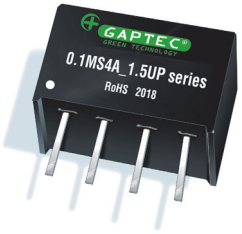
0.1MS4A_1.5UP Series

0.1W - Single Output DC-DC Converter - Fixed Input - Isolated & Unregulated



DC-DC Converter 0.1 Watt

- **Efficiency up to 81%**
- **1500VDC isolation**
- **Operating temperature range: -40°C ~ +105°C**
- **Short circuit protection (SCP)**
- **Power density 0.36W/cm³**
- **Industry standard pinout**
- **RoHS compliance**
- **MTBF >1,000,000 hours**
- **UL 94V-0 package material**

The 0.1MS4A_1.5UP series are miniature, isolated 0.1W 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.

Common specifications	
Short circuit protection:	continuous
Case temperature rise above ambient:	+35°C max. 0505 & 1205
Cooling:	Free air convection
Operation temperature range:	-40°C~+105°C
Storage temperature range:	-50°C ~+130°C
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	< 95%
Case material:	Non-conductive plastic [UL94-V0]
MTBF (MIL-HDBK-217F @25°C):	>1,000,000 hours
Weight:	1.09g

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage range	• 3.3V input • 5V input • 12V input	2.9 4.5 11	3.3 5 12	3.6 5.5 13.3	V V V
input voltage	Absolut max. rating • 3.3V input • 5V input • 12V input			 5.5 7 15	 V V V
Internal filter	Capacitor				
No load current				13mA	

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 10sec.	1500			VDC
Isolation resistance	Test at 500VDC	1			GΩ

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Minimum load	10% of full load				
Voltage set point accuracy				±2	W
Line regulation	High to low Vin (±5%)			±1.2	%
Load regulation	10% to 100% load • 3.3V output & 0309 • 5V output • 9V output • 12V output •15V output			 15 15 10 10 9	 % % % % %
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load			±0.05	%/°C
Ripple & Noise*	20MHz Bandwidth		50	100	mVp-p
Switching frequency	Full load, nominal input		120		KHz

* Measured with 1uF ceramic capacitor connect to the output pins.

Example:
0.1MS4A_0505S1.5UP
0.1 = 0.1 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

Note:
1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed, and that will reduce the life of product.
2. All specifications measured at Ta = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
3. Only typical models listed, other models may be different, please contact our technical person for more details.
4. In this datasheet, all the test methods of indications are based on corporate standards.

GAPTEC-Electronic GmbH & Co. KG
sales@gaptec-electronic.com – www.gaptec-electronic.com

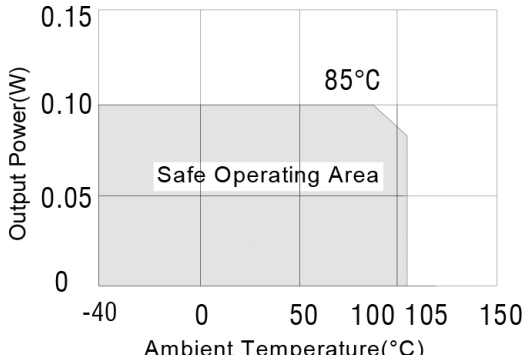
0.1MS4A_1.5UP Series

0.1W - Single Output DC-DC Converter - Fixed Input - Isolated & Unregulated

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA]		Efficiency [%]
			min	max	
0.1MS4A_0303S1.5UP	3.3	3.3	3.03	30.3	71
0.1MS4A_0305S1.5UP	3.3	5	2	20	74
0.1MS4A_0309S1.5UP	3.3	9	1.11	11.1	75
0.1MS4A_0503S1.5UP	5	3.3	3.03	30.3	71
0.1MS4A_0505S1.5UP	5	5	2	20	75
0.1MS4A_0509S1.5UP	5	9	1.11	11.1	74
0.1MS4A_0512S1.5UP	5	12	0.83	8.3	74
0.1MS4A_0515S1.5UP	5	15	0.67	6.7	69
0.1MS4A_1205S1.5UP	12	5	2	20	74
0.1MS4A_1209S1.5UP	12	9	1.11	11.1	78
0.1MS4A_1212S1.5UP	12	12	0.83	8.3	78
0.1MS4A_1215S1.5UP	12	15	0.67	6.7	74

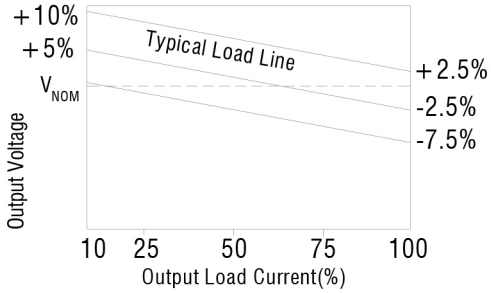
Typical characteristics

Temperature derating graph:

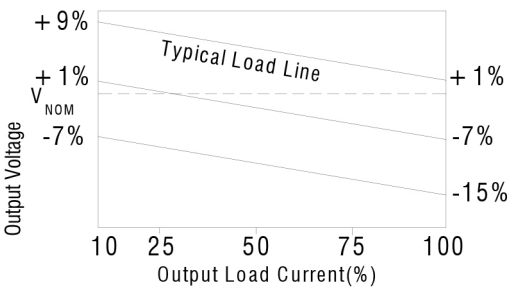


Tolerance envelope

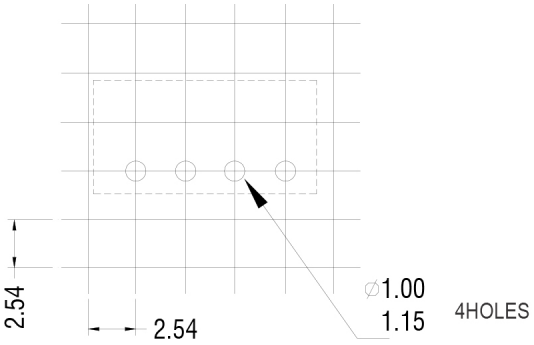
All other types



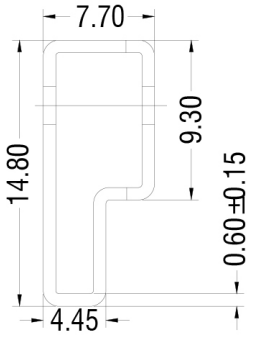
3.3V output types



Recommended footprint

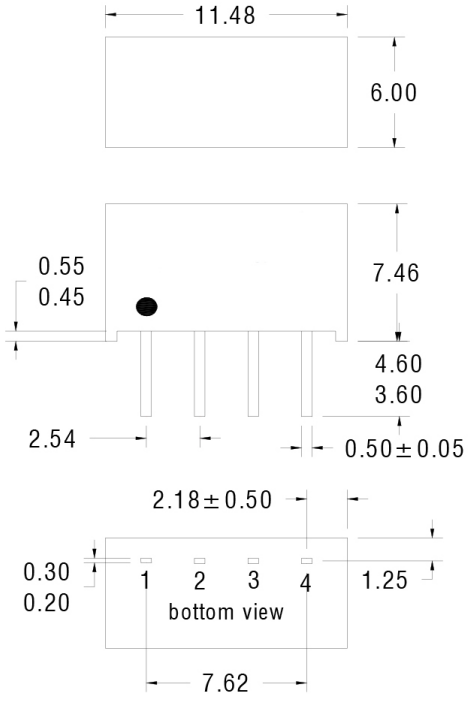


Tube outline dimensions



Note:
Tube length: 525mm ±2mm
Tube quantity: 40Pcs

Mechanical dimensions



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

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