



5TAW_1.5 series

5W - Single Output - Wide Input - Isolated & Regulated DC-DC Converter

DC-DC Converter

5 Watt

- ⊕ 5 Watt SMD Package
- ⊕ 2:1 Wide input voltage range: 9-18V, 18-36V, 36-72V
- ⊕ 1.5kVDC Input/Output Isolation
- ⊕ Short circuit protection (SCP) (automatic recovery)
- ⊕ Operating temperature: -40°C ~ +71°C
- ⊕ 100% burned in
- ⊕ High efficiency
- ⊕ UL94-V0 package material
- ⊕ RoHS Compliance
- ⊕ Custom solutions available
- ⊕ 3 years warranty

The 5TAW_1.5 series offers 5W of output, with 2:1 wide input voltage of 9-18VDC, 18-36VDC, 36-72VDC, and features 1500VDC isolation, over current, over voltage and short-circuit protection.

All models are particularly suited to industrial, tele-communications, test equipments power.



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Cooling:	Free air convection
Operation temperature range:	-40°C~+71°C
Storage temperature range:	-55°C~+125°C
Maximum case temperature:	95°C
Conducted emissions:	EN55022 Class B
Radiated emissions:	EN55022 Class B
Switching frequency:	50kHz MIN, Nominal input, 100% load
Storage humidity range:	5% MIN, 95% MAX
Case material:	Five-side shielded case
Case size:	31.8mm*20.3mm*11.4mm
Potting material:	Non potting
MTBF (MIL-HDBK-217F @25°C):	>900,000 hours
Weight:	17.5g

Input specifications						
Item	Test condition	Min	Typ	Max	Units	
Input filter	PI					
Protection	Fuse recommended					

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output voltage accuracy	Nominal Vin and full load			±2	%	
Line regulation	High line to low line			±1	%	
Load regulation	From 20% to 100% load		±0.5		%	
Minimum load		20			%	
Temperature coefficient	Refer to recommended circuit			±0.05	%/°C	
Ripple & Noise	20MHz Bandwidth			100	mVp-p	
Transient response	25% load step change			200	us	
Over load protection	Input voltage range	110		180	%	

Isolation specifications						
Item	Test condition	Min	Typ	Max	Units	
Isolation voltage	Tested for 10 sec.	1500			VDC	
Isolation resistance	Test at 500VDC	10 ⁹			Ω	
Isolation capacitance				40	pF	

Example:

5TAW_2415S1.5

5 = 5Watt; T = SMD; A = series; W = Wide input (2:1) 18-36Vin; 24 = Vin; 15 = 15Vout; S = single output; 1.5 = 1500VDC isolation

Note:

1. Only typical model listed. Non-standard models will be different from the above, please contact us for more details.
2. All specifications are measured at TA = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
3. In this datasheet, all the test methods of indications are based on corporate standards.

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Product Selection Guide

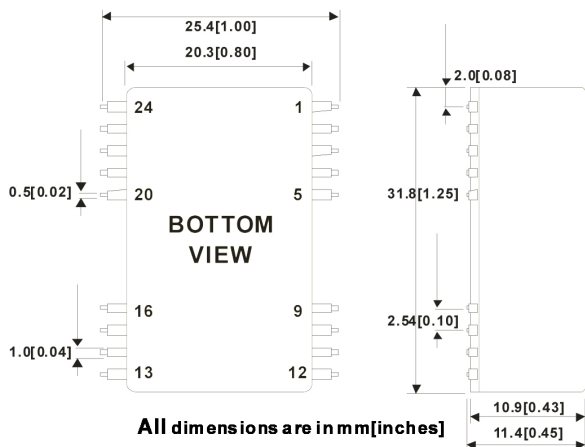
Part Number	Nominal	Input Voltage [VDC]		Output Voltage [VDC]	Output Current [mA]	Input Current ⁽¹⁾ [mA]		Efficiency ⁽²⁾ [% , Typ.]
		Range	Max			Full load	No load	
5TAW_1205S1.5	12	9-18	20	5	1000	521	18	80
5TAW_1212S1.5	12	9-18	20	12	470	566	18	83
5TAW_1215S1.5	12	9-18	20	15	400	595	18	84
5TAW_2405S1.5	24	18-36	40	5	1000	257	10	81
5TAW_2412S1.5	24	18-36	40	12	470	280	10	84
5TAW_2415S1.5	24	18-36	40	15	400	294	10	85
5TAW_4805S1.5	48	36-72	80	5	1000	127	5	82
5TAW_4812S1.5	48	36-72	80	12	470	138	5	85
5TAW_4815S1.5	48	36-72	80	15	400	147	5	85
5TAW_1205D1.5	12	9-18	20	±5	±500	521	18	80
5TAW_1212D1.5	12	9-18	20	±12	±230	554	30	83
5TAW_1215D1.5	12	9-18	20	±15	±190	565	32	84
5TAW_2405D1.5	24	18-36	40	±5	±500	257	10	81
5TAW_2412D1.5	24	18-36	40	±12	±230	274	15	84
5TAW_2415D1.5	24	18-36	40	±15	±190	279	15	85
5TAW_4805D1.5	48	36-72	80	±5	±500	127	5	82
5TAW_4812D1.5	48	36-72	80	±12	±230	135	5	85
5TAW_4815D1.5	48	36-72	80	±15	±190	140	5	85

