SPS20 Series – Isolated DC/DC Converters
18 – 36Vdc Input, Maximum Power: 20W

Data Sheet
FEB 10, 2011

SPS20 Series –small size isolated DC/DC converters

Features

- High Efficiency
- Wide operating temperature range
  (-20˚C to +71˚C)
- Wide 2:1 input range
- Built – in over current protection circuit
- Input – Output Isolated
- Remote on/off control
- Trimmable output voltage(single output)
- Open case type
- Long Life Design
  (employ only ceramic capacitor)
- Safety agency approval
  UL (UL 60950,CSA C22.2 NO.60950):
  E227474
  CE (EN 60950) through TÜV
- RoHS directive

Applications

- Telecommunication
- Datacom
- Instrumentation
- Distributed Power System

Description

SPS20 Series is a isolated DC/DC converter offering designers low cost and space-efficient solution, Remote on/off, precisely regulated, over current protection.

The -20˚C to 71˚C operating temperature range makes the SPS series ideal for mixed analog/digital Subsystems.,data communication equipments, distributed power systems. They are an excellent choice for both new designs and upgrading older systems

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Notes
Input Voltage Continuous	18	-	36	VDC	
Operating Ambient Temperature	-20	-	85	˚C	
Storage Temperature	-40	-	105	˚C	
I/O Isolation Voltage	-	-	500	VAC	

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device

Electrical Specifications

Input Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Operating voltage Range		18		36	Vdc
Maximum Input current (At nominal input voltage and Maximum Output Power)	I_{in}		0.969		A (@5V)
No load Input Current SPS20-24-3R3 SPS20-24-5 SPS20-24-12 SPS20-24-15 SPD20-24-1212 SPD20-24-1515			 43 51 18 17 18 18		mA
Disabled input current SPS20-24-5 (Remote on/off control)					mA

Output Characteristics

T_A = +25˚C Vin = 18 ~ 36V unless otherwise specified

Parameter	Symbol	Min	Typ	Max	Unit
Output Voltage tolerance	V_o	-	-	±2	%
Output Current	Io				
SPS20-24-3R3				4.0	A
SPS20-24-5				4.0	A
SPS20-24-12				1.7	A
SPS20-24-15				1.4	A
SPD20-24-1212				850	mA
SPD20-24-1515				680	mA
Output Regulation; - Line Regulation (From minimum input voltage to maximum input voltage, constant load)		-	-	±0.5	%
- Load Regulation (From no load to maximum load, Constant load)		-	-	±1	%
Output Current Limit (Automatic recovery)		>105			%
Output Ripple and noise (Vin =24V, and Io =Max Output Current Bandwidth 20MHz, 1uF Ceramic cap)	mVp-p	-	-	1% of Vout	mV
Efficiency					
SPS20-24-3R3			86		%
SPS20-24-5			88		%
SPS20-24-12			89		%
SPS20-24-15			89		%
SPD20-24-1212			89		%
SPD20-24-1515			89		%
(100% of max Io, V_{in} = 24V)					

Dynamic Load Response (1uF Ceramic 50% to 100 %, 100% to 50%, Tr = 100uS)			±	3% of Output Voltage	mV
Start – Up Time		-	-	10	ms
Turn – on overshoot		-	-	5	%
Maximum output capacitance					μF

Isolation Specifications

Parameter	Symbol	Min	Typ	Max	Unit
I/O Isolation Voltage (AC500V, 1 Min) - Input-Output: - Input-Case: - Output-case:			 - - -	 500 500 500	 VAC VAC VAC
Isolation Resistance - Output-Case (at DC500V at 25˚C And 70%RH for 1 min)	RISO	>100	-	-	MΩ
Isolation Capacitance	CISO				pF

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Switching Frequency			300		KHz
Remote ON/OFF control - Positive Logic On = short to - Vin Off = open					 VDC

Output voltage trim range			±10		%
MTBF		5.5x10^5			hrs
Dimensions (W.H.L)		30.5x12.2x45.7			mm
Weight		-	14.8	-	Grams

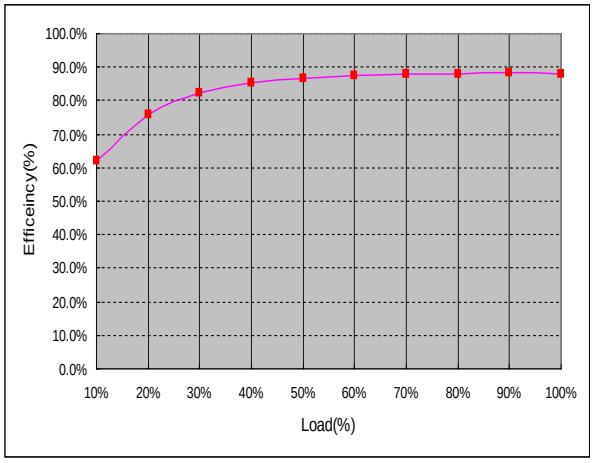
Environmental

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature		-20		+85	˚C
Operating Humidity (RH non-condensing)		5		95	%
Storage Temperature		-40		105	˚C

