



#### Features

- Highest Power Density in 50 x 25 x 10 mm (2" x 1" x 0.4") Package
- Wide 2 : 1 Input Range
- Very high Efficiency up to 87%
- Input Filter meets EN 55022, Class A and FCC, Level A without external Components
- Shielded Metal Case with insulated Baseplate
- Industry Standard Pinout
- High Reliability, MTBF > 1.2 Mio. h
- 2 Year Product Warranty



The TAP Series is a range of high performance, isolated DC/DC-converter modules with highest power density. State of the art SMD-technology guarantees a product with very high reliability. I/O-isolation of 1'500 VDC together with conducted noise compliance to EN 55022-A and FCC, level A makes these converters the ideal product for communications, battery powered mobile equipments and distributed power system applications.

#### Models

Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TAP 1210 TAP 1211 TAP 1212 TAP 1213 TAP 1222 TAP 1223	9 – 18 VDC	3,3 VDC 5 VDC 12 VDC 15 VDC ± 12 VDC ± 15 VDC	2'400 mA 2'000 mA 1'000 mA 800 mA ± 450 mA ± 350 mA	77 % 80 % 83 % 83 % 83 % 83 %
TAP 2410 TAP 2411 TAP 2412 TAP 2413 TAP 2422 TAP 2423	18 – 36 VDC	3,3 VDC 5 VDC 12 VDC 15 VDC ± 12 VDC ± 15 VDC	2'800 mA 2'500 mA 1'250 mA 1'000 mA ± 600 mA ± 500 mA	79 % 82 % 86 % 86 % 86 % 86 %
TAP 4811 TAP 4812 TAP 4813 TAP 4822 TAP 4823	36 – 75 VDC	5 VDC 12 VDC 15 VDC ± 12 VDC ± 15 VDC	2'500 mA 1'250 mA 1'000 mA ± 600 mA ± 500 mA	84 % 87 % 87 % 87 % 87 %



**Input Specifications**

Input current (no load)	12 Vin models	30 mA typ.
	24 Vin models	20 mA typ.
	48 Vin models	10 mA typ.
Input current (full load)	12 Vin models	1000 mA typ.
	24 Vin models	720 mA typ.
	48 Vin models	360 mA typ.
Surge voltage protection (1 sec max.)	12 Vin models	t.b.a.
	24 Vin models	t.b.a.
	48 Vin models	t.b.a.
Conducted noise (input)		EN 55022 level A, FCC part 15, level A

**Output Specifications**

Voltage set accuracy		± 2 %
Regulation	– Input variation Vin min. to Vin max.	± 0.5 % max.
	– Load variation 10 – 90 %	
	– single output models	± 1.0 % max.
	– dual output models balanced load	± 2.0 % max.
	– dual output models unbalanced load	± 3.5 % max.
Ripple and noise (20 MHz Bandwidth)		75 mVpk-pk max.
Temperature coefficient		± 0.05 % / °C
Output current limitation		>120% of Iout max., constant current
Short circuit protection		Foldback mode Long term short circuit operation may cause damage to the converter.
Capacitive load	– single output models	200 µF max.
	– dual output models	50 µF max.

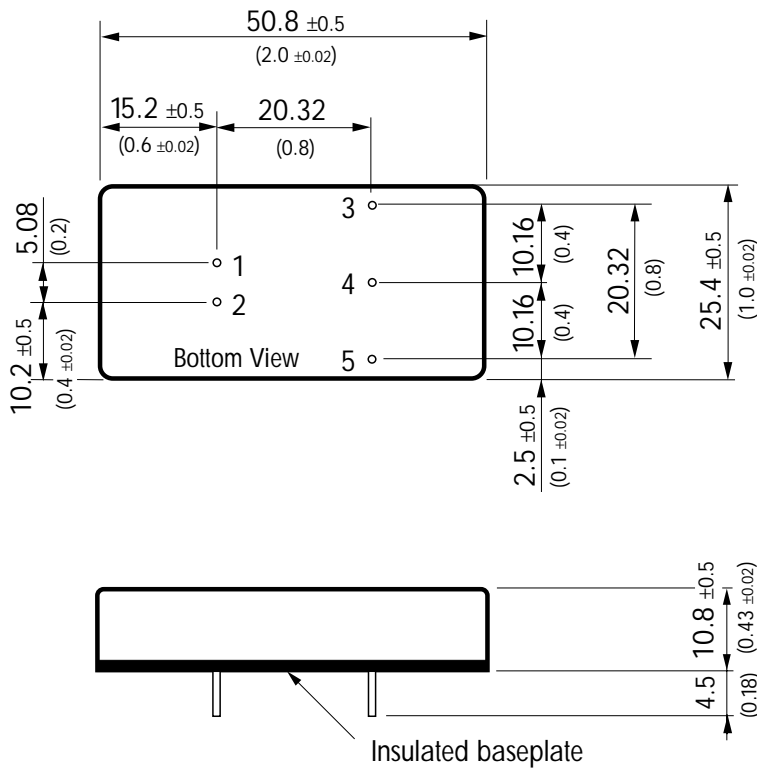
**General Specifications**

Temperature ranges	– Operating	– 25 °C ... + 75 °C (derating 3% /°C above 60°C)
	– Case temperature	+ 100 °C max.
	– Storage	– 40 °C ... + 125 °C
Humidity (non condensing)		90 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 E)		>1.2 Mio. h @ + 25 °C
Isolation voltage	Input/Output	
	– 12/24 VDC models	750 VDC
	– 48 VDC models	1'500 VDC
Isolation capacity	Input/Output	2.2 nF typ
Isolation resistance	Input/Output (500 VDC)	> 1'000 M Ohm
Switching frequency (fixed)		400 kHz typ. (Pulse width modulation PWM)
Safety standards		UL 1950, EN 60950, IEC 60950 Compliance up to 60 VDC input voltage (SELV limit)
Safety approvals		UL/cUL File E188913

**Physical Specifications**

Case material	Steel nickel-plated
Baseplate	Epoxy FR4
Potting material	Silicon rubber TSE (flammability to UL 94 V-0)
Weight	30 g (1.2 oz)
Soldering temperature	max. 260 °C / 10 sec.

**Outline Dimensions mm (inches)**



Pin-Out		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout

Pin diameter  $\varnothing 0.8 \pm 0.05$  (0.03  $\pm 0.002$ )

Specifications can be changed without notice