1. Nominal input voltage
2. Nominal input voltage, full load

For B or C Pinning: 5TBW_xx03S1.5/5TBW_xx03D1.5 or 5TCW_xx03S1.5/5TCW_xx03D1.5

SMD package

SMD package



SMD package „A“

PIN	SINGLE	DUAL
1	ON/OFF	ON/OFF
2 & 3	-Vin	-Vin
4 & 5	NC	NC
9	NC	COM
10 & 12	NC	NC
11	NC	-VOUT
13 & 15	NC	NC
14	+VOUT	+VOUT
16	-VOUT	COM
20 & 21	NC	NC
22 & 23	+VIN	+VIN
24	NC	NC

SMD package „C“

PIN	SINGLE	DUAL
1 & 2	+Vin	+Vin
3 & 4	NC	NC
5 & 9	NC	NC
10 & 11	NC	Common
12	-Vout	NC
13	+Vout	-Vout
14 & 16	NC	NC
15	NC	+Vout
20 & 21	NC	NC
22	NC	NC
23 & 24	-Vin	-Vin

SMD package „B“

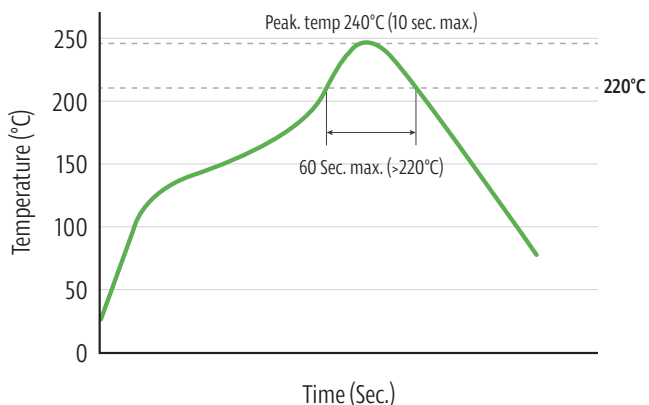
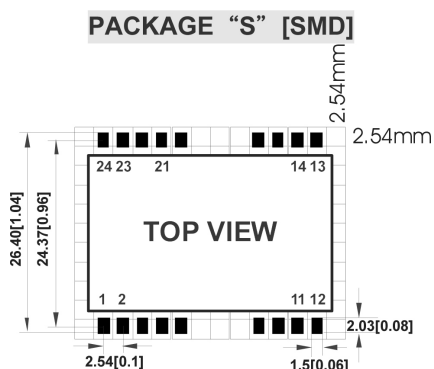
PIN	SINGLE	DUAL
1 & 24	+Vin	+Vin
2 & 23	NC	-Vout
3 & 22	NC	Common
4 & 21	NC	NC
5 & 20	NC	NC
9 & 16	NC	NC
10 & 15	-Vout	Common
11 & 14	+Vout	+Vout
12 & 13	-Vin	-Vin

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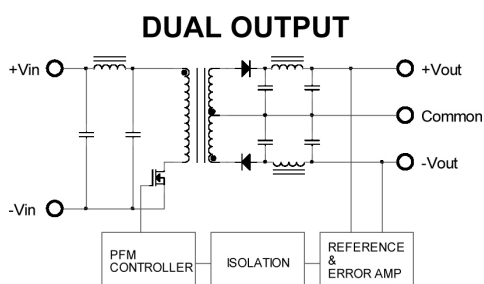
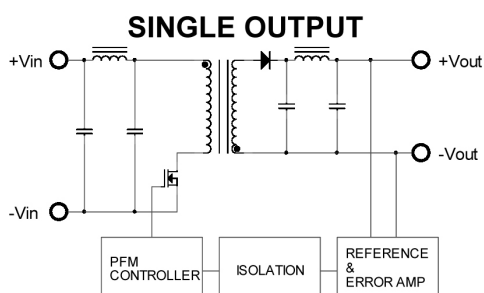
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Input operating voltage

Reflow soldering profile

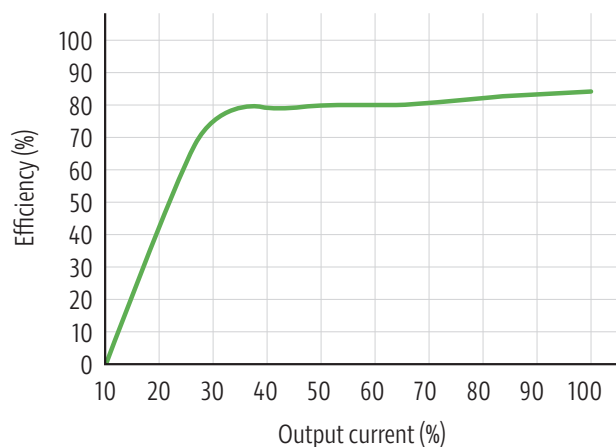


Simplified schematic

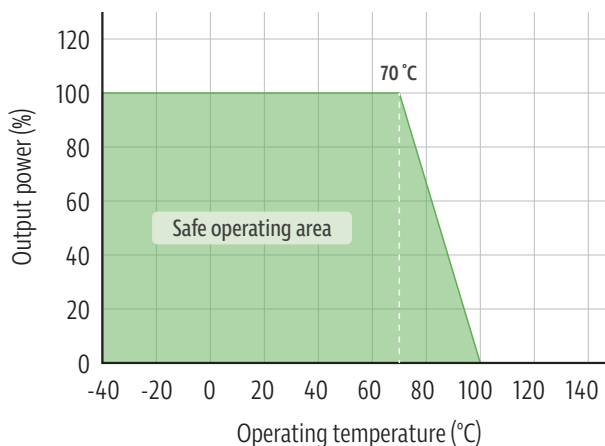


Efficiency & derating curve

Efficiency vs output load



Temperature derating graph



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Application notes

No external capacitance is required for operation of the 5TAW_1.5 series.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5Ω from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 1000uF.

We Can Offer EMC-Filter According To EN55011/22 Class B.