

### Features

- Single-, Dual-, and Triple Output Models
- Wide 2:1 Input Range
- Very high Efficiency up to 84%
- Extended Temp. Range available
- Internal Filter to meet EN 55022, Class A and FCC Part 15, Level A
- I/O-Isolation 500VDC (1'500VDC for Triple Output Models)
- Small Dimensions: Single- and Dual Output Models: 50x50x10.5mm, Triple Output Models: 71x61x10.5mm
- Remote ON/OFF
- Shielded Metal Case
- 2 Year Product Warranty



The TAM series is a range of high performance 25W DC/DC-converters with very high power density. They provide a cost effective solution in industrial, datacommunication and telecom applications with limited space on PCB. These converters are built in SMT-hybrid technology on a ceramic substrate which together with a metal case provide a very good heat dissipation. No additional heatsink is necessary for operating temperature up to +75 °C (resp. +85°C) at full load.

### Models

Ordercode	Input voltage range	Output 1	Output 2	Output 3	Efficiency typ.
TAM 25-1211	9.5 – 18VDC	5 VDC / 4.4 A			75%
TAM 25-2411 TAM 25-2412 TAM 25-2421 TAM 25-2422	18 – 36 VDC	5 VDC / 5 A 12 VDC / 2 A +12 VDC / 1 A +15 VDC / 0.83 A	-12 VDC / 1 A -15 VDC / 0.83 A		82 % 83 % 83 % 83 %
TAM 25-4811 TAM 25-4812 TAM 25-4821 TAM 25-4822	36 – 72 VDC	5 VDC / 5 A 12 VDC / 2 A +12 VDC / 1 A +15 VDC / 0.83 A	-12 VDC / 1 A -15 VDC / 0.83 A		82 % 83 % 83 % 83 %
<b>Models with extended Temp. Range -25 to +85°C</b>					
TAM 25-2411-B TAM 25-2412-B TAM 25-2431 TAM 25-2432	18 – 36 VDC	5 VDC / 5 A 12 VDC / 2.5 A 5 VDC / 3.8 A 5 VDC / 3.1 A	+12 VDC / 0.25 A +15 VDC / 0.31 A	-12 VDC / 0.25 A -15 VDC / 0.31 A	83 % 84 % 84 % 84 %
TAM 25-4811-B TAM 25-4812-B TAM 25-4831 TAM 25-4832	36 – 72 VDC	5 VDC / 5 A 12 VDC / 2.5 A 5 VDC / 3.8 A 5 VDC / 3.1 A	+12 VDC / 0.25 A +15 VDC / 0.31 A	-12 VDC / 0.25 A -15 VDC / 0.31 A	83 % 84 % 84 % 84 %

**Input Specifications**

Input current (no load)	12 Vin models	35 mA typ.	
	24 Vin models	30 mA typ.	
	48 Vin models	20 mA typ.	
Input current (full load)	12 Vin models	3'000 mA typ.	
	24 Vin;	5 Vout models:	1'270 mA typ.
	24 Vin;	12 & ±12 Vout models:	1'210 mA typ.
	24 Vin;	other output models:	1'250 mA typ.
	48 Vin;	5 Vout models:	635 mA typ.
	48 Vin;	12 & ±12 Vout models:	605 mA typ.
Surge voltage (only triple- and B- version models)	24 Vin models:	39 VDC max.. (1 sec. max.)	
	48 Vin models:	75 VDC max. (1 sec. max.)	
Conducted noise (input)		EN 55022 level A, FCC part 15, level A	

**Output Specifications**

Voltage set accuracy	– main output		± 1.0 %
	– auxiliary outputs	dual:	± 1.5 %
		triple:	± 4.0 %
Output voltage adjustment			+ 5 % / – 20%
Regulation	– Input variation Vin min. to Vin max.		
	– single- and triple output models		± 0.5 % max.
	– dual output models		± 1.0 % max.
	– Load variation 10 – 100 %:		
	– single output models		± 1.0 % max.
	– dual output models ( balanced load )		± 2.0 % max.
	– triple output models	Out 1:	± 1.0 % max.
	Out 2 & 3:	± 3.0 % max. (> 10% load at Out 1)	
– Cross regulation			± 3.0 % max.
Ripple and noise (20 MHz Bandwidth)			120 mVpk-pk max
Temperature coefficient			± 0.02 % / °C
Output current limitation			105% – 130% of Iout max. foldback mode
Short circuit protection			foldback, indefinite (automatic recovery)
Capacitive load (at min load)	single output models:		500 µF max.
	dual output models:		250 µF max.
	triple output models:		100 µF max.

