Features

- 2 Watts output power
- 1:1 input voltage range
- 5.2KVDC isolation for 1 minute
- -40°C to +95°C operating temperature
- SIP7 package
- Meet EN60950
- EMC-EN55022
- RoHS compliant

### Application

- Input voltage range from 5-24V
- Industry control application
- Power distribution with isolated voltage solution
- No minimum load requires



### Selection Guide

Part number	Input voltage	Output voltage	Output current @ full load	Efficiency <sup>(1)</sup> (typ.)	Capacitive load <sup>(2)</sup> (max.)
P2-053.3J	5 VDC	3.3 VDC	606 mA	70%	680µF
P2-0505J		5 VDC	400 mA	75%	680µF
P2-0509J		9 VDC	223 mA	77%	330µF
P2-0512J		12 VDC	167 mA	77%	150µF
P2-0515J		15 VDC	134 mA	77%	150µF
P2-053.3DJ		±3.3 VDC	±303 mA	73%	±330µF
P2-0505DJ		±5 VDC	±200 mA	76%	±330µF
P2-0509DJ		±9 VDC	±112 mA	80%	±100µF
P2-0512DJ		±12 VDC	±84 mA	78%	±100µF
P2-0515DJ		±15 VDC	±67 mA	79%	±100µF
P2-123.3J	12 VDC	3.3 VDC	606 mA	75%	680µF
P2-1205J		5 VDC	400 mA	78%	680µF
P2-1209J		9 VDC	223 mA	78%	330µF
P2-1212J		12 VDC	167 mA	82%	150µF
P2-1215J		15 VDC	134 mA	85%	150µF
P2-123.3DJ		±3.3 VDC	±303 mA	78%	±330µF
P2-1205DJ		±5 VDC	±200 mA	79%	±330µF
P2-1209DJ		±9 VDC	±112 mA	83%	±100µF
P2-1212DJ		±12 VDC	±84 mA	83%	±100µF
P2-1215DJ		±15 VDC	±67 mA	86%	±100µF
P2-121505J	+15/-5 VDC	+107/-80 mA	85%	150/680µF	
P2-243.3J	24 VDC	3.3 VDC	606 mA	76%	680µF
P2-2405J		5 VDC	400 mA	75%	680µF
P2-2409J		9 VDC	223 mA	82%	330µF
P2-2412J		12 VDC	167 mA	81%	150µF
P2-2415J		15 VDC	134 mA	81%	150µF
P2-243.3DJ		±3.3 VDC	±303 mA	76%	±330µF
P2-2405DJ		±5 VDC	±200 mA	84%	±330µF
P2-2409DJ		±9 VDC	±112 mA	83%	±100µF
P2-2412DJ		±12 VDC	±84 mA	85%	±100µF
P2-2415DJ		±15 VDC	±67 mA	86%	±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 "P" after P/N for short circuit protection.

