

# MJ1.5- Series



1.5W 2:1 Regulated Single & Dual output

## Features

- Wide 2:1 Input Range
- 1.08"X0.7"X0.28" metal case size
- Thin Profile
- Full SMD Technology
- 500 VAC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 83%
- -40 ~ 85°C Operation Temperature Range
- Over Voltage Protection
- Without Tantalum Capacitors inside



The MJ1.5-1.5W series are a family of high performance 1.5W single & dual output DC/DC converters. These converters are made with nickel-coated brass case in a 1.08"x0.7"x0.28" with high performance features such as 500 VAC input/output isolation voltage. The high performance features include: high efficiency and tight line/load regulation. Input voltages of 05, 12, 24 and 48 with output voltage of 5, 12, 15, ±12, ±15. High performance features include high efficiency operation up to 83% and output voltage accuracy of ±1% maximum.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Output Voltage Accuracy	±1%
Maximum Output Current	See table
Line Regulation	±0.5%, max
Load Regulation( I <sub>o</sub> =0% to 100%)	±1%, max(balanced load)
Cross Regulation (Dual Output) (1)	±5%
Ripple&Noise (2)	50mVp-p, max
Over Voltage Protection	5V output 6.2V
( Zener diode clamp)	12V output 15V
	15V output 18V
	±12V output ±15V
	±15V output ±18V
Short Circuit Protection	Indefinite (Automatic Recovery)
Temperature Coefficient	±0.02%/°C
Capacitive Load (3)	See table
Transient Response Deviation(4)	±3%, max

INPUT SPECIFICATIONS	
Voltage Range	See table
Max. Input Current	See table
No-Load Input Current	See table
Start up Time (Minimum Vin and constant resistive load)	20mS, max
Input Filter	LC Type
Input Reflected Ripple Current(5)	20mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table, typ
I/O Isolation Voltage(3 sec)	
Input/Output	500Vac
Metal Case/Input & Output	500Vac
I/O Isolation Capacitance	500 pF Max.
I/O Isolation Resistance	500VDC 50M Ohms
Switching Frequency	Typical 100kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.6 Mhrs
Safety Standard : (designed to meet)	IEC/EN 60950-1

PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Copper
Pin Material	Ø1.0mm Brass Solder-coated
Weight	10.0g
Dimensions	1.08"x0.7"x0.28"

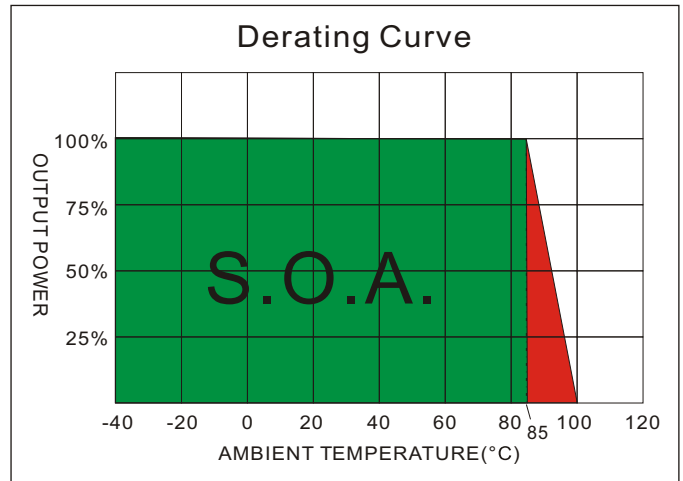
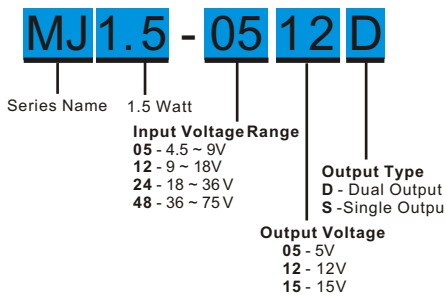
ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(6)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
05 Models	-0.7~15 Vdc
12 Models	-0.7~25 Vdc
24 Models	-0.7~50 Vdc
48 Models	-0.7~100 Vdc
Soldering Temperature (1.5mm from case 10sec.Max)	260°C Max

The information and specifications contained in this data sheet are believed to be correct at time of publication. However, MOTIEN Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

## MJ1.5 2:1 Regulated Single & Dual output

### PART NUMBER STRUCTURE

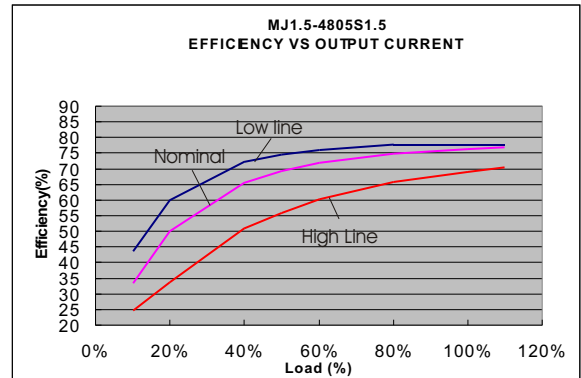
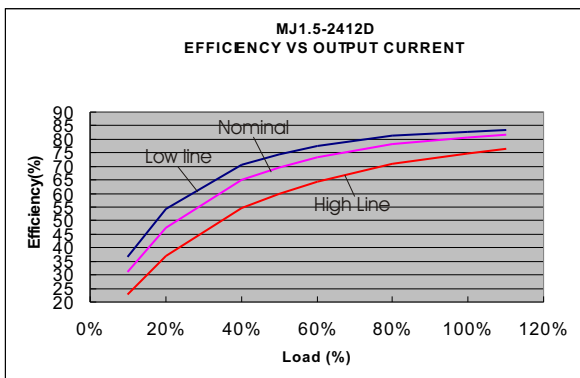
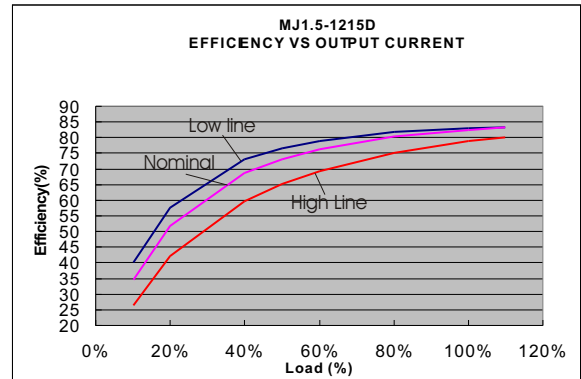
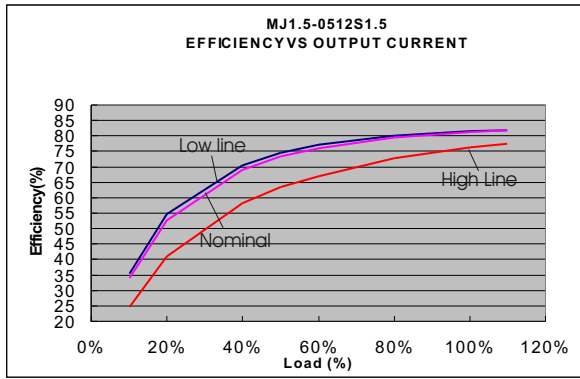


### MODEL SELECTION GUIDE

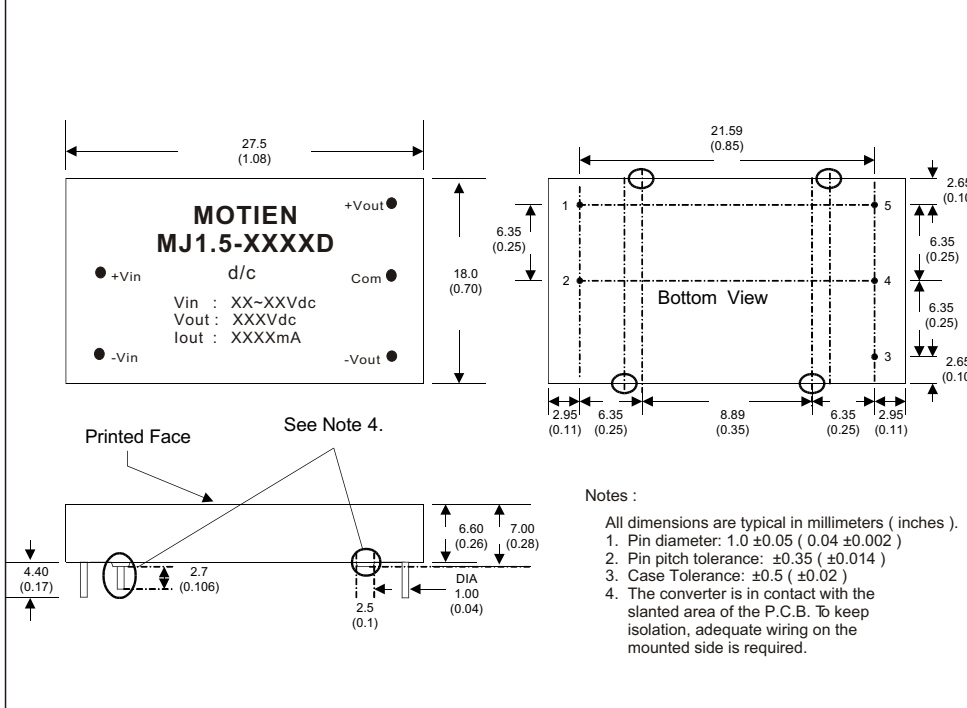
MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL (%)	Capacitor Load (uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
MJ1.5-0505S	4.5-9	60	410	5	0	300	73	100
MJ1.5-0512S	4.5-9	60	384	12	0	130	78	100
MJ1.5-0515S	4.5-9	60	384	15	0	100	78	100
MJ1.5-0512D	4.5-9	60	390	±12	0	±65	82	±100
MJ1.5-0515D	4.5-9	60	379	±15	0	±50	81	±100
MJ1.5-1205S	9-18	50	166	5	0	300	75	100
MJ1.5-1212S	9-18	50	156	12	0	130	80	100
MJ1.5-1215S	9-18	50	154	15	0	100	81	100
MJ1.5-1212D	9-18	20	160	±12	0	±65	83	±100
MJ1.5-1215D	9-18	30	154	±15	0	±50	83	±100
MJ1.5-2405S	18-36	40	84	5	0	300	74	100
MJ1.5-2412S	18-36	40	80	12	0	130	78	100
MJ1.5-2415S	18-36	40	79	15	0	100	79	100
MJ1.5-2412D	18-36	20	81	±12	0	±65	81	±100
MJ1.5-2415D	18-36	15	78	±15	0	±50	82	±100
MJ1.5-4805S	36-75	30	43	5	0	300	73	100
MJ1.5-4812S	36-75	30	40	12	0	130	78	100
MJ1.5-4815S	36-75	30	40	15	0	100	78	100
MJ1.5-4812D	36-75	10	40	±12	0	±65	80	±100
MJ1.5-4815D	36-75	10	41	±15	0	±50	79	±100

### NOTE

1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Typical value at nominal input voltage and full load.
3. Test by nominal input voltage and constant resistive load.
4. Tested by normal Vin and 50% load step change ( 100%-50% of Io, 50%-0% of Io ).
5. Measured Input reflected ripple current with a simulated source inductance of 12uH.
6. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.



**MECHANICAL SPECIFICATIONS**



PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	-V Input	-V Input
2	+V Input	+V Input
3	+V Output	+V Output
4	N.P	Common
5	-V Output	-V Output