

5DAW4_2 Series

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



DC-DC Converter

5 Watt

- ⊕ Ultra Wide 4:1 Input Voltage Range
- ⊕ High Efficiency up to 86%
- ⊕ 5W Single and Dual outputs
- ⊕ I/O Isolation 2KVDC, 4KVDC & 6KVDC Option
- ⊕ Continuous Short Circuit Protection (SCP)
- ⊕ Remote ON/OFF Control add Suffix „CTRL“ Option
- ⊕ 2 Pinout Options



Common specifications

Input filter:	Pi type
Short circuit protection:	Continuous, automatic recovery
Temperature rise at full load:	25°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:	100mW TYP / 300mW MAX
Temperature coefficient:	-40°C to +85°C ambient 0.02 %/°C TYP
Operating Frequency:	300kHz MIN
Case material:	Non-conductive black plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF (MIL-HDBK 217F):	+25°C: 2263x10 ³ hours +75°C: 259x10 ³ hours
Weight:	13g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	• Isolation test voltage (tested for 1 sec.)	2200			VDC
		4400			VDC
		6300			VDC
	• I/O isolation voltage (60 sec.)	2000			VDC
		4000			VDC
		6000			VDC
Isolation resistance	500VDC, input to output	15			GΩ
Isolation capacitance	100KHz			30	pF

The 5DAW4_2 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 ≤ 4:1);
- 2) Where isolation is necessary between input and output (isolation ≤ 2000VDC, ≤ 4000VDC, ≤ 6000VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

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 Device OFF (Stand by input current)				CTRL>1.5VDC 0.5mA max.

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:

5DAW4_2405D6

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

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.

5DAW4_2 Series

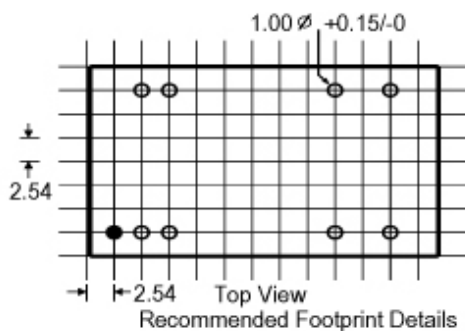
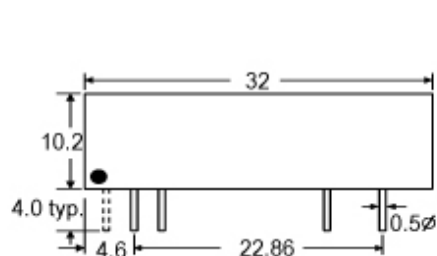
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacitive Load [μ F]
5DAW4_xx03SX	9-36, 18-75	3.3	1000	78-79	1000
5DAW4_xx05SX	9-36, 18-75	5	1000	82-83	1000
5DAW4_xx09SX	9-36, 18-75	9	556	83-84	680
5DAW4_xx12SX	9-36, 18-75	12	420	85	470
5DAW4_xx15SX	9-36, 18-75	15	340	85	330
5DAW4_xx05DX	9-36, 18-75	$\pm$ 5	$\pm$ 500	83	$\pm$ 470
5DAW4_xx09DX	9-36, 18-75	$\pm$ 9	$\pm$ 278	84	$\pm$ 330
5DAW4_xx12DX	9-36, 18-75	$\pm$ 12	$\pm$ 210	85	$\pm$ 100
5DAW4_xx15DX	9-36, 18-75	$\pm$ 15	$\pm$ 170	85	$\pm$ 47

- X=2=2KVDC, X=4=4KVDC, X=6=6KVDC
- xx=Input Voltage (possible for other input and output voltage combinations on request)
Vin=9-36V, xx=24
Vin=18-75V, xx=48
- For B or C Pinning: 5DBW4_xx03SX or 5DCW4_xx03SX

Mechanical dimensions/footprint

A Pinning (DIP24 Package)

