



The HS2-XXYYS10Z15 series are miniature, isolated 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, lower output ripple noise



**FEATURES:**

- RoHS compliant
- Efficiency up to 81%
- UL 94V-0 package material
- Input voltage: 3.3V, 5V, 12V, 15V, 24V, 48V
- Single isolated output
- Operating temperature :-40 to 105 (3.3-12V)
- Operating temperature :-40 to 85 (15-48V)
- Footprint from 0.69cm<sup>2</sup>
- Output voltage: 3.3V, 5V, 9V, 12V, 15V & 24V
- Industry Standard Pinout
- Custom Solutions available (15-48V)
- 1.5KVDC isolation Power density
- 1.53W/cm<sup>3</sup> (3.3-12V)
- Power density 1.45W/cm<sup>3</sup> (15-48V)
- Industry standard pinout
- Isolation 1.5KVDC
- Optional: Continuous short circuit protection

H-Model	Nominal Input Voltage (V)	Output Voltage (V)	Output Current (Max./Min) (mA)	Efficiency (%)	Package Style
HS2-0303S10Z15	3,3	3,3	303/30.3	72	SIP4
HS2-0305S10Z15	3,3	5	200/20	74	SIP4
HS2-0503S10Z15	5	3,3	303/30.3	72	SIP4
HS2-0505S10Z15	5	5	200/20	70	SIP4
HS2-0509S10Z15	5	9	110/11	78	SIP4
HS2-0512S10Z15	5	12	83/8.3	78	SIP4
HS2-0515S10Z15	5	15	66/6.6	80	SIP4
HS2-0524S10Z15	5	24	42/4.2	79	SIP4
HS2-1203S10Z15	12	3,3	303/30.3	72	SIP4
HS2-1205S10Z15	12	5	200/20	71	SIP4
HS2-1209S10Z15	12	9	110/11	73	SIP4
HS2-1212S10Z15	12	12	83/8.3	76	SIP4
HS2-1215S10Z15	12	15	66/6.6	74	SIP4
HS2-1505S10Z15	15	5	200/20	71	SIP4
HS2-1515S10Z15	15	15	67/6.7	78	SIP4
HS2-2403S10Z15	24	3,3	303/30.3	71	SIP4
HS2-2405S10Z15	24	5	200/20	71	SIP4
HS2-2409S10Z15	24	9	111/11.1	75	SIP4
HS2-2412S10Z15	24	12	83/8.3	80	SIP4
HS2-2415S10Z15	24	15	66/6.6	80	SIP4
HS2-2424S10Z15	24	24	41.5/4.15	80	SIP4
HS2-4805S10Z15	48	5	200/20	70	SIP4
HS2-4809S10Z15	48	9	111/11.1	75	SIP4
HS2-4812S10Z15	48	12	83/8.3	81	SIP4
HS2-4815S10Z15	48	15	66/6.6	81	SIP4

Package Unit: 35

Add suffix "P" for continuous short circuit protection e.g. „HS2-0305S10Z10P“.

The models listed above is just for standard type. If you need the special specification product, please contact our specialists: [sales@haufe-power.de](mailto:sales@haufe-power.de)

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**INPUT CHARACTERISTICS (Min./Typ./Max.):**

Voltage range 3.3V input types (V):	2.9 / 3.3 / 3.6
Voltage range 5V input types (V):	4.5 / 5.0 / 5.5
Voltage range 12V input types (V) :	11 / 12 / 13.3
Voltage range 15V input types (V):	13.4 / 15 / 16.4
Voltage range 24V input types (V):	21.6 / 24 / 26.4
Voltage range 48V input types (V):	43.2 / 48 / 52.8
Reflected ripple current (mA p-p) (3.3V, 5V, 12V):	- / 26 / 48

**ISOLATION CHARACTERISTICS:**

Isolation test voltage (VDC):	1500
	Tested for 1 second
Resistance (Viso = 1000 VDC) (GΩ):	1 / - / -

**ABSOLUTE MAXIMUM RATINGS:**

Short-circuit protection:	1 second (15-48V)
Lead temperature 1.5mm from case for 10 seconds:	300°C (15-48V)
Input voltage Vin:	18V / 28V / 54V (15V / 24V / 48V)

**OUTPUT CHARACTERISTICS (Min. / Typ. / Max.):**

Rated Power TA= -40°C to 85°C (W):	- / - / 1.0
Voltage Set Point Accuracy (%):	See tolerance envelope
Line regulation High VIN to low VIN (%):	- / 1.0 / 1.2
Load Regulation 3.3V output types (%):	- / 14 / 15
Load Regulation (***) 5V output types (%):	- / 14 / 15 (3.3-12V) - / - / 15 (15-48V)
Load Regulation (***) 9V output (%):	- / 9 / 10
Load Regulation (***) 12V output (%):	- / 7.5 / 9.5
Load Regulation (***) 15V output (%):	- / 7.0 / 8.5
Load Regulation (***) 24V output (%):	- / 5.5 / 7.5
Load Regulation (***) All other types (output) (%):	- / - / 10 (15-48V)

**(\*\*\* = 10% load to rated load)**

**Output Characteristics Notes:**

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

**GENERAL CHARACTERISTICS (Min. / Typ. / Max.)**

Switching frequency (all input types) (kHz):	- / 100 / - (15-48V)
Switching frequency 3.3V input (kHz):	- / 95 / -
Switching frequency 5V input (kHz):	- / 110 / -
Switching frequency 12V input (kHz):	- / 145 / -

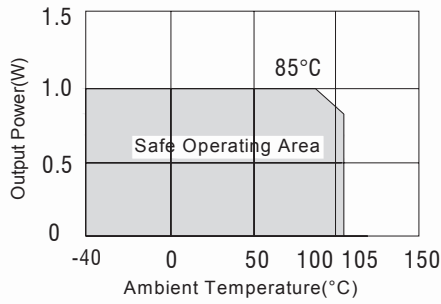
**TEMPERATUR CHARACTERISTICS (Min. / Typ. / Max.)**

Derating if the temperature is ≥85°C (°C):	-40 / - / 105
Storage temperature (°C):	-55 / - / 150
Case temperature above ambient. 5V output (°C):	- / - / 41
Case temperature above ambient. All other output (°C):	- / - / 32
All output types (°C):	-40 / - / 85
Cooling:	Free air convection

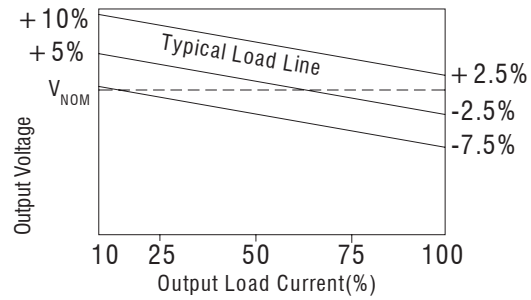
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**TEMPERATURE DERATING GRAPHS**



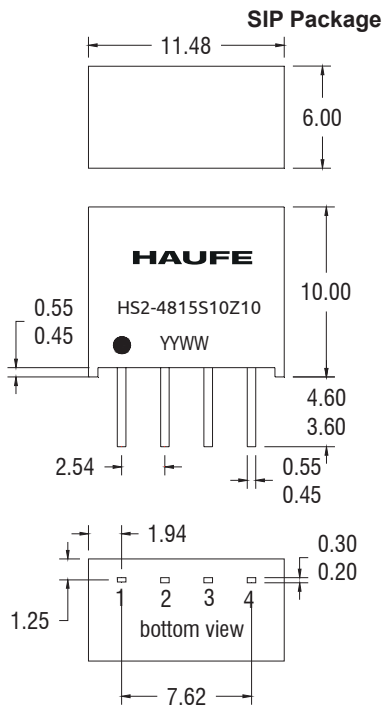
**TOLERANCE ENVELOPES**



**SOLDERING INFORMATION**

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. Both types in this series are backward compatible with Sn/Pb soldering systems.

**MECHANICAL DIMENSION**

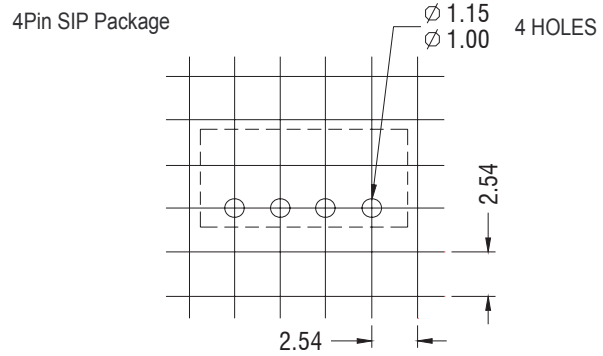


All dimensions in mm ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position. Weight: 1.30g (SIP)

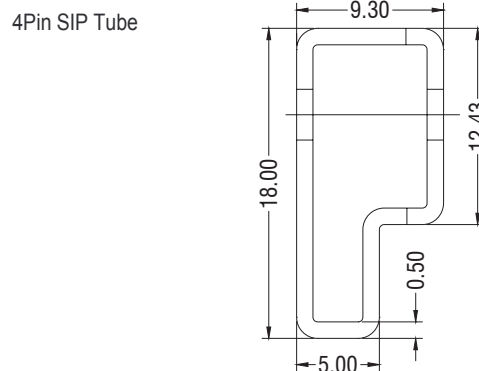
**PIN CONNECTIONS**

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

**RECOMMENDED FOOTPRINT DETAILS**



**TUBE OUTLINE DIMENSIONS**



Unless otherwise stated, all dimensions in mm ±0.5mm  
Tube length (4 Pin SIP): 520mm ±2mm