### Part Number

**P 2 - 05 05 D J**  
 Input voltage      Output Voltage      Dual outputs

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## Specifications

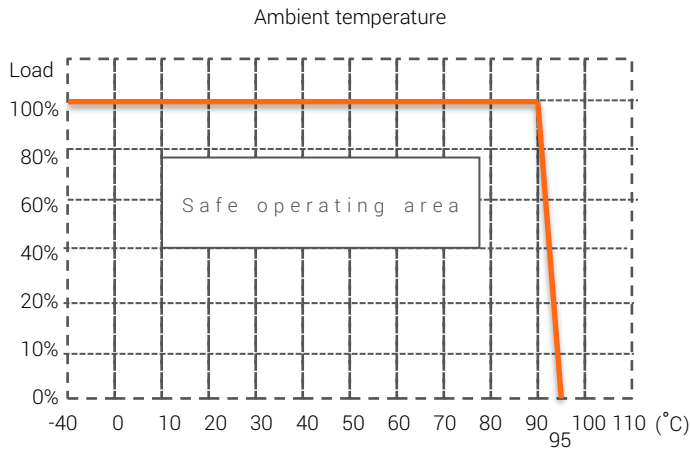
	Parameter	Conditions	Min.	Typ.	Max.	Unit
Input	Input filter			Internal capacitors		
	Input voltage range		-10		+10	%
Output	Voltage accuracy		-5		+5	%
	Minimum load		0			%
	Line regulation	LL to HL at 100% load		1.2% typ.@1% of Vin		
	Load regulation	Vo=3.3 / 5VDC	6.0	10.0	15.0	%
	(10% to 100% Load)	Vo=9 - 15 VDC	4.0	8.0	10.0	%
	Ripple & noise	@20MHZ BW (@Nominal Vin)		100	200	mVp-p
	Operating frequency	100% Load at Nominal Vin		50		KHz
Environment	Operating temperature		-40		95	°C
	Storage temperature		-55		125	°C
	Max. case temperature				105	°C
	Relative humidity		5		95	%RH
Function	Isolation voltage	1 min., Input to output	5.2			KVDC
	Isolation resistance		15			GΩ
	Isolation capacitance				10	pF
	Short Circuit Protection	Option		Continuous		
	MTBF	25°C			15.4*10 <sup>6</sup>	Hours
	Vibration			MIL-STD-202G		
	Safety approvals			Meet EN60950 / EN60601		
Physical	Case material			UL94V-0 black plastic		
	Potting material			Epoxy (UL94V-0)		
	Dimension			19.50x9.80x12.50 mm		
	Weight			4.3		g
EMC	EMI	EN55022		Class A/B		
	ESD	EN61000-4-2,		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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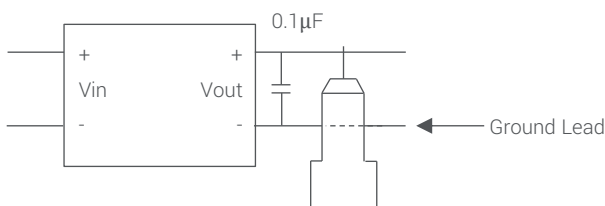
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## Derating Curve

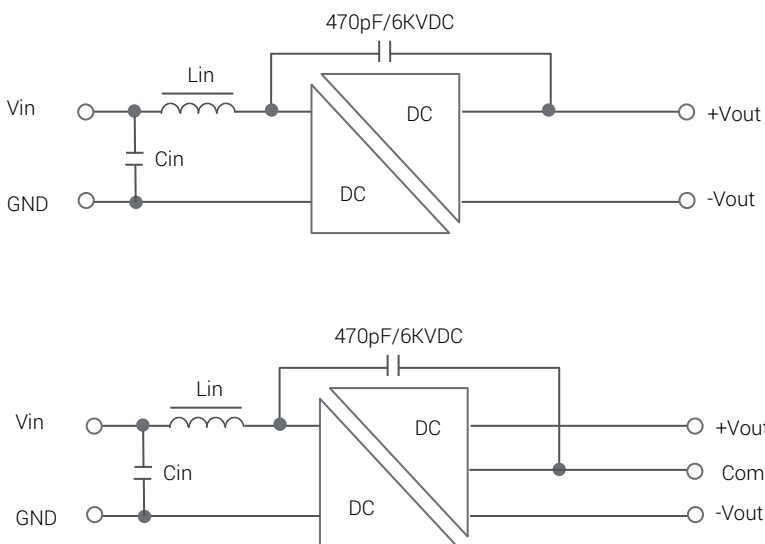


The derating curve was measured at nominal  $V_{in}$  in chamber with forced air convection.