**General Specifications**

Temperature ranges	– Operating	standard:	– 25 °C ... + 75 °C (no derating)
		extended:	– 25 °C ... + 85 °C (no derating)
	– Case temperature	standard:	+ 95 °C max.
		extended:	+ 115 °C max.
– Storage			– 55 °C ... + 125 °C
Humidity (non condensing)			95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 E)			> 400'000 h @ + 25 °C
Isolation voltage	Input/Output	single- & dual output models:	500 VDC
		triple output- and B- version models:	1'500 VDC
Isolation capacity	Input/Output		10 nF typ

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**General Specifications**

Isolation resistance	Input/Output (500 VDC)	> 100 M Ohm
Switching frequency (fixed)		300 kHz typ. (Pulse width modulation PWM)
Remote ON/OFF (optional):	ON:	2.5 ... 5.5 VDC or open circuit.
	OFF:	0 ... 1 VDC or short circuit pin 1 and -Vin

**Physical Specifications**

Case material	- single- & dual output models: - triple output- and B- version models:	black coated metal with insulated baseplate Aluminum anodized
Soldering temperature		max. 260 °C / 10 sec.

**Reduction of conducted Noise with external Capacitor**

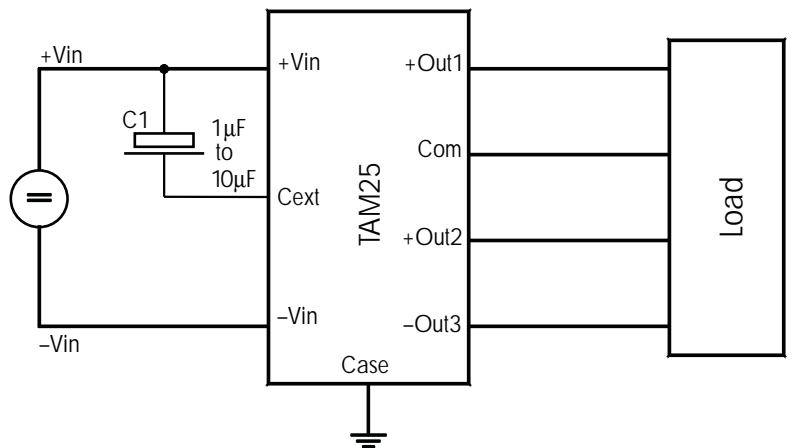
In order to meet conducted emissions EN55022-A and EN55011-A a capacitor at the input side of triple output models and B-version models has to be installed.

**Note:**

C1 = Electrolytic capacitor low ESR type or MLCC Cap for SMD (TCCR or THCR type from Nippon Chemi-Con)

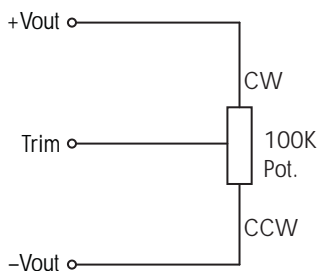
The value of C1 is between 1µF and 10 µF, depending on the load

For 24V input models use 50V capacitor.  
For 48V input models use 100V capacitor.

