

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(I _o =0% to 100%)	±1%, max(balanced load)
Cross Regulation (Dual Output) (1)	±5%
Ripple&Noise (2)	75mVp-p, max
	3.3V output 3.9V
	5V output 6.2V
Over Voltage Protection	12V output 15V
(Zener diode clamp)	15V output 18V
	±12V output ±15V
	±15V output ±18V
Over Current Protection	185% of FL, typ
Short Circuit Protection	Indefinite(hiccup) (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	20mS, max
(Minimum Vin and constant resistive load)	
Input Filter	PI 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	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	Ø1.0mm Brass Solder-coated
Weight	25.0g, max
Dimensions	1.75"x1.1"x0.28"

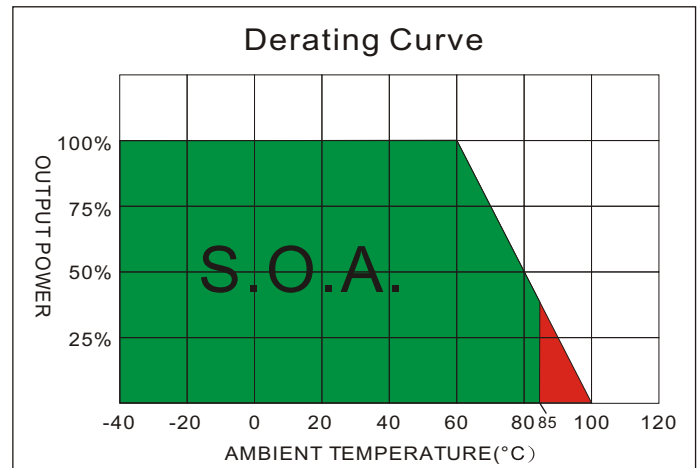
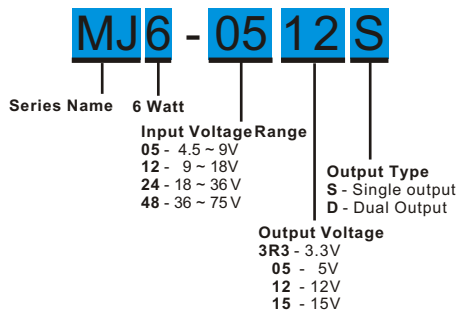
ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve)
	-40°C~60°C(For 100% load)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(6)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
05 Models	-0.7~15 Vdc
12 Models	-0.7~36 Vdc
24 Models	-0.7~50 Vdc
48 Models	-0.7~100 Vdc
Soldering Temperature	260°C max.
(1.5mm from case 10sec. Max.)	

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MJ6 - 6W 2:1 Regulated Single & Dual output

PART NUMBER STRUCTURE



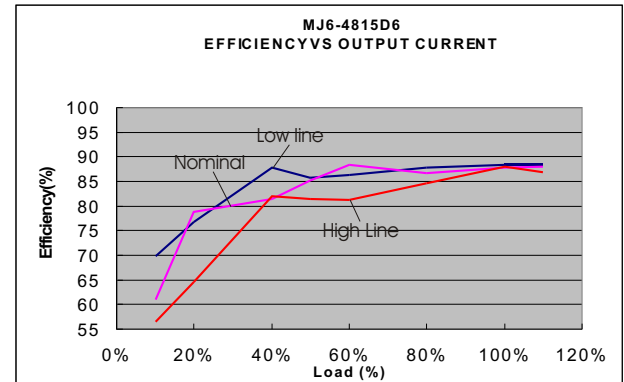
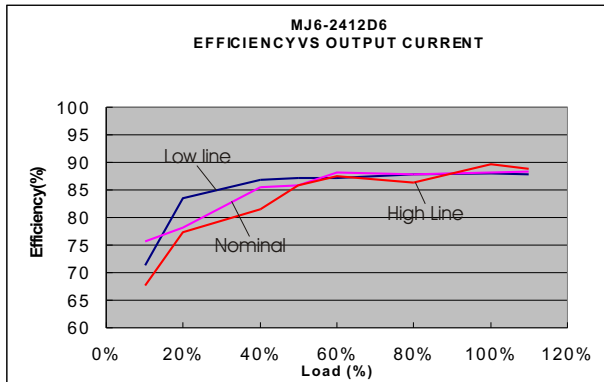
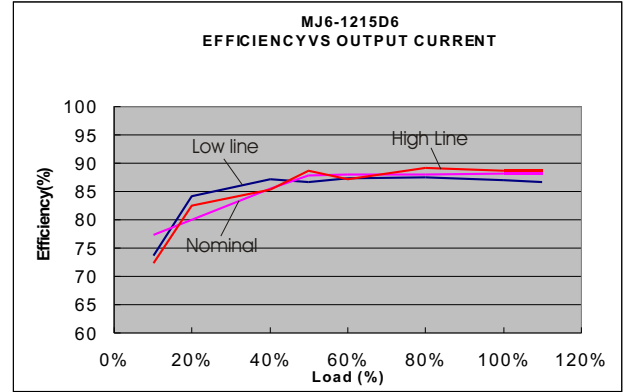
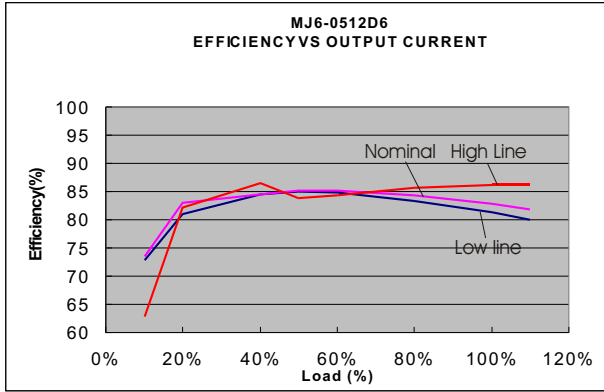
MODEL SELECTION GUIDE

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)		
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

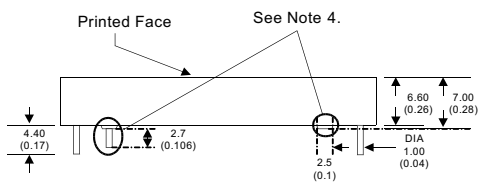
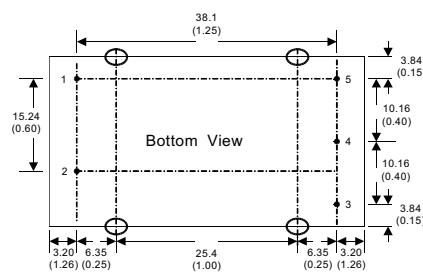
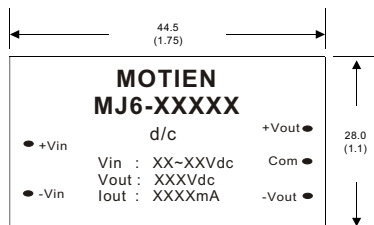
NOTE

1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Typical value at nominal input voltage and full load, measured by 20MHz oscilloscope.
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.

MJ6 - 6W2:1 Regulated Single & Dual output



MECHANICAL SPECIFICATIONS



Notes :

- All dimensions are typical in millimeters (inches).
- 1. Pin diameter: 1.0 ± 0.05 (0.04 ± 0.002)
- 2. Pin pitch 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.

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