## Ripple & Noise Measure Method



## EMI filtering-suggestion for Class B



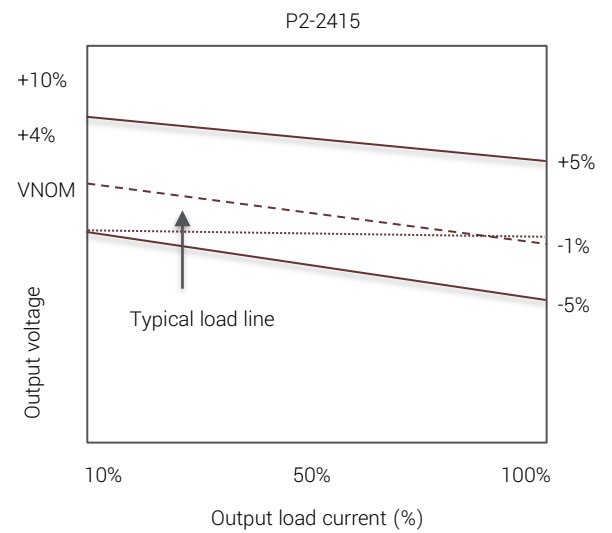
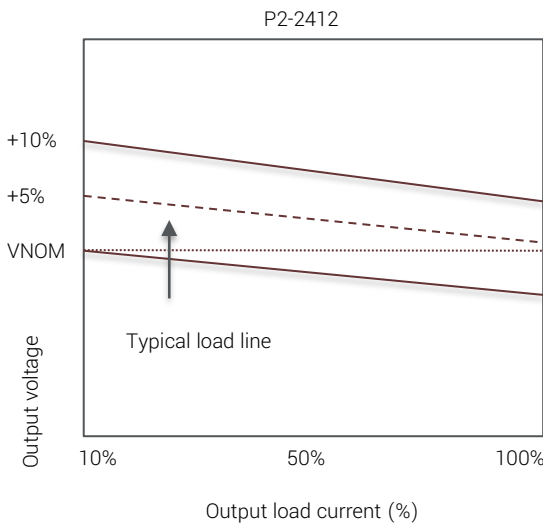
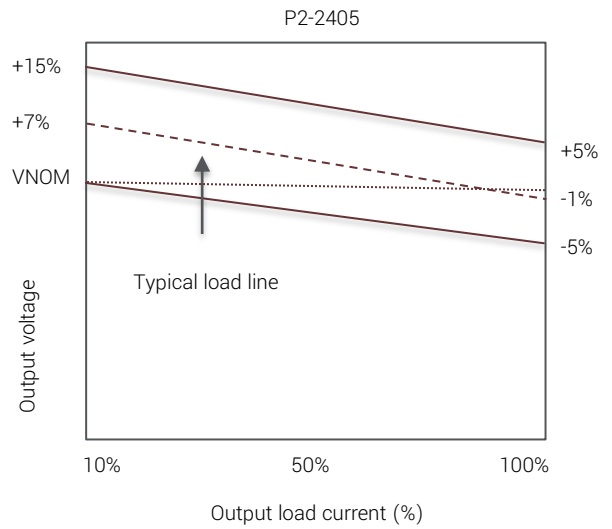
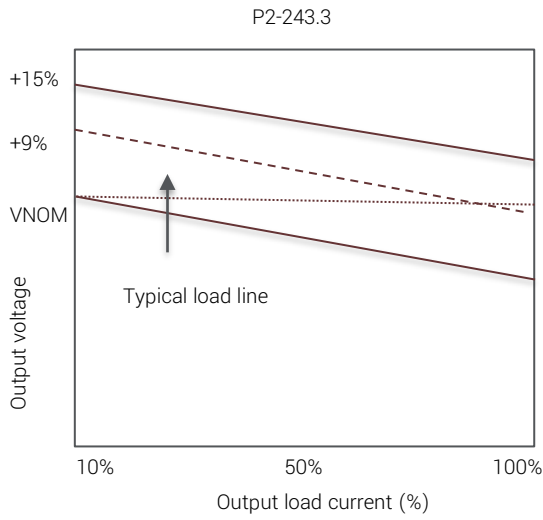
Part No.	Input voltage	Inductance/Capacitance (Lin/Cin)
P2 (Single out)	5 V	10µH/4.7µF
	12 V	22µH/4.7µF
	24 V	47µH/10µF
P2-D (Dual output)	5 V	10µH/10µF
	12 V	22µH/4.7µF
	24 V	47µH/2.2µF

The external filter for EN55022 class B.

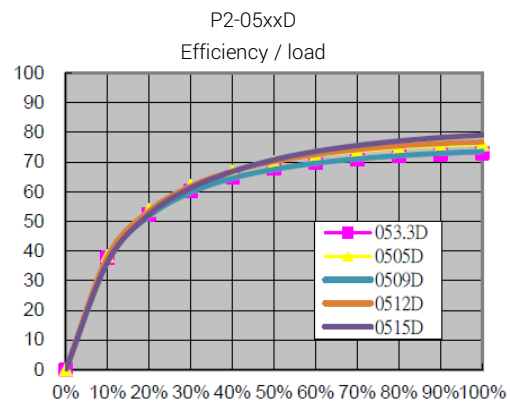
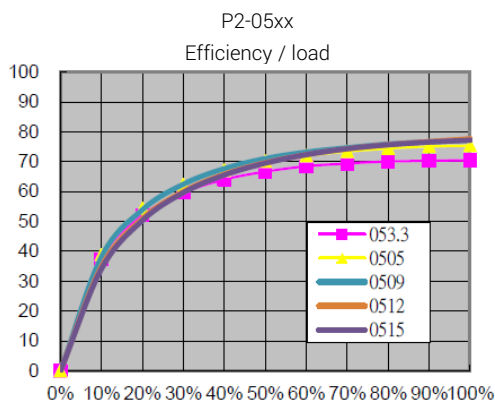
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## Tolerance Envelope

