



The HD2-XXYYS10Z20 series are miniature, isolated 1W DC/DC converters in a DIP 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 0.69cm²
- Output voltage: 3.3V, 5V, 9V, 12V, 15V & 24V
- Industry Standard Pinout
- Custom Solutions available (15-48V)
- 2KVDC isolation Power density
- Optional: Continuous short circuit protection

H-Model	Nominal Input Voltage (V)	Output Voltage (V)	Output Current (Max./Min) (mA)	Efficiency (%)	Package Style
HD2-0303S10Z20	3,3	3,3	303/30.3	72	DIP8
HD2-0305S10Z20	3,3	5	200/20	74	DIP8
HD2-0503S10Z20	5	3,3	303/30.3	72	DIP8
HD2-0505S10Z20	5	5	200/20	68	DIP8
HD2-0509S10Z20	5	9	110/11	78	DIP8
HD2-0512S10Z20	5	12	83/8.3	77	DIP8
HD2-0515S10Z20	5	15	66/6.6	81	DIP8
HD2-0524S10Z20	5	24	42/4.2	80	DIP8
HD2-1203S10Z20	12	3,3	303/30.3	72	DIP8
HD2-1205S10Z20	12	5	200/20	69	DIP8
HD2-1209S10Z20	12	9	110/11	74	DIP8
HD2-1212S10Z20	12	12	83/8.3	76	DIP8
HD2-1215S10Z20	12	15	66/6.6	75	DIP8
HD2-1505S10Z20	15	5	200/20	71	DIP8
HD2-2403S10Z20	24	3,3	303/30.3	71	DIP8
HD2-2405S10Z20	24	5	200/20	70	DIP8
HD2-2409S10Z20	24	9	111/11.1	75	DIP8
HD2-2412S10Z20	24	12	83/8.3	81	DIP8
HD2-2415S10Z20	24	15	66/6.6	81	DIP8
HD2-2424S10Z20	24	24	41.5/4.15	80	DIP8
HD2-4805S10Z20	48	5	200/20	70	DIP8
HD2-4809S10Z20	48	9	111/11.1	75	DIP8
HD2-4812S10Z20	48	12	83/8.3	80	DIP8
HD2-4815S10Z20	48	15	66/6.6	80	DIP8

Package Unit: 35

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

Add suffix "P" for continous short circuit protection e.g. „HD2-4812S10Z20P“.

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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):	- / 26 / 48

ISOLATION CHARACTERISTICS:

Isolation test voltage (VDC):	2000 / - / - (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 3.3V input (kHz):	- / 95 / -
Switching frequency 5V input (kHz):	- / 110 / -
Switching frequency 12V input (kHz):	- / 145 / -
Switching frequency 15V, 24V, 48V input (kHz):	- / 100 / -

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

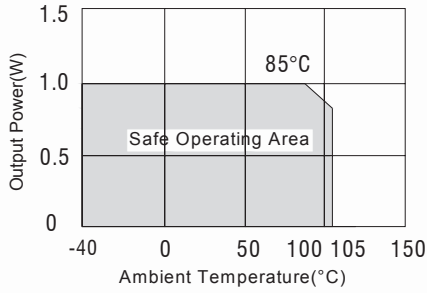
Derating if the temperature is ≥85°C (°C):	-40 / - / 105
Storage temperature 3.3V 5V, 12V (°C):	-55 / - / 150
Storage temperature 15V, 24V, 48V (°C):	-55 / - / 130
Case temperature above ambient. 5V output (°C):	- / - / 41
Case temperature above ambient. All other output (°C):	- / - / 32
Operating temperature 15V, 24V, 48V (°C):	-40 / - / 85
Cooling:	Free air convection

SOLDERING INFORMATION:

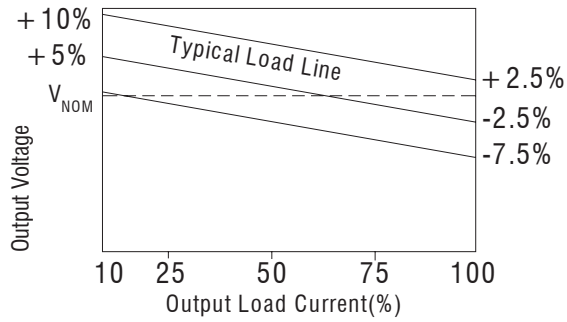
This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. Both types in this series are backward compatible with Sn/Pb soldering systems.

INDUKTIVITÄTEN
STROMVERSORGUNGEN
BLECHBEARBEITUNG
MAGNETISCHE ABSCHIRMUNGEN

TEMPERATURE DERATING GRAPHS

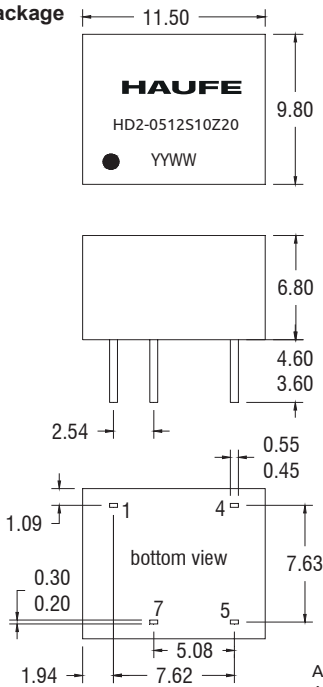


TOLERANCE ENVELOPES



MECHANICAL DIMENSION

DIP Package

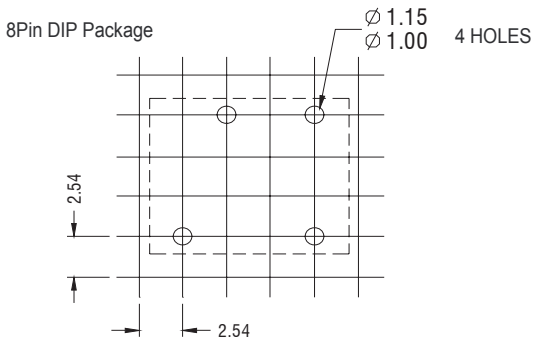


All dimensions in mm ± 0.25 mm.
All pins on a 2.54mm pitch and within ± 0.25 mm of true position.
Weight: 1.48g (DIP)

PIN CONNECTIONS

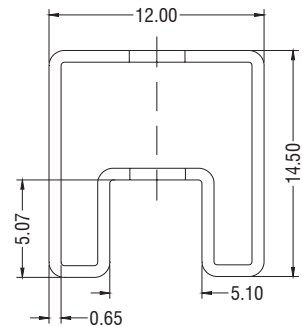
8 PIN DIP	
Pin	Function
1	-Vin
4	+Vin
5	+Vout
7	-Vout

RECOMMENDED FOOTPRINT DETAILS



TUBE OUTLINE DIMENSIONS

8Pin DIP Tube



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length (8 Pin DIP) : 520mm ± 2 mm.