Characteristic Curves

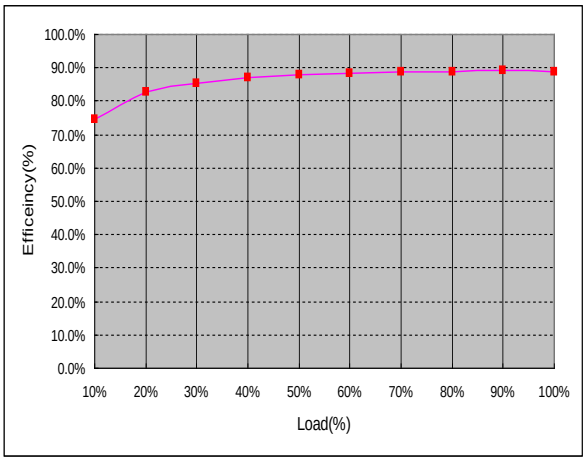
Efficiency Curves

SPS20-24-5



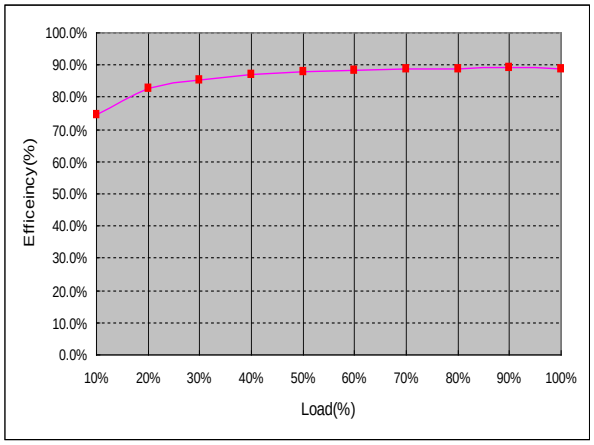
Vin=24V, Vo=5V@4A , At 25°C

SPS20-24-12



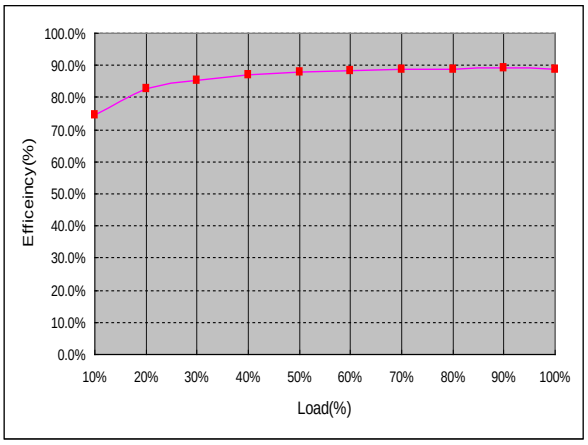
Vin=24V, Vo=12V@1.7A , At 25°C

SPD20-24-1212



Vin=24V, Vo=+12V,-12V@0.85A , At 25°C

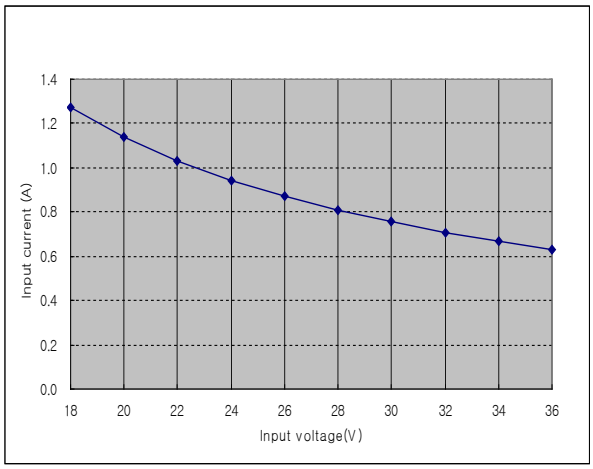
SPD20-24-1515



Vin=24V, Vo=+15V,-15V@0.7A , At 25°C

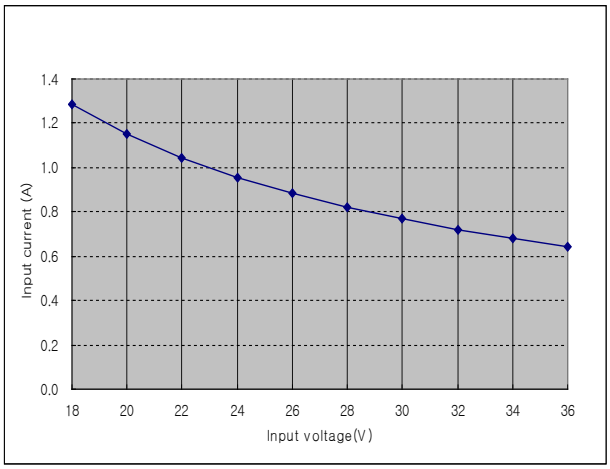
Input Voltage vs Input Current

SPS20-24-5