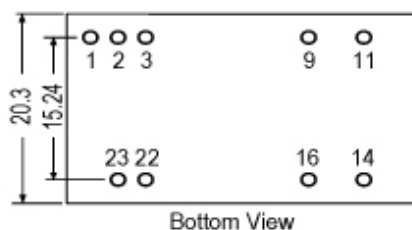


Pin Connections

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

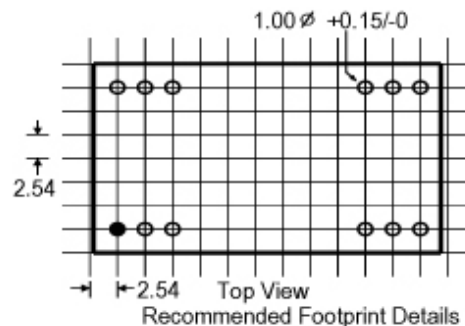
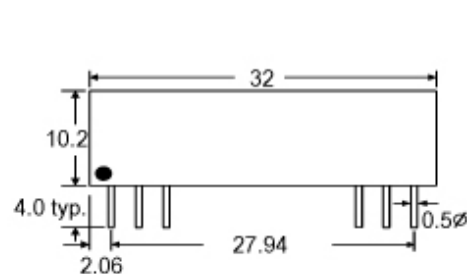
NC=No Connection

CTRL=Remote ON/OFF Control



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

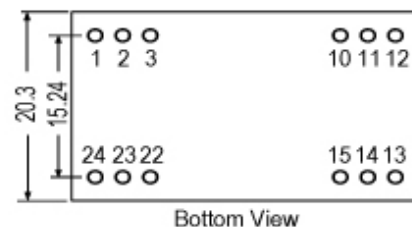
B Pinning (DIP24 Package)



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



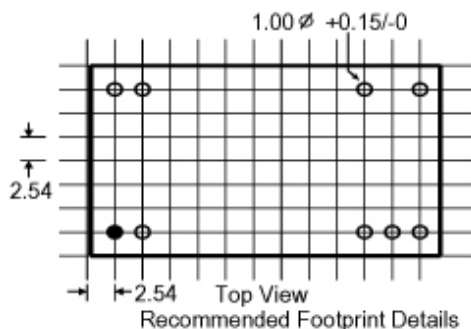
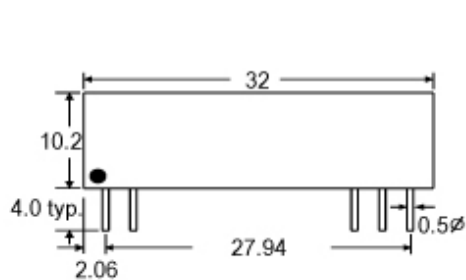
Note:
XX.X $\pm$ 0.25 mm
XX.XX $\pm$ 0.15 mm

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Mechanical dimensions/footprint

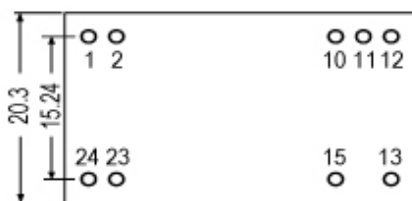
C Pinning (DIP24 Package)



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

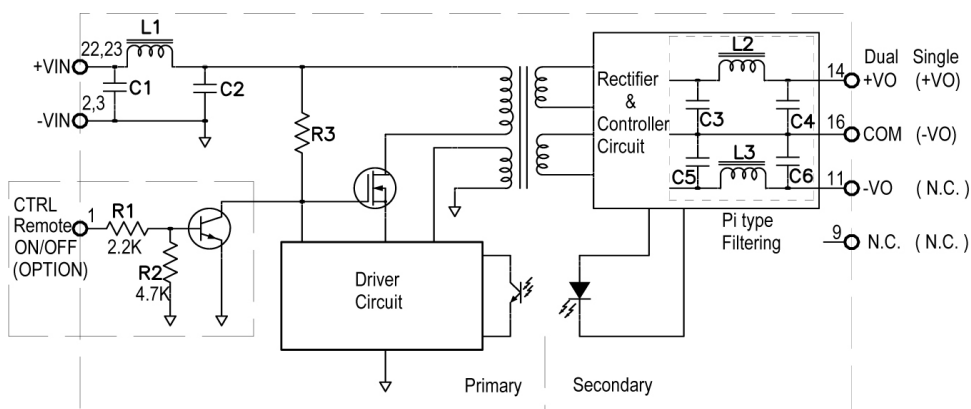


Bottom View

Note:

XX.X $\pm$ 0.25 mm
XX.XX $\pm$ 0.15 mm

Functional block diagram (A pinning)



