

3TAW Series

3W - Single Output - Wide Input - Isolated & Regulated
DC-DC Converter



DC-DC Converter

3 Watt

- ⊕ 3W SMD Package
- ⊕ 2:1 Wide input voltage range: 9-18V, 18-36V, 36-75V
- ⊕ 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 3TAW series offers 3W of output, with 2:1 wide input voltage of 9-18VDC, 18-36VDC, 36-75VDC, and features 1500VDC isolation, over current, over voltage and short-circuit protection.

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



RoHS

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

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	

Note:

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

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	%	

Model selection:

WCTV_xxyyN##

W= Watt; C=Case; T= Type; V= Voltage Variation (omitted ± 10%);
xx= Vin; yy= Vout; N= Numbers of Output; ##= Isolation (kVDC)

Example:

3TAW_2415S1.5

3= 3Watt; T= SMD; A=series; W= wide input (2:1) 18-36Vin; 15Vout;
S= single output; 1.5=1500VDC

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Part Number	Input Voltage [VDC]			Output Voltage [VDC]	Output Current [mA]	Input Current ⁽¹⁾ [mA]		Efficiency ⁽²⁾ [% , Typ.]
	Nominal	Range	Max			Full load	No load	
3TAW_1205S1.5	12	9-18	20	5	600	313	18	80
3TAW_1212S1.5	12	9-18	20	12	250	301	18	83
3TAW_1215S1.5	12	9-18	20	15	200	298	18	84
3TAW_2405S1.5	24	18-36	40	5	600	154	10	81
3TAW_2412S1.5	24	18-36	40	12	250	149	10	84
3TAW_2415S1.5	24	18-36	40	15	200	147	10	85
3TAW_4805S1.5	48	36-75	80	5	600	75	5	83
3TAW_4812S1.5	48	36-75	80	12	250	74	5	85
3TAW_4815S1.5	48	36-75	80	15	200	74	5	85
3TAW_1205D1.5	12	9-18	20	±5	±300	313	18	80
3TAW_1212D1.5	12	9-18	20	±12	±125	301	30	83
3TAW_1215D1.5	12	9-18	20	±15	±100	298	32	84
3TAW_2405D1.5	24	18-36	40	±5	±300	154	10	81
3TAW_2412D1.5	24	18-36	40	±12	±125	149	15	84
3TAW_2415D1.5	24	18-36	40	±15	±100	147	15	85
3TAW_4805D1.5	48	36-75	80	±5	±300	75	5	83
3TAW_4812D1.5	48	36-75	80	±12	±125	74	5	85
3TAW_4815D1.5	48	36-75	80	±15	±100	74	5	85

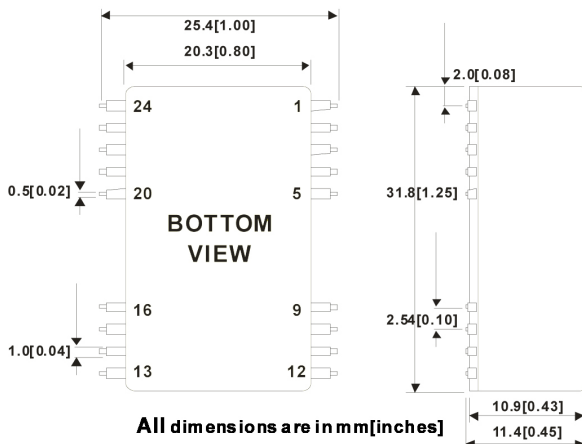
1. Nominal input voltage

2. Nominal input voltage, full load

For B or C Pinning: 3TBW_xx03S1.5/3TBW_xx03D1.5 or 3TCW_xx03S1.5/3TCW_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

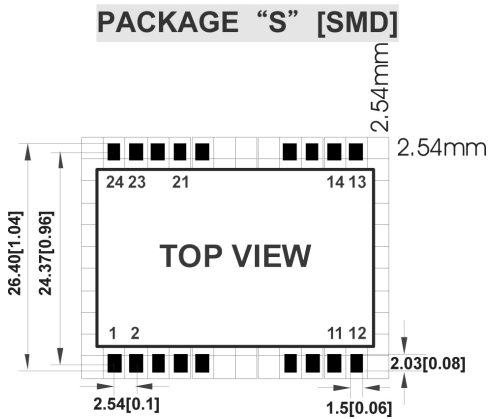
SMD package „B“

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

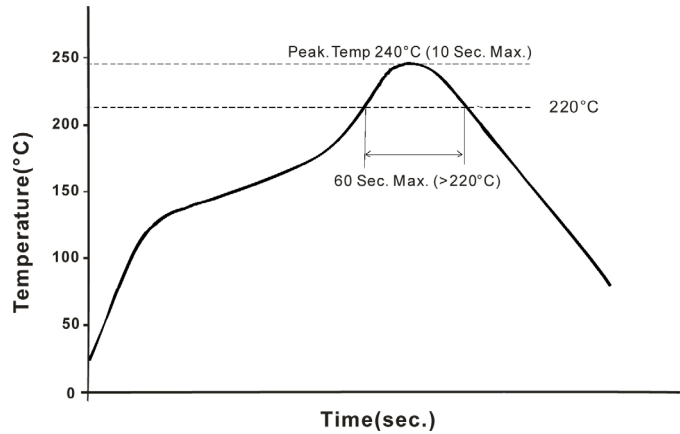
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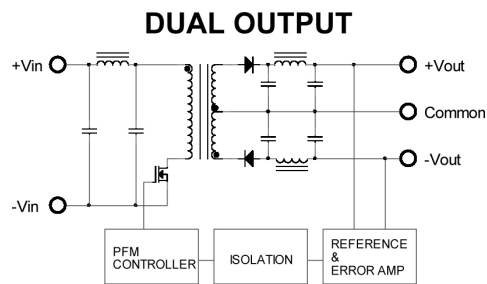
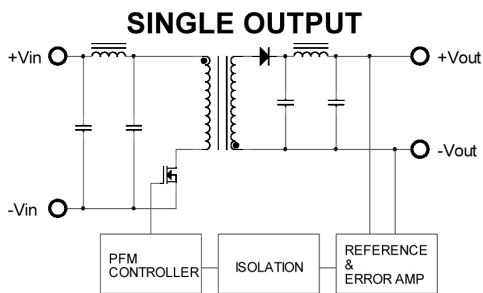
Input operating voltage



Reflow soldering profile

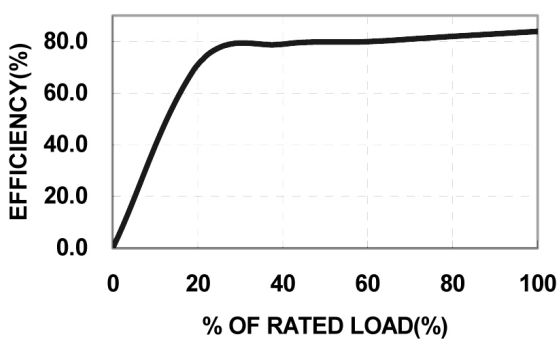


Simplified schematic

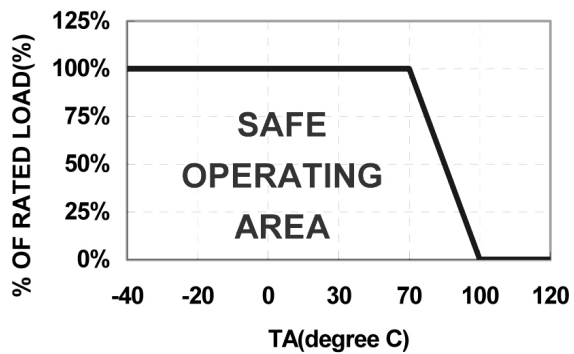


Efficiency & derating curve

Output load vs. efficiency



Temperature derating



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Application notes

No external capacitance is required for operation of the 3TXW 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.