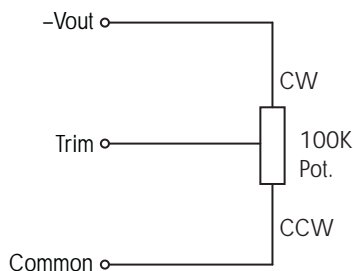


**Output Voltage Adjustment**

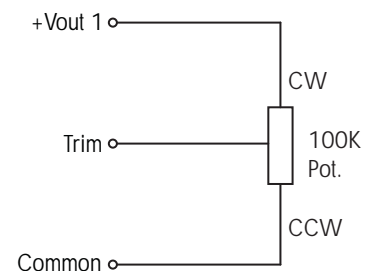
**Single Output**



**Dual Output**



**Triple Output**

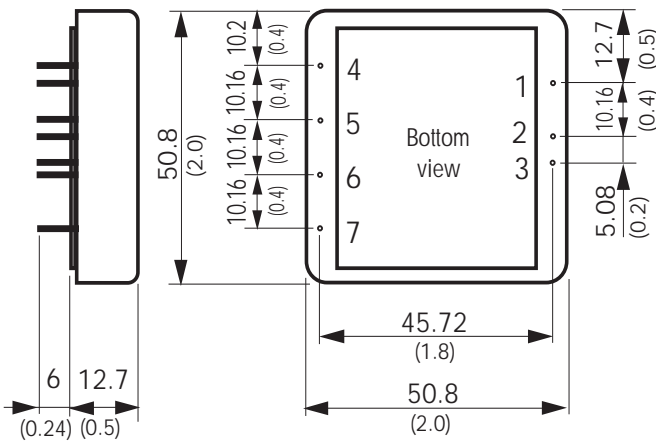


Output voltage adjustment range: +5% to -20%

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**Outline Dimensions mm (inches)**

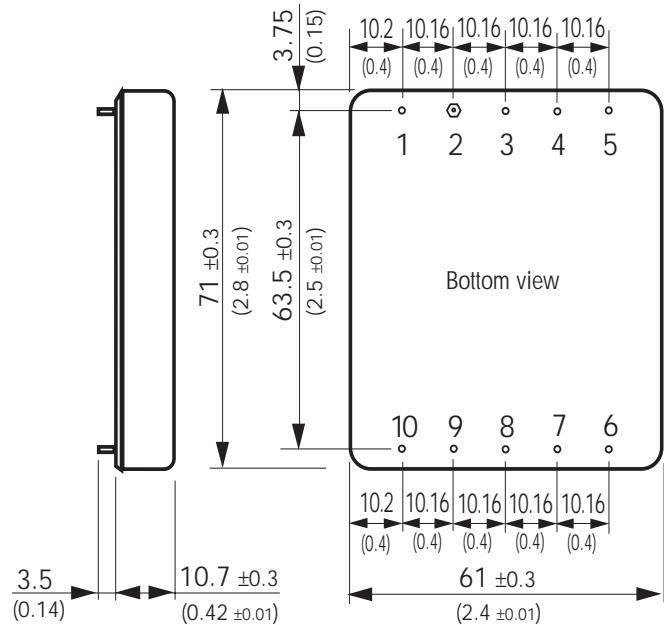
Single- and Dual Output Models



Pin  $\varnothing$  1 mm (0.04)

**Weight:** 55g (0.12lb)

Triple Output Models and B-Version



Pin  $\varnothing$  1 mm (0.04)

**Weight:** 60g (0.13lb)

Pin-Out		
Pin	Single	Dual
1	Remote on/off	Remote on/off
2	+Vin (Vcc)	+Vin (Vcc)
3	-Vin (GND)	-Vin (GND)
4	Trim	Trim
5	-Vout	-Vout
6	+Vout	Common
7	No pin	+Vout

Pin-Out			
Pin	Triple	B-Version 24VDC	B-Version 48VDC
1	Remote on/off	Remote on/off	Remote on/off
2	Case	Case	Case
3	+Vin (Vcc)	-Vin (GND)	+Vin (Vcc)
4	-Vin (GND)	+Vin (Vcc)	-Vin (GND)
5	C ext.	Cext.	C ext.
6	-Vout 3	No function	No function
7	+Vout 2	No function	No function
8	Common	-Vout	-Vout
9	+Vout 1	+Vout	+Vout
10	Trim	Trim	Trim

Specifications can be changed without notice