The Values of Input π type Filtering

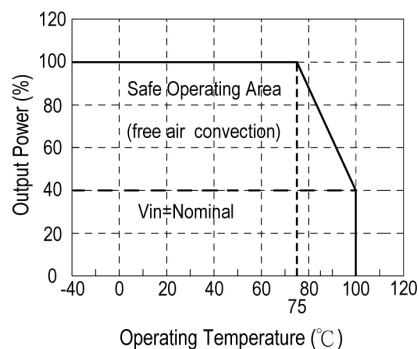
Input Voltage	C1	C2	L1
9~36VDC	0.1uF~1uF	4.7uF/50V	1uH~10uH
18~75VDC	0.1uF~1uF	1uF/100V	2.2uH~22uH

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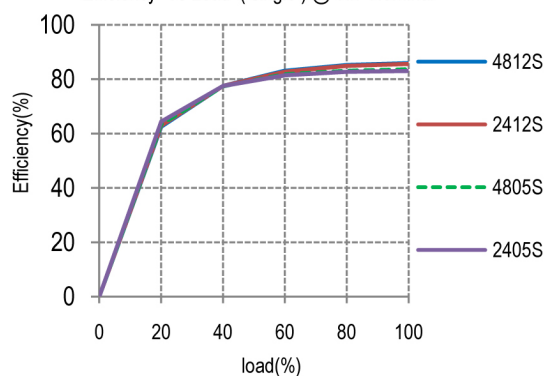
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Typical characteristics

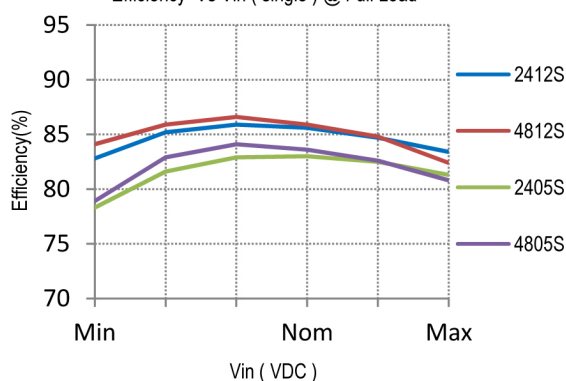
Derating Graph



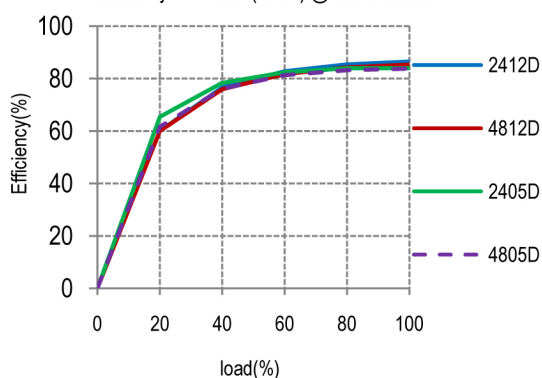
Efficiency Vs Load (single) @ Vin=Nominal



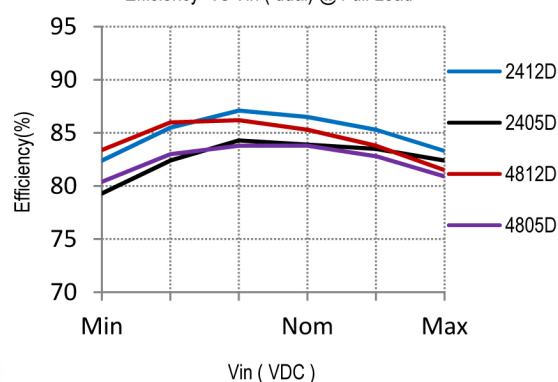
Efficiency Vs Vin (single) @ Full Load



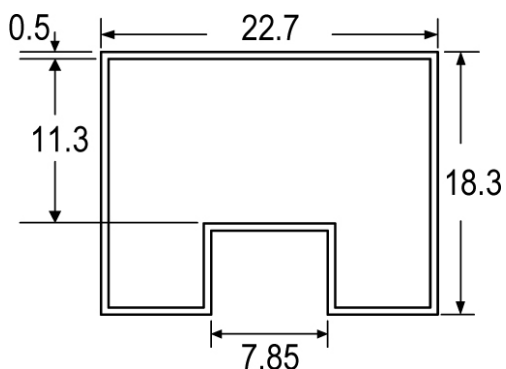
Efficiency Vs Load (dual) @ Vin=Nominal



Efficiency Vs Vin (dual) @ Full Load



Tube outline



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

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