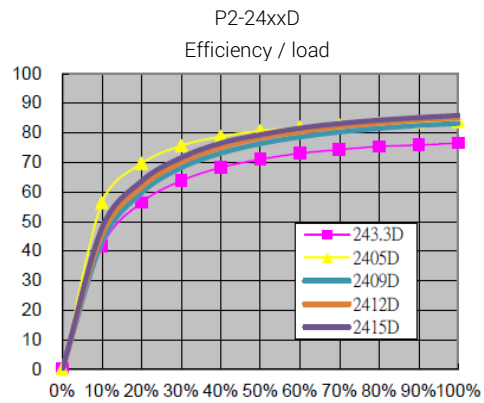
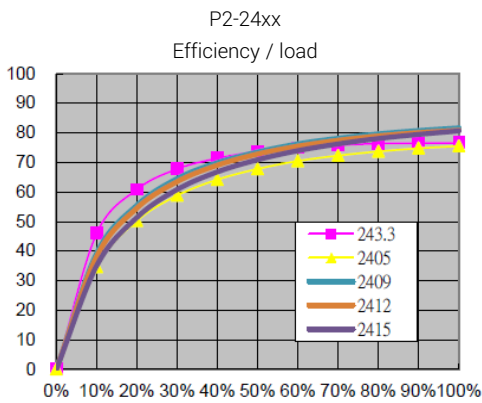
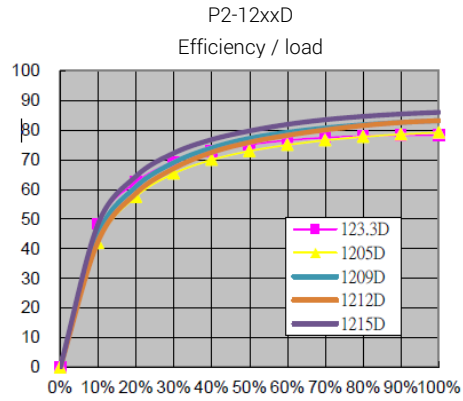
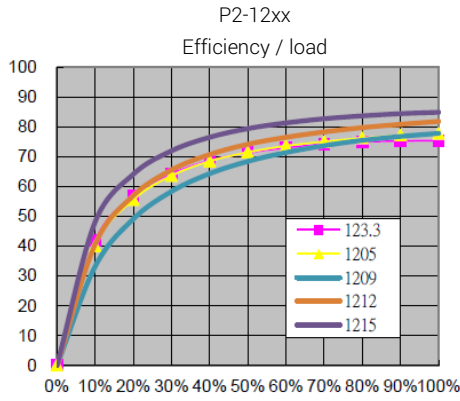


## Efficiency curve

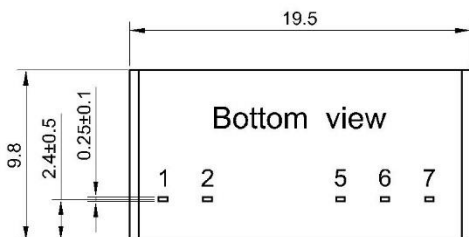
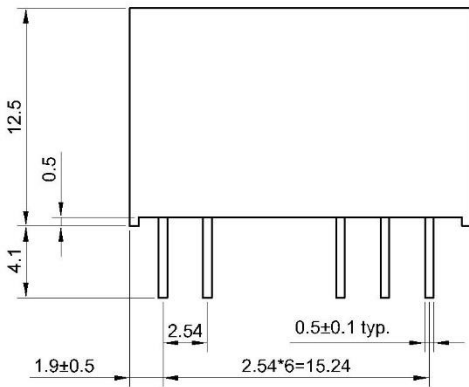


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## Mechanical Dimension & Pinning



Unit : mm  
Tolerance : ±0.25mm

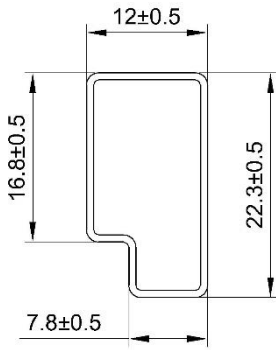
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Com
7	+Vout	+Vout

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## Package

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UNIT:mm  
1 Tube = 25 pcs  
Length:520±2mm