

3S8W4_S & 3S8W4_D Series

3W - Dual/Single Output - 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 2KVDC and 4KVDC Option
- ⊕ Operating Temperature Range: -40°C to +85°C
- ⊕ Continuous Short Circuit Protection (SCP)
- ⊕ Remote ON/OFF Control
- ⊕ Internal PI-Filtering



RoHS

Common specifications	
Input filter:	Capacitor
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
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: 2184x10 ³ hours +85°C: 298x10 ³ hours
Weight:	4.7g

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

Note:

- All specifications 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.

The 3S8W4_S & 3S8W4_D 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:

- Where the voltage of the input power supply is wide range (voltage range≤4:1)
- Where isolation is necessary between input and output (isolation voltage≤2000VDC/4000VDC/)
- 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:

WCT**_xxyN##O

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

Example:

3S8W4_0505S2RP

3=3Watt; S8= SIP8; W4=wide input (4:1); 4,5 - 9Vin; 5Vout;
S= Single Output; 2= 2000VDC; R= Regulated Output
P= Short Circuit Protection

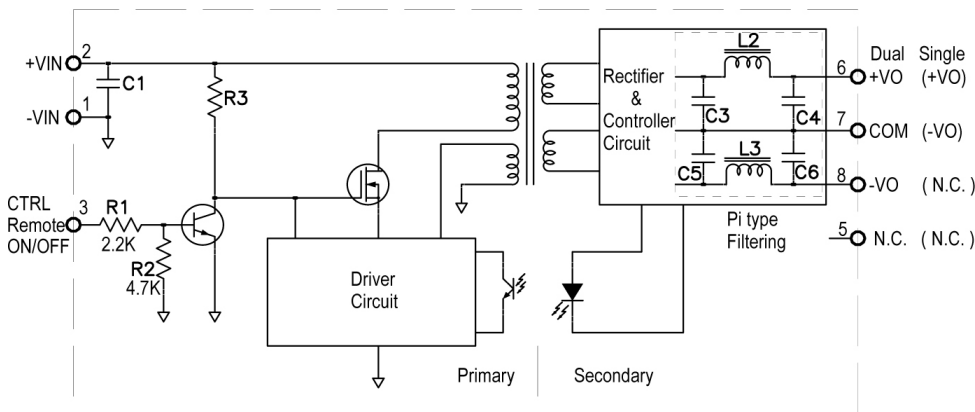
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacitive Load [μ F]
3S8W4_xx03SX	4.5-18, 9-36, 18-75	3.3	600	78-80	1000
3S8W4_xx05SX	4.5-18, 9-36, 18-75	5	600	82-83	1000
3S8W4_xx12SX	4.5-18, 9-36, 18-75	12	250	85	470
3S8W4_xx15SX	4.5-18, 9-36, 18-75	15	200	85	330
3S8W4_xx05DX	4.5-18, 9-36, 18-75	\pm 5	\pm 300	82-84	\pm 470
3S8W4_xx12DX	4.5-18, 9-36, 18-75	\pm 12	\pm 125	84-86	\pm 100
3S8W4_xx15DX	4.5-18, 9-36, 18-75	\pm 15	\pm 100	85-86	\pm 47

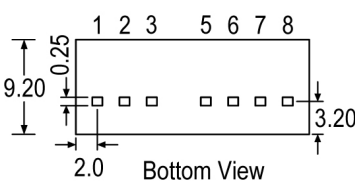
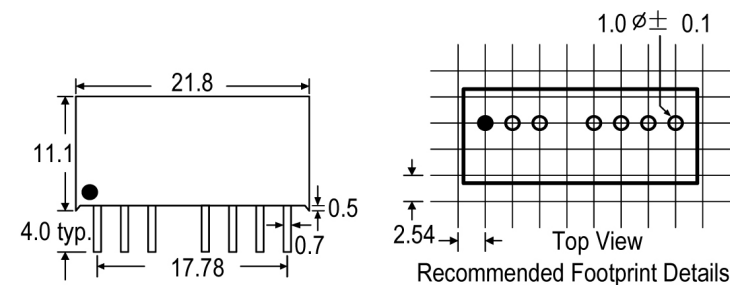
- X=2=2KVDC, X=4=4KVDC
- xx=Input Voltage (possible for other input and output voltage combinations on request)
 Vin=4.5-18V, xx=12
 Vin=9-36V, xx=24
 Vin=18-75V, xx=48

Functional block diagram



Input Voltage	C1 Values
4.5~18VDC	10 μ F/25V
9~36VDC	4.7 μ F/50V
18~75VDC	1 μ F/100V

Mechanical dimensions and footprint



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

Pin Connections

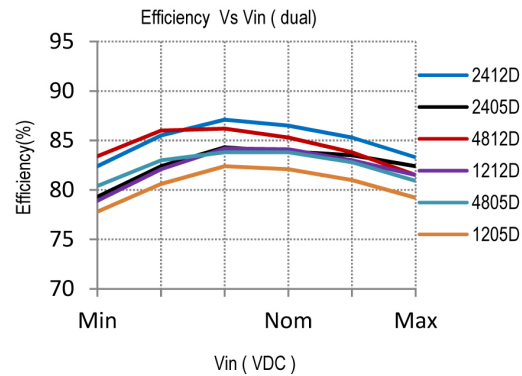
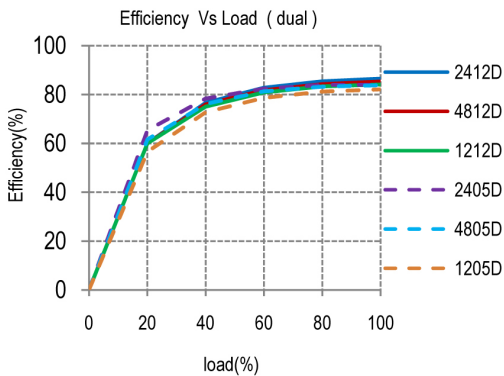
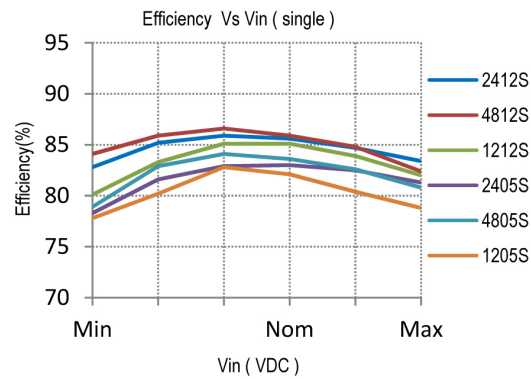
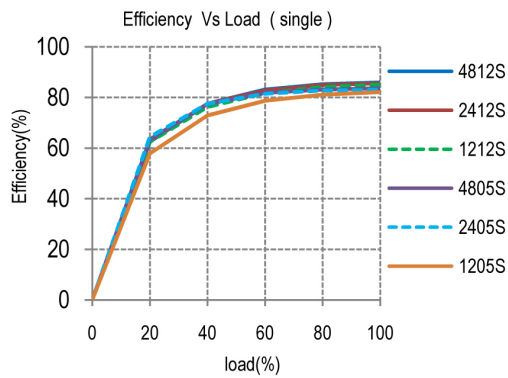
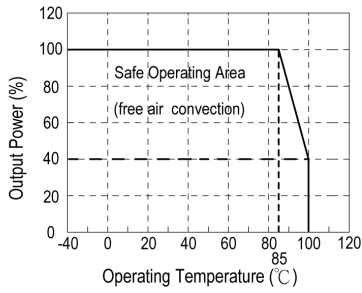
Pin#	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	CTRL	CTRL
5	NC	NC
6	+Vout	+Vout
7	-Vout	COM
8	NC	-Vout

NC=No Connection
 CTRL=Remote ON/OFF Control

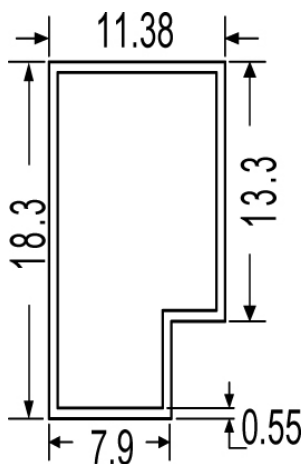
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Typical characteristics



Tube outline



Note:
Unit: mm[inch]
General tolerances: ± 0.50 mm

L=520mm
Tube quantity: 23pcs