2S8W_5.2RP series

2W - Dual/Single Output - Wide Input - Isolated & Regulated DC-DC Converter

DC-DC Converter 2 Watt

- Wide 2:1 Input Voltage Range
- High Efficiency up to 85%
- 2W Single and Dual outputs
- I/O Isolation 2kVDC, 4kVDC and 5.2kVDC Option
- Operating Temperature Range: -40°C to +85°C
- Continuous Short Circuit Protection (SCP)
- Remote ON/OFF Control

The 2S8W_5.2RP 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 ≤2:1) including 4.5V-9V,9V-18V,18V-36V and 36V-75V.
2) Where isolation is necessary between input and output (isolation voltage ≤5200VDC)
3) The high efficiency allows -40°C to +85°C operating temperature.

Common specifications	
Input filter:	Capacitor
Short circuit protection:	Continuous
Temperature rise at full load:	15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C
Operating 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 TYP
Operating Frequency:	150kHz MIN
Case material:	Non-conductive black plastic [UL94-V0]
Dimension	21.8*9.2*11.1mm
Potting material:	Epoxy [UL94-V0]
MTBF (MIL-HDBK 217F):	+25°C: 2467x10³ hours +85°C: 457x10³ hours

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 second	2 & 4 & 5.2kVDC			
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 Vin and full load		±2		%
Line regulation	Vin=min to max,full load		±0.5		%
Load regulation	20% to 100% full load		±0.5		%
Output Ripple & Noise	20MHz Bandwidth			60	mVp-p
Remote Power OFF (leave open if not used)	Device ON				open or <0.8 VDC
(15 VDC max.)	Device OFF Device OFF (Stand by input current)				CTRL>1.5VDC 0.5mA max.

Example:
2S8W_0505S5.2RP
2 = 2Watt; S8 = SIP8; W = wide input 4,5 - 9Vin (2:1); 05 = 05Vin; 05 = 5Vout; S = Single Output; 5.2 = 5200VDC isolation; R = Regulated Output

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.

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacative Load [µF]
2S8W_0503S5.2RP	4.5-9	3.3	400	76-81	680
2S8W_0505S5.2RP	4.5-9	5	400	77-82	680
2S8W_0509S5.2RP	4.5-9	9	222	77-83	470
2S8W_0512S5.2RP	4.5-9	12	167	80-85	330
2S8W_0515S5.2RP	4.5-9	15	133	80-85	330
2S8W_0503D5.2RP	4.5-9	±3.3	±200	76-81	±330
2S8W_0505D5.2RP	4.5-9	±5	±200	77-82	±330
2S8W_0509D5.2RP	4.5-9	±9	±111	81-85	±220
2S8W_0512D5.2RP	4.5-9	±12	±83	81-85	±220
2S8W_0515D5.2RP	4.5-9	±15	±66	81-85	±220

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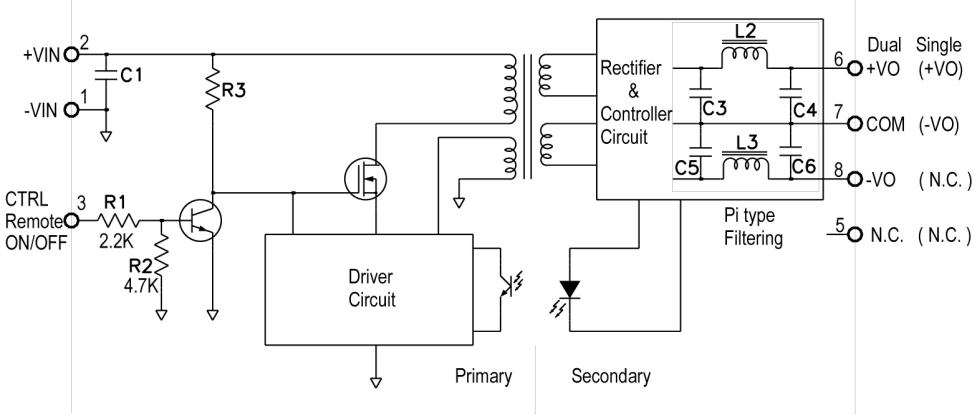
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacative Load [µF]
2S8W_1203S5.2RP	9-18	3.3	400	76-81	680
2S8W_1205S5.2RP	9-18	5	400	77-82	680
2S8W_1209S5.2RP	9-18	9	222	77-83	470
2S8W_1212S5.2RP	9-18	12	167	80-85	330
2S8W_1215S5.2RP	9-18	15	133	80-85	330
2S8W_1203D5.2RP	9-18	±3.3	±200	76-81	±330
2S8W_1205D5.2RP	9-18	±5	±200	77-82	±330
2S8W_1209D5.2RP	9-18	±9	±111	81-85	±220
2S8W_1212D5.2RP	9-18	±12	±83	81-85	±220
2S8W_1215D5.2RP	9-18	±15	±66	81-85	±220

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacative Load [µF]
2S8W_2403S5.2RP	18-36	3.3	400	76-81	680
2S8W_2405S5.2RP	18-36	5	400	77-82	680
2S8W_2409S5.2RP	18-36	9	222	77-83	470
2S8W_2412S5.2RP	18-36	12	167	80-85	330
2S8W_2415S5.2RP	18-36	15	133	80-85	330
2S8W_2403D5.2RP	18-36	±3.3	±200	76-81	±330
2S8W_2405D5.2RP	18-36	±5	±200	77-82	±330
2S8W_2409D5.2RP	18-36	±9	±111	81-85	±220
2S8W_2412D5.2RP	18-36	±12	±83	81-85	±220
2S8W_2415D5.2RP	18-36	±15	±66	81-85	±220

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Max. Capacative Load [µF]
2S8W_4803S5.2RP	36-75	3.3	400	76-81	680
2S8W_4805S5.2RP	36-75	5	400	77-82	680
2S8W_4809S5.2RP	36-75	9	222	77-83	470
2S8W_4812S5.2RP	36-75	12	167	80-85	330
2S8W_4815S5.2RP	36-75	15	133	80-85	330
2S8W_4803D5.2RP	36-75	±3.3	±200	76-81	±330
2S8W_4805D5.2RP	36-75	±5	±200	77-82	±330
2S8W_4809D5.2RP	36-75	±9	±111	81-85	±220
2S8W_4812D5.2RP	36-75	±12	±83	81-85	±220
2S8W_4815D5.2RP	36-75	±15	±66	81-85	±220

Functional block diagram



Input voltage	C1 values
4.5-18V	10µF/25V
18-36V	4.7µF/50V
36-75V	1µF/100V

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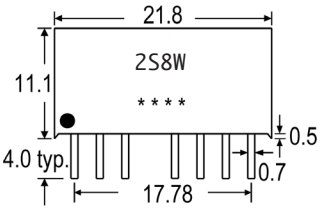
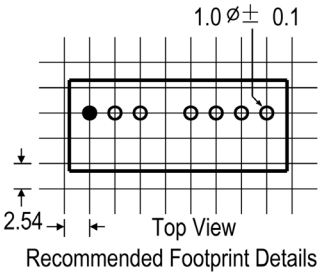
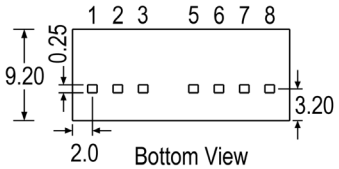
Mechanical dimensions and footprint





Recommended Footprint Details



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