



3MS4A_1.5UP series

3W - Single Output DC-DC Converter - Micro Size Fixed Input - Isolated & Unregulated

DC-DC Converter

3 Watt

- ⊕ Micro size SIP4 package
- ⊕ 1.5kVDC isolation
- ⊕ High efficiency to 86%
- ⊕ Power density 2.0W/cm²
- ⊕ Input voltage: 5V, 12V
- ⊕ UL 94V-0 package material
- ⊕ Operating temperature range -40°C to +105°C
- ⊕ Footprint from 1.05cm²
- ⊕ Unregulated output types
- ⊕ Continuous Short Circuit Protection
- ⊕ Industry standard pinout

3MS4A_1.5UP series are miniature, isolated 3W DC-DC converters in a SIP package. They offer the ideal solution in many space critical applications for board level power distribution. The internal SMD construction makes it possible to offer a product with high performance at low cost. The series offers smaller size, improved efficiency, lower output ripple noise



Common specifications	
Cooling:	Free air convection
Operation temperature range:	-40°C to +105°C (Derating if the temp. ≥85°C)
Storage temperature range:	-50°C to +130°C
Case temperature above ambient:	5V output 46°C Other output 38°C
Switching frequency:	5V input 95 kHz (Typ.) 12V input 95 kHz (Typ.)
Peak wave solder temperature:	300°C for 10 seconds
Case material:	UL 94V-0
Weight:	2.0g (Typ.)

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Rated power	TA = -40°C to 85°C			3.0	W
Voltage set point accuracy	See tolerance envelope				
Line regulation	High VIN to low VIN (voltage variation +/-5%)			1.2	%/%
Load regulation(10% load to rated load)	3.3V & 5V output			9	%
	9V output			5	%
	12V output			6	%
	15V output			9	%

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation test voltage	Tested for 1 second	1500			VDC
Isolation Resistance	Viso = 500VDC	1			GΩ

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage range	5V input variants	4.5	5.0	5.5	V
	12V input variants	11	12.0	13.3	V
Reflected ripple current	5V input variants		35		mA p-p
	12V input variants		40		mA p-p

Example:

3MS4A_0505S1.5UP

3 = 3 Watt; MS4 = Micro SIP4; A = Pinning; 05 = 5 Vin; 05 = 5Vout; S = Single Output; 1.5 = 1.5kVDC Isolation; U = Unregulated; P = Short circuit protection

Product Selection Guide

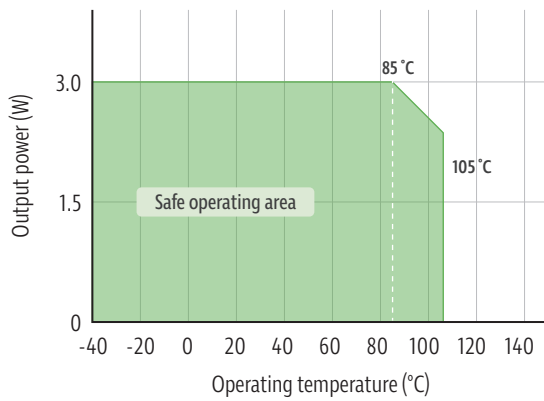
Model	Nominal Input Voltage (V)	Output Voltage (V)	Output Current (Max./Min) mA	Efficiency(%)
3MS4A_0503S1.5UP	5	3.3	909/90.9	80
3MS4A_0505S1.5UP	5	5	600/60	77
3MS4A_0509S1.5UP	5	9	333/33.3	80
3MS4A_0512S1.5UP	5	12	250/25	83
3MS4A_0515S1.5UP	5	15	200/20	82
3MS4A_1203S1.5UP	12	3.3	909/90.9	80
3MS4A_1205S1.5UP	12	5	600/60	80
3MS4A_1209S1.5UP	12	9	333/33.3	84
3MS4A_1212S1.5UP	12	12	250/25	86
3MS4A_1215S1.5UP	12	15	200/20	85
3MS4A_2405S1.5UP	24	5	600/60	75
3MS4A_2409S1.5UP	24	9	333/33.3	75
3MS4A_2412S1.5UP	24	12	250/25	75

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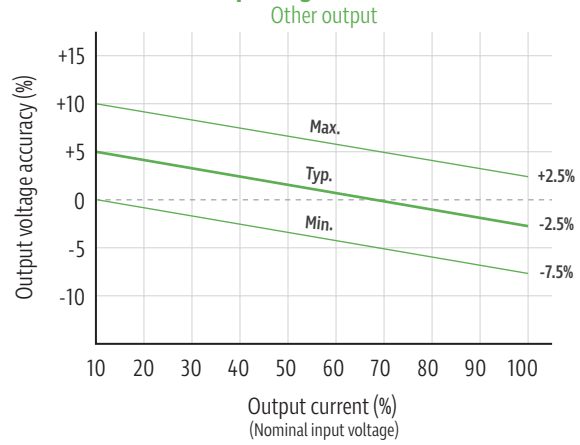
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Product characteristic curve

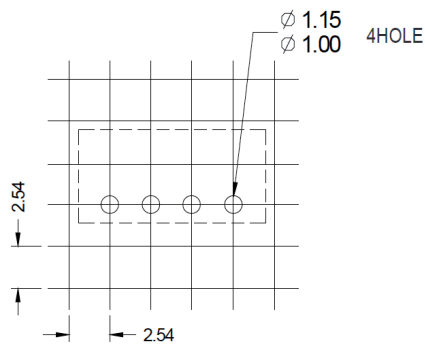
Temperature derating graph



Output regulation curve

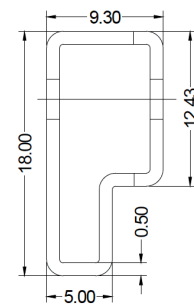


Recommended footprint



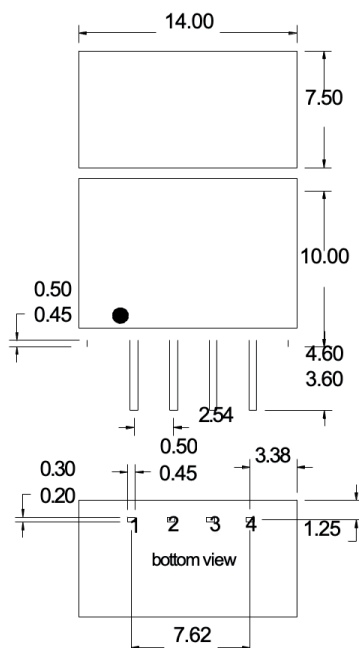
Unless otherwise stated all dimensions mm ±0.5mm.

Tube outline dimensions



Note:
 Tube length : 520mm ±2mm.
 Tube Quantity : 35pcs/17pcs
 Unless otherwise stated all dimensions in mm ±0.5mm.

Mechanical dimensions



All dimensions in mm ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position.

4 PIN SIP	
Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout