



## 7.5DAW\_2 series

7.5W - Single/Dual Output - Ultra Wide Input - Isolated & Regulated DC-DC Converter

## DC-DC Converter

7.5 Watt

- ⊕ Wide 2:1 input voltage range
- ⊕ DIP24 package metal case (Suffix „/M“ ) and plastic case options
- ⊕ 5 side shielded metal case
- ⊕ High efficiency up to 87%
- ⊕ 7.5W single and dual outputs
- ⊕ I/O isolation 2kVDC and 3kVDC option
- ⊕ Operating temperature range -40°C to +75°C
- ⊕ Continuous short circuit protection (SCP)
- ⊕ Remote ON/OFF control option („A“ pinning only)



The 7.5DAW\_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  $\leq 2:1$ );
- 2) Where isolation is necessary between input and output (isolation  $\leq 2000\text{VDC}$ ,  $\leq 3000\text{VDC}$ );
- 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
Temperature rise at full load:	25°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C (see derating graph)
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:	150mW MAX
Temperature coefficient:	-40°C to +85°C ambient 0.015 %/°C TYP
Operating Frequency:	200kHz MIN
Case material:	Non-conductive black plastic [UL94-V0] or conductive metal [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF (MIL-HDBK 217F):	2000 Khours min.
Weight:	13g

### Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 second	2000 3000			VDC
Isolation resistance	500VDC, input to output	15			GΩ
Isolation capacitance	100KHz		30		pF

### Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	Nominal $V_{in}$ and full load		$\pm 2$		%
Line voltage regulation	$V_{in} = \text{min to max, full load}$		$\pm 0.5$		%
Load voltage regulation	20% to 100% full load		$\pm 0.5$		%
Output Ripple & Noise	20MHz Bandwidth			100	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.

### Example:

#### 7.5DAW\_2405D3

7.5 = 7.5Watt; D = DIP; A = series; W = wide input (2:1) 18-36Vin;  
5 = 5Vout; D = Dual Output; 3 = 3000VDC isolation

### Note:

1. All specifications measured at  $T_a = 25^\circ\text{C}$ , 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.

## 7.5DAW\_2 series

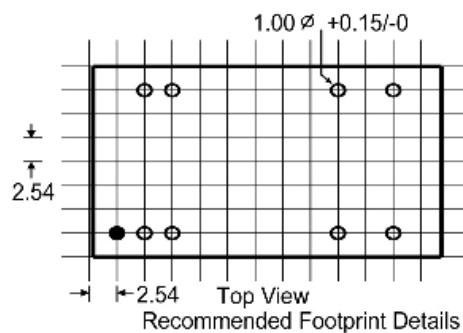
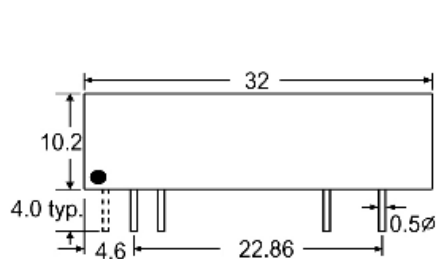
7.5W - Single/Dual Output - Wide Input - Isolated & Regulated DC-DC Converter

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacitive Load [ $\mu$ F]
7.5DAW_xx03SX	9-18, 18-36, 36-75	3.3	1500	79-81	1000
7.5DAW_xx05SX	9-18, 18-36, 36-75	5	1500	82-84	1000
7.5DAW_xx09SX	9-18, 18-36, 36-75	9	833	82-84	680
7.5DAW_xx12SX	9-18, 18-36, 36-75	12	625	84-87	470
7.5DAW_xx15SX	9-18, 18-36, 36-75	15	500	84-86	470
7.5DAW_xx24SX	9-18, 18-36, 36-75	24	312	83-84	330
7.5DAW_xx05DX	9-18, 18-36, 36-75	$\pm$ 5	$\pm$ 750	82-84	$\pm$ 470
7.5DAW_xx09DX	9-18, 18-36, 36-75	$\pm$ 9	$\pm$ 417	82-84	$\pm$ 330
7.5DAW_xx12DX	9-18, 18-36, 36-75	$\pm$ 12	$\pm$ 312	84-87	$\pm$ 220
7.5DAW_xx15DX	9-18, 18-36, 36-75	$\pm$ 15	$\pm$ 250	84-86	$\pm$ 220
7.5DAW_xx24DX	9-18, 18-36, 36-75	$\pm$ 24	$\pm$ 156	83-84	$\pm$ 100

- X=2=2kVDC or X=3=3kVDC
- xx=Input Voltage (possible for other input and output voltage combinations on request)  
Vin=9-18V, xx=12  
Vin=18-36V, xx=24  
Vin=36-75V, xx=48
- For B or C Pinning: 7.5DBW\_xx03SX or 7.5DCW\_xx03SX
- For metal case add suffix „/M“

## Mechanical dimensions/footprint

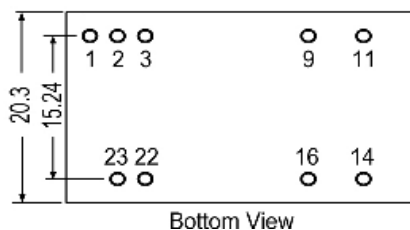
### A Pinning



#### Pin Connections

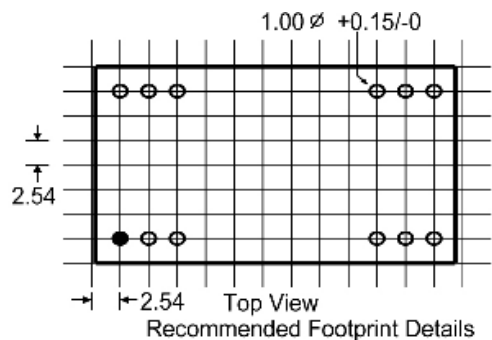
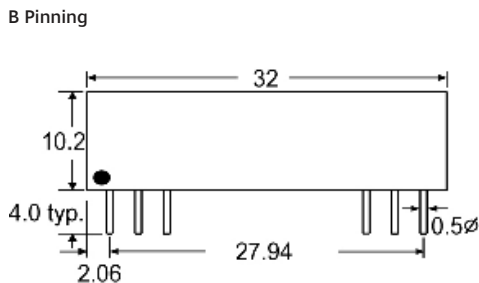
Pin#	Single	Dual
1(option)	CTRL	CTRL
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	COM
22	+Vin	+Vin
23	+Vin	+Vin

NC=No Connection  
CTRL=Remote ON/OFF Control



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

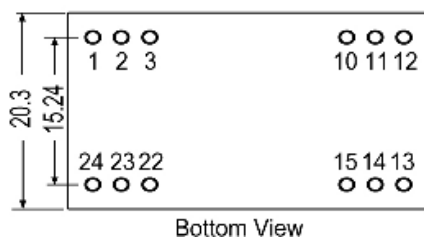
### B Pinning



#### 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



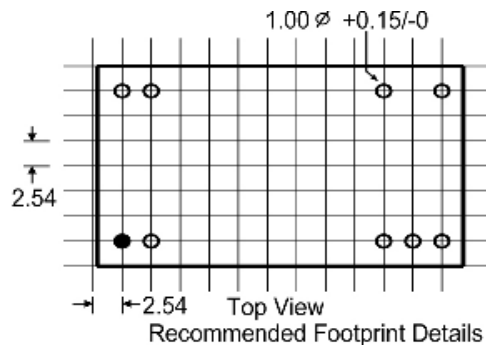
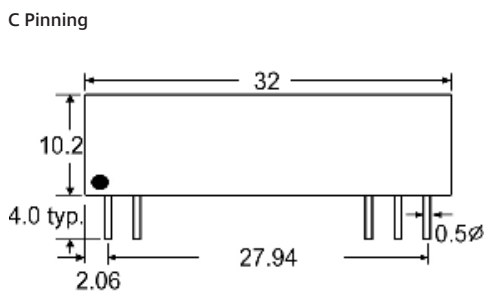
Note:  
XX.X  $\pm$  0.25 mm  
XX.XX  $\pm$  0.15 mm

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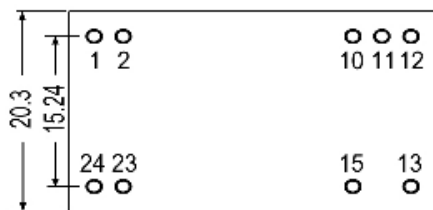
C Pinning



#### Pin Connections

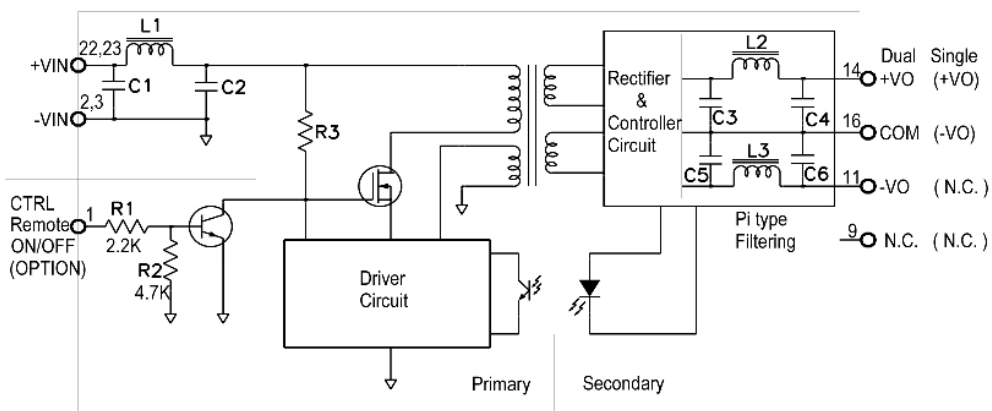
Pin#	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

NC=No Connection



Note:  
XX.X ± 0.25 mm  
XX.XX ± 0.15 mm

### Functional block diagram (A pinning)



The values of input  $\pi$  type filtering

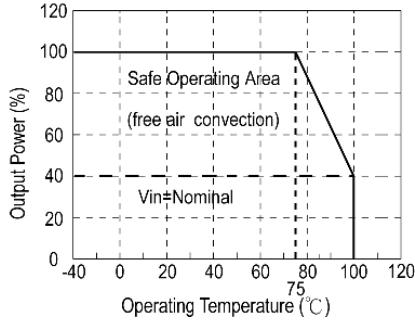
Input voltage	C1	C2	L1
9-18VDC	1 $\mu$ F~10 $\mu$ F	10 $\mu$ F/25V	0.47 $\mu$ H~4.7 $\mu$ H
18-36VDC	0.1 $\mu$ F~1 $\mu$ F	4.7 $\mu$ F/50V	1 $\mu$ H~10 $\mu$ H
36-75VDC	0.1 $\mu$ F~1 $\mu$ F	1 $\mu$ F/100V	2.2 $\mu$ H~22 $\mu$ H

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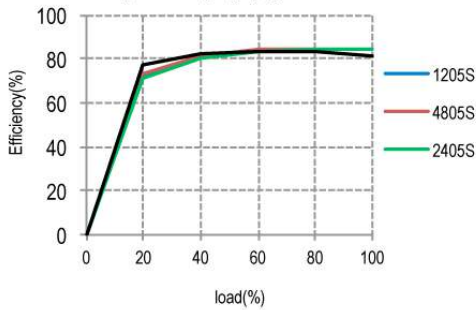
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### Typical characteristics

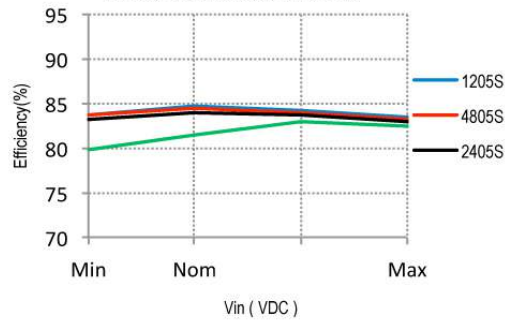
Derating Graph



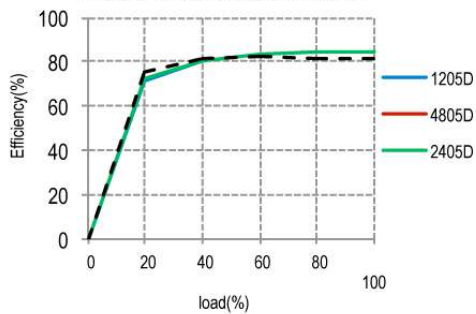
Efficiency Vs Load (single) @ Vin=Nominal



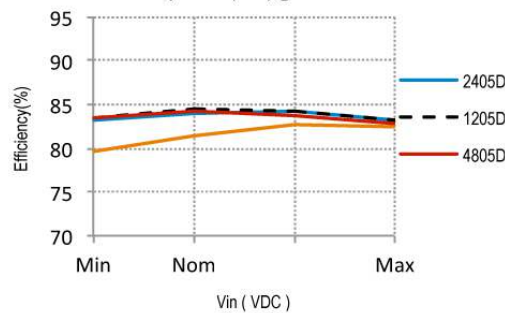
Efficiency Vs Vin (single) @ Full Load



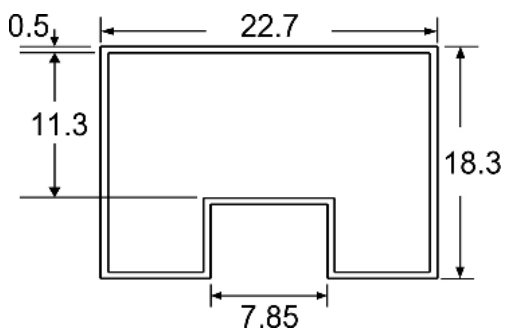
Efficiency Vs Load (dual) @ Vin=Nominal



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