



3DAW4_2 Series

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

DC-DC Converter

3 Watt

- ⊕ Ultra Wide 4:1 Input Voltage Range
- ⊕ Very Low Stand-by (no-load) Power Consumption
50mW typ and 150mW max.
- ⊕ High Efficiency up to 86%
- ⊕ 3W Single and Dual outputs
- ⊕ I/O Isolation 1KVDC, 2KVDC, 4KVDC & 6KVDC Option
- ⊕ Operating Temperature Range: -40°C to +85°C
- ⊕ Continuous Short Circuit Protection (SCP)
- ⊕ Remote ON/OFF Control add Suffix „CTRL“ Option
- ⊕ 2 Pinout Options, 2 Case Styles
- ⊕ Internal PI-Filtering



The 3DAW4_ T° series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range \leq 4:1);
- 2) Where isolation is necessary between input and output (isolation \leq 1000VDC, \leq 2000VDC, \leq 4000VDC, \leq 6000VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

Common specifications	
Input filter:	Pi type
Short circuit protection:	Continuous, automatic recovery
Temperature rise at full load:	15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C
Operation case temperature:	+110°C MAX
Storage temperature range:	-55°C ~+125°C
Storage humidity range:	< 95%
Lead temperature range:	300°C MAX, 1.5mm from case for 10 sec
No-load power consumption:	50mW TYP / 150mW MAX
Temperature coefficient:	-40°C to +85°C ambient 0.015 %/°C MAX
Operating Frequency:	150kHz MIN
Case material:	Non-conductive black plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF (MIL-HDBK 217F):	+25°C: 2597x10 ³ hours +85°C: 378x10 ³ hours
Weight:	13g

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 second	1000 2000 4000 6000			VDC
Isolation resistance	500VDC, input to output	15			GΩ
Isolation capacitance	100KHz		30		pF

Note:

1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all the test methods of indications are based on corporate standards.
3. Only typical models listed, other models may be different, please contact our technical person for more details.

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output accuracy	Nominal Vin and full load		±2		%	
Line regulation	Vin=min to max,full load		±0.5		%	
Load regulation	20% to 100% full load		±0.5		%	
Minimum load			0		%	
Temperature drift (Vout)	Refer to recommended circuit			±0.03	% /°C	
Output Ripple & Noise	20MHz Bandwidth			60	mVp-p	
Remote Power OFF (leave open if not used) (15 VDC max.)	Device ON				open or <0.8 VDC	
	Device OFF				CTRL>1.5VDC	
	Device OFF (Stand by input current)				0.5mA max.	

Model selection:

WCTV_xxyyN##

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

Example:

3DAW4_2405D6

3= 3Watt; D= DIP; A= series; W4= wide input (4:1) 9-36Vin; 5Vout;
D= Dual Output; 6= 6000VDC

3DAW4_2 Series

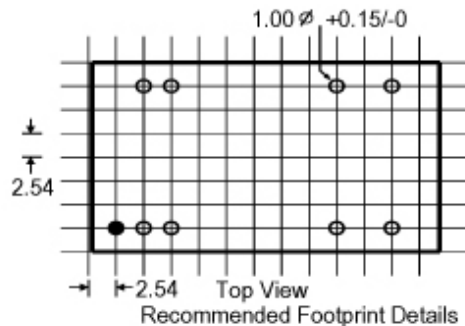
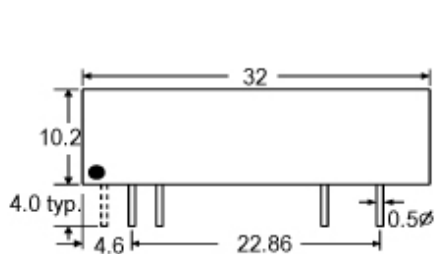
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacitive Load [μ F]
3DAW4_xx03SX	4.5-18, 9-36, 18-75	3.3	600	78-80	1000
3DAW4_xx05SX	4.5-18, 9-36, 18-75	5	600	82-83	1000
3DAW4_xx12SX	4.5-18, 9-36, 18-75	12	250	85	470
3DAW4_xx15SX	4.5-18, 9-36, 18-75	15	200	85	330
3DAW4_xx05DX	4.5-18, 9-36, 18-75	\pm 5	\pm 300	82-84	\pm 470
3DAW4_xx12DX	4.5-18, 9-36, 18-75	\pm 12	\pm 125	84-86	\pm 100
3DAW4_xx15DX	4.5-18, 9-36, 18-75	\pm 15	\pm 100	85-86	\pm 47

- X=1=1KVDC, X=2=2KVDC, X=4=4KVDC, X=6=6KVDC
- xx=Input Voltage (possible for other input and output voltage combinations on request)
 Vin=4.5-18V, xx=12
 Vin=9-36V, xx=24
 Vin=18-75V, xx=48
- For B or C Pinning: 3DBW4_xx03SX or 3DCW4_xx03SX

Mechanical dimensions/footprint

A Pinning

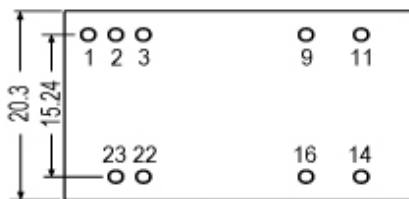


Pin Connections

Pin#	Single	Dual
1(option)	CTRL	CTRL
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	COM
22	+Vin	+Vin
23	+Vin	+Vin

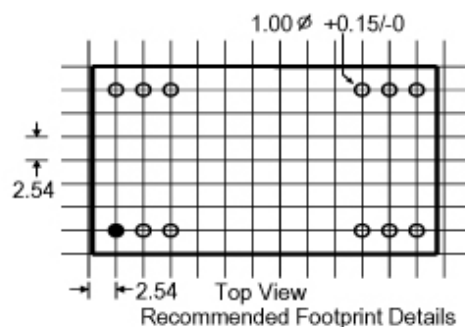
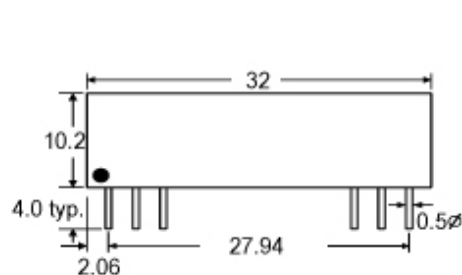
NC=No Connection

CTRL=Remote ON/OFF Control



Note:
 XX.X \pm 0.25 mm
 XX.XX \pm 0.15 mm

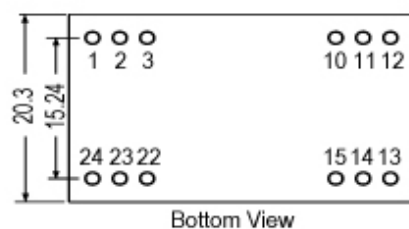
B Pinning



Pin Connections

Pin#	Single	Dual
1	+Vin	+Vin
2	NC	-Vout
3	NC	Com
10	-Vout	Com
11	+Vout	+Vout
12	-Vin	-Vin
13	-Vin	-Vin
14	+Vout	+Vout
15	-Vout	Com
22	NC	Com
23	NC	-Vout
24	+Vin	+Vin

NC=No Connection



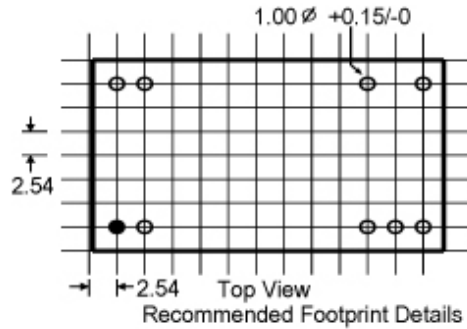
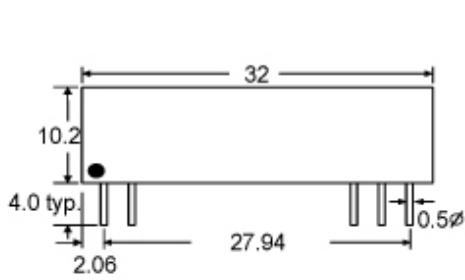
Note:
 XX.X \pm 0.25 mm
 XX.XX \pm 0.15 mm

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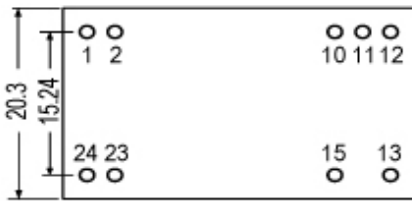
C Pinning



Pin Connections

Pin#	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

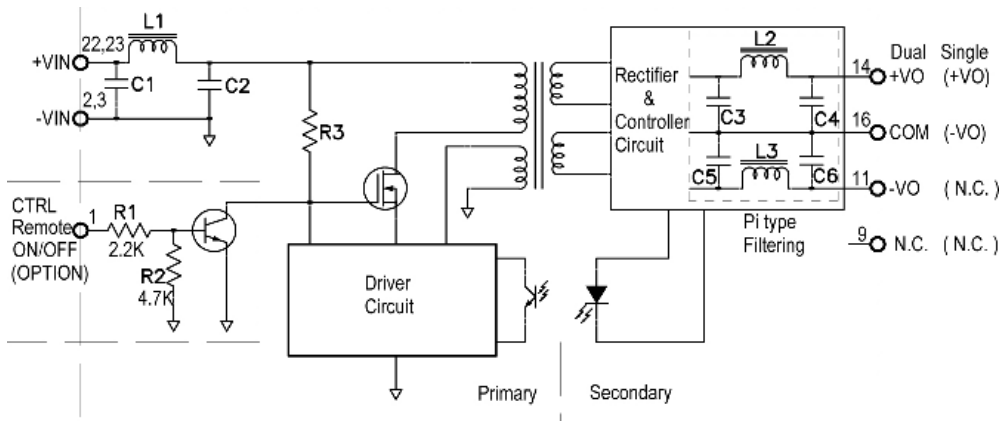
NC=No Connection



Bottom View

Note:
XX.X ± 0.25 mm
XX.XX ± 0.15 mm

Functional block diagram (A pinning)



The Values of Input π type Filtering

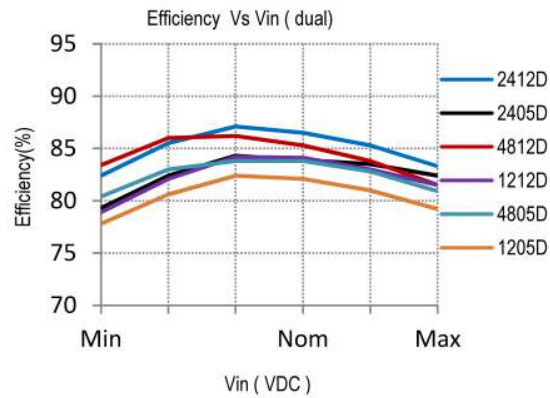
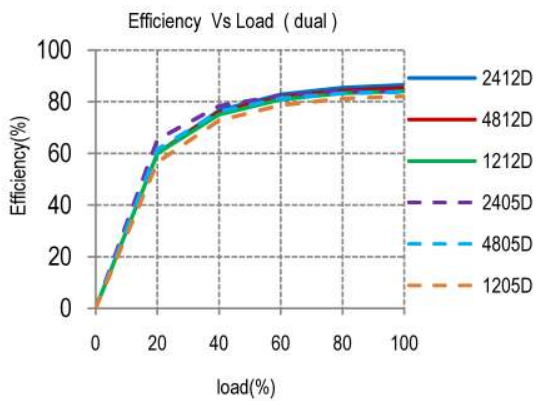
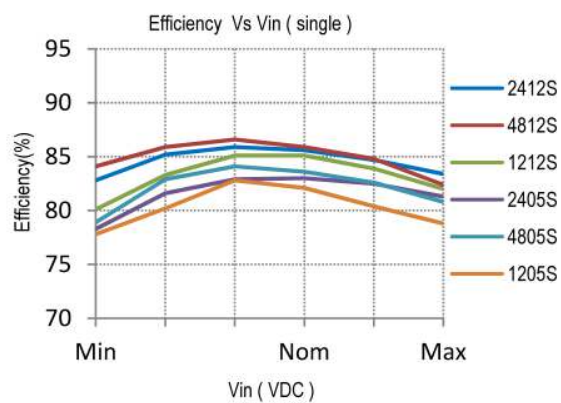
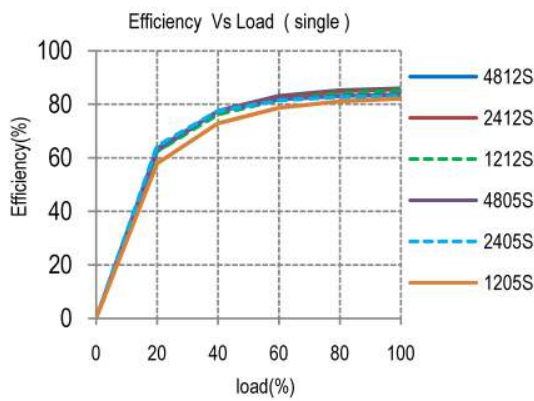
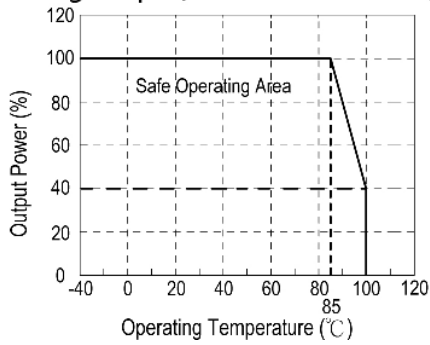
Input Voltage	C1	C2	L1
4.5~18VDC	0.1 μ F~1 μ F	10 μ F/25V	0.47 μ H~4.7 μ H
9~36VDC	0.1 μ F~1 μ F	4.7 μ F/50V	1 μ H~10 μ H
18~75VDC	0.1 μ F~1 μ F	1 μ F/100V	2.2 μ H~22 μ H

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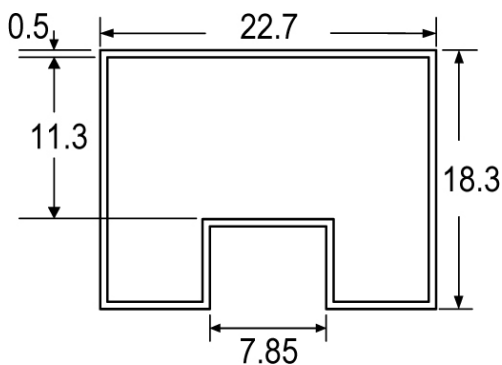
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Typical characteristics

Derating Graph (Natural convection)



Tube outline



Note:
Unit: mm
General tolerances: $\pm 0.50\text{mm}$

L=530mm $\pm 2\text{mm}$
Tube quantity: 15pcs