

MJ6-6W Series



6W 2:1 Regulated Single & Dual output

Features

- Wide 2:1 Input Range
- 1.75"x1.1"x0.28" metal case size
- Thin Profile
- Full SMD Technology
- 500 VAC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 88%
- -40 ~ 85°C Operation Temperature Range
- Over Voltage Protection
- Soft Start
- Without Tantalum Capacitors inside



The MJ6-6W series are a family of high performance 6W single & dual output DC/DC converters. These converters are made with nickel-coated brass case in a 1.75"x1.1"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 3.3, 5, 12, 15, ±12, ±15. High performance features include high efficiency operation up to 88% 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(Io=0% to 100%)	±1%, max(balanced load)
Cross Regulation (Dual Output) (1)	±5%
Ripple&Noise (2)	75mVp-p, max.
Over Voltage Protection	3.3V output 3.9V (Zener diode clamp) 5V output 6.2V 12V output 15V 15V output 18V ±12V output ±15V ±15V output ±18V
Over Current Protection	185% of FL, typ.
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	PI Type
Input Reflected Ripple Current(5)	20mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table, typ.
I/O Isolation Voltage(60 sec)	
Input/Output	500Vac
Metal Case/Input & Output	500Vac
I/O Isolation Capacitance	1000 pF ,max.
I/O Isolation Resistance	500VDC 50M Ohms
Switching Frequency	Typical 330kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.28 Mhrs
Safety Standard : (designed to meet)	IEC/EN 60950-1

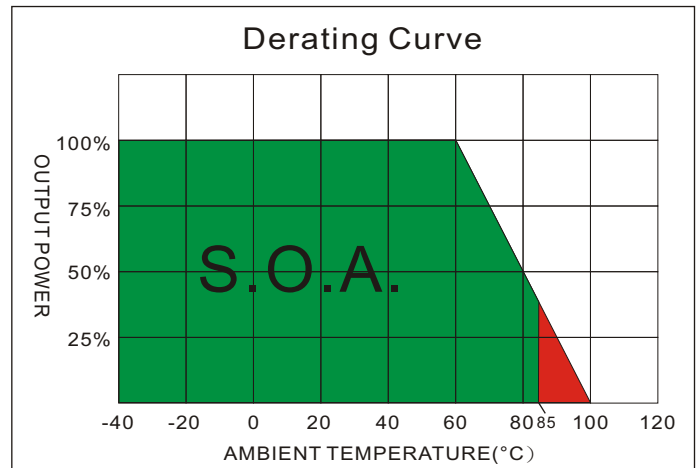
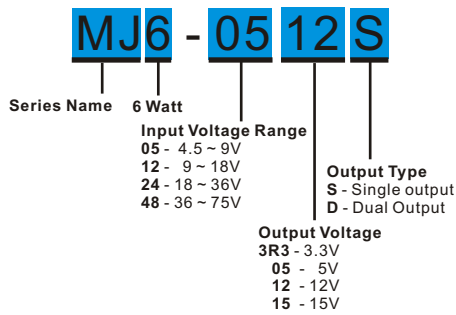
PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Copper
Pin Material	Φ1.0mm Brass Solder-coated
Weight	25.0g
Dimensions	1.75"x1.1"x0.28"

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve) -40°C~60°C(For 100%load)
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 Surge Voltage(100mS)	
05 Models	15 Vdc,max.
12 Models	36 Vdc,max.
24 Models	50 Vdc,max.
48 Models	100 Vdc,max.
Soldering Temperature (1.5mm from case 10 sec.max.)	260°C ,max.

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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)		
MJ6-053R3S	4.5-9	45	904	3.3	0	1000	73	1000
MJ6-0505S	4.5-9	45	1315	5	0	1000	76	1000
MJ6-0512S	4.5-9	45	1518	12	0	500	79	680
MJ6-0515S	4.5-9	45	1518	15	0	400	79	680
MJ6-0512D	4.5-9	50	1500	±12	0	±250	82	±220
MJ6-0515D	4.5-9	50	1500	±15	0	±200	82	±220
MJ6-123R3S	9-18	25	361	3.3	0	1000	76	1000
MJ6-1205S	9-18	25	617	5	0	1200	81	1200
MJ6-1212S	9-18	25	588	12	0	500	85	680
MJ6-1215S	9-18	25	588	15	0	400	85	470
MJ6-1212D	9-18	15	581	±12	0	±250	88	±220
MJ6-1215D	9-18	15	581	±15	0	±200	88	±220
MJ6-243R3S	18-36	25	226	3.3	0	1200	73	1200
MJ6-2405S	18-36	25	312	5	0	1200	80	1200
MJ6-2412S	18-36	25	297	12	0	500	84	680
MJ6-2415S	18-36	25	290	15	0	400	86	470
MJ6-2412D	18-36	10	290	±12	0	±250	88	±220
MJ6-2415D	18-36	10	290	±15	0	±200	88	±220
MJ6-483R3S	36-75	25	111	3.3	0	1200	74	1200
MJ6-4805S	36-75	25	156	5	0	1200	80	1200
MJ6-4812S	36-75	25	148	12	0	500	84	680
MJ6-4815S	36-75	25	147	15	0	400	85	470
MJ6-4812D	36-75	6	147	±12	0	±250	87	±220
MJ6-4815D	36-75	6	145	±15	0	±200	88	±220

NOTE

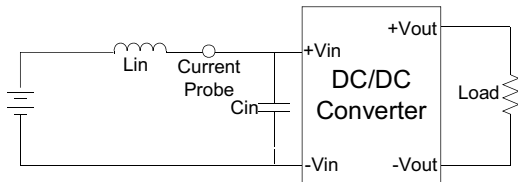
1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Measured with 20MHz bandwidth and 1.0uF ceramic capacitor.
3. Test by nominal input voltage and constant resistive load.
4. Tested by normal Vin and 50% load step change (100%-50% of Io,50%-0% 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.

The models listed above is just for standard type. If you need the special specification product, please contact our service member by telephone presented in shortform cover or e-mail to : sales@motien.com.tw

TEST CONFIGURATIONS

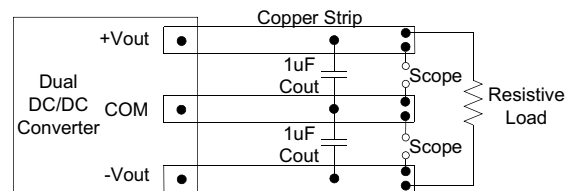
Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor L_{in} (4.7uH) and a source capacitor C_{in} (47uF, ESR<1.0Ω at 100KHz) at nominal input and full load.

