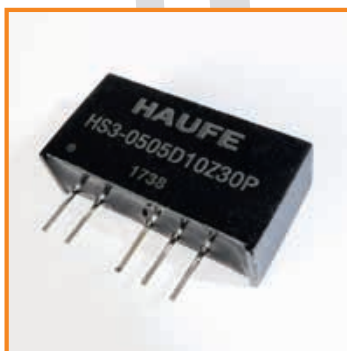




The HS3 series are miniature, isolated 1W DC/DC converters in a SIP package. They offer the ideal solution in many space critical applications for board level power distribution. The internal SMD construction makes it possible to offer a product with high performance at low cost. The series offers smaller size, improved efficiency, lower output ripple noise and 3KVDC isolation.



### FEATURES:

- RoHS compliant
- Efficiency up to 81%
- Power density up to 0.86W/cm<sup>3</sup>
- Dual output from a single input rail
- UL 94V-0 package material
- No heat sink required
- 3KVDC isolation
- Industry standard pinout
- Power sharing on output
- Input voltage: 5V, 12V, 15V, 24V, 48V
- Output voltage: ±5V, ±9V, ±12V, ±15V, ±24V
- Operating temperature: -40°C to +105°C
- Optional: Continuous short circuit protection

H-Model	Nominal Input Voltage (V)	Output Voltage (V)	Output Current (Max./Min) (mA)	Efficiency (%)	Package Style
HS3-0505D10Z30	5	±5	±100/±10	67	SIP7
HS3-0509D10Z30	5	±9	±56/±5.6	76	SIP7
HS3-0512D10Z30	5	±12	±43/±4.3	79	SIP7
HS3-0515D10Z30	5	±15	±33/±3.3	78	SIP7
HS3-0524D10Z30	5	±24	±21/±2.1	81	SIP7
HS3-1205D10Z30	12	±5	±100/±10	68	SIP7
HS3-1209D10Z30	12	±9	±56/±5.6	74	SIP7
HS3-1212D10Z30	12	±12	±43/±4.3	77	SIP7
HS3-1215D10Z30	12	±15	±33/±3.3	75	SIP7
HS3-1505D10Z30	15	±5	±100/±10	71	SIP7
HS3-1512D10Z30	15	±12	±43/±4.3	77	SIP7
HS3-1515D10Z30	15	±15	±33/±3.3	80	SIP7
HS3-2405D10Z30	24	±5	±100/±10	69	SIP7
HS3-2409D10Z30	24	±9	±56/±5.6	78	SIP7
HS3-2412D10Z30	24	±12	±42/±4.2	81	SIP7
HS3-2415D10Z30	24	±15	±34/±3.4	80	SIP7
HS3-4805D10Z30	48	±5	±100/±10	70	SIP7
HS3-4809D10Z30	48	±9	±56/±5.6	79	SIP7
HS3-4812D10Z30	48	±12	±43/±4.3	79	SIP7
HS3-4815D10Z30	48	±15	±33/±3.3	79	SIP7

Package Unit: 25

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)

Add suffix "P" for continuous short circuit protection e.g. „HS3-0305D10Z30P“.

The information and specifications contained in this data sheet are believed to be correct at time of publication. However, HAUFEE GmbH & Co. KG accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.



### 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 / 5.5
Voltage range 12V input types (V) :	10.7 / 12 / 13.1
Voltage range 15V input types (V):	13.5 / 15 / 16.5
Voltage range 24V input types (V):	22 / 24 / 27
Voltage range 48V input types (V):	44 / 48 / 53

### ISOLATION CHARACTERISTICS:

Isolation test voltage (VDC):	3000 / - / - (Tested for 1 second)
Resistance (Viso = 1000 VDC) (GΩ):	1 / - / -

### ABSOLUTE MAXIMUM RATINGS:

Lead temperature 1.5mm from case for 10 seconds:	300°C
Internal power dissipation :	450mW
Input voltage Vin:	5.5V / 7V / 15V / 18V (HS3D variants: 03 / 05 / 12 / 15 / 24 / 28 / 48 / 54V)
All specs typ. at TA=25°C, nominal input voltage and rated output current unless otherwise specified	

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

Rated Power TA= -40°C to 85°C (W):	- / - / 1
Voltage Set Point Accuracy (%):	See tolerance envelope
Line regulation High VIN to low VIN (%):	- / 1 / 1.2
Load Regulation (***) 5V output types (%):	- / 10 / 13 (5V & 12V input) - / 6 / 10 (15V input) - / - / 14 (24V-48V input)
Load Regulation (***) 9V output (%):	- / 9 / 10 (5V & 12V input)
Load Regulation (***) 12V output (%):	- / 7 / 8 (5V & 12V input) - / 3 / 4 (15V input)
Load Regulation (***) 15V output (%):	- / 6 / 7 (5V & 12V input) - / 3 / 4 (15V input)
Load Regulation (***) All other types (output) (%):	- / - / 12

(\*\*\* = 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 3.3V input (kHz):	- / 95 / -
Switching frequency 5V input (kHz):	- / 110 / -
Switching frequency 12V input (kHz):	- / 130 / -
Switching frequency 15V input (kHz):	- / 90 / -
Switching frequency 24V input (kHz):	- / 110 / -
Switching frequency 48V input (kHz):	- / 110 / -

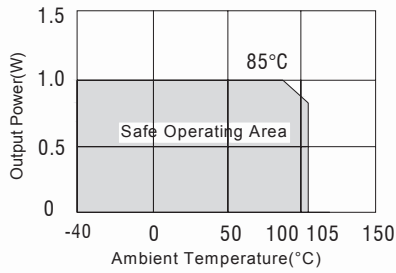
### TEMPERATUR CHARACTERISTICS (Min. / Typ. / Max.)

Derating if the temperature is ≥85°C (°C):	-40 / - / +105
Storage temperature (°C):	-50 / - / +130
Cooling:	Free air convection

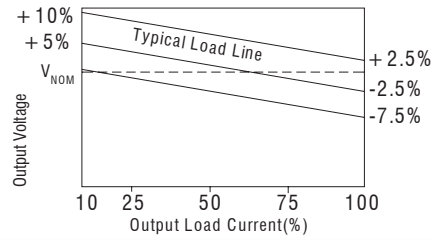
INDUKTIVITÄTEN  
STROMVERSORGUNGEN  
BLECHBEARBEITUNG  
MAGNETISCHE ABSCHIRMUNGEN



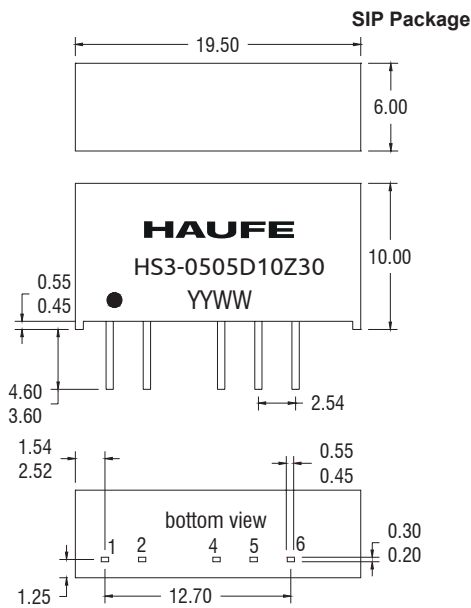
## TEMPERATURE DERATING GRAPHS



## TOLERANCE ENVELOPES



## MECHANICAL DIMENSION

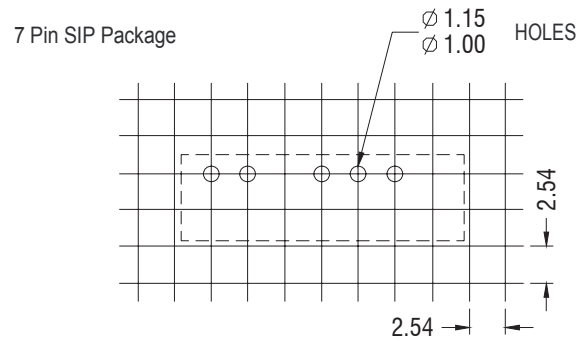


All dimensions in mm  $\pm 0.25$ mm. All pins on a 2.54mm pitch and within  $\pm 0.25$ mm of true position. Weight: 2.1g (DIP)

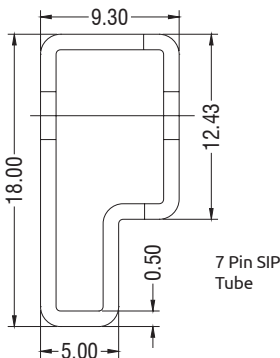
## PIN CONNECTIONS

7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
5	OV
6	+Vout

## RECOMMENDED FOOTPRINT DETAILS



## RoHS COMPLIANCE INFORMATION



## SOLDERING INFORMATION

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