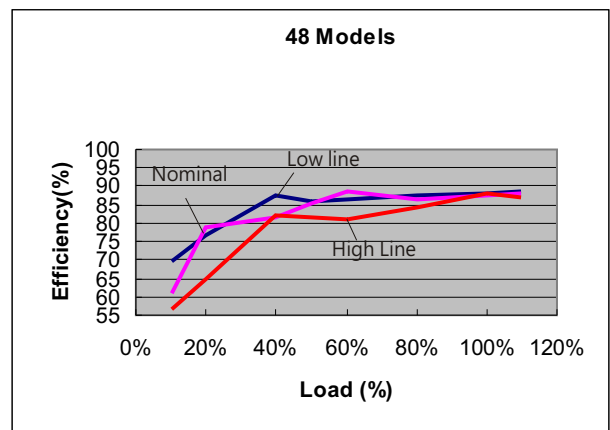
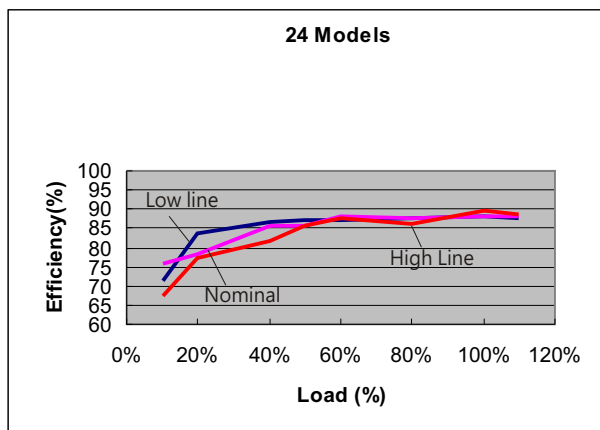
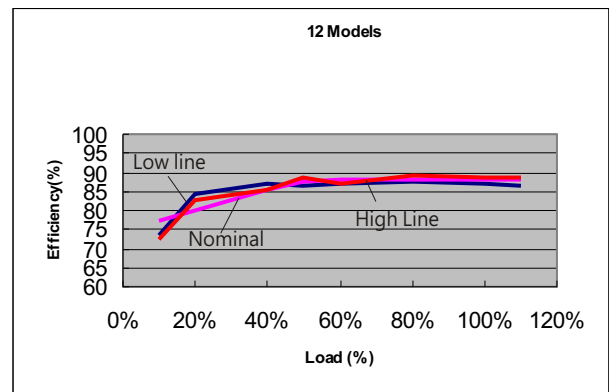
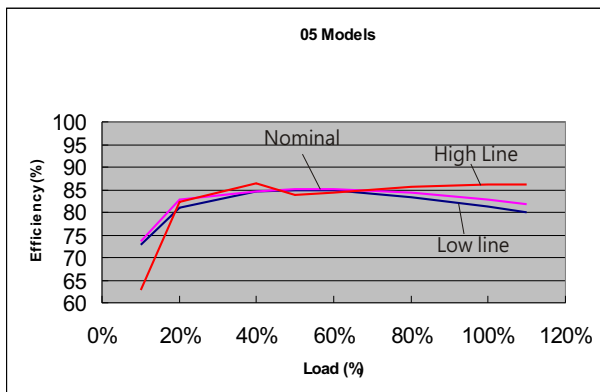


Output Ripple & Noise Measurement Test

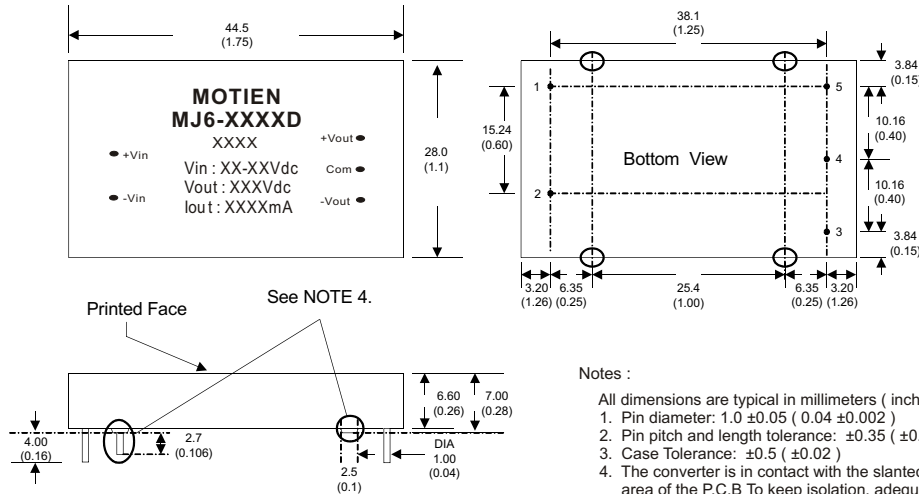
Use a capacitor C_{out} (1.0uF) measurement. The Scope measurement bandwidth is 0-20MHz.



EFFICIENCY VS OUTPUT CURRENT



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

- Notes :
- All dimensions are typical in millimeters (inches).
 - 1. Pin diameter: 1.0 ±0.05 (0.04 ±0.002)
 - 2. Pin pitch and length tolerance: ±0.35 (±0.014)
 - 3. Case Tolerance: ±0.5 (±0.02)
 - 4. The converter is in contact with the slanted area of the P.C.B To keep isolation, adequate wiring on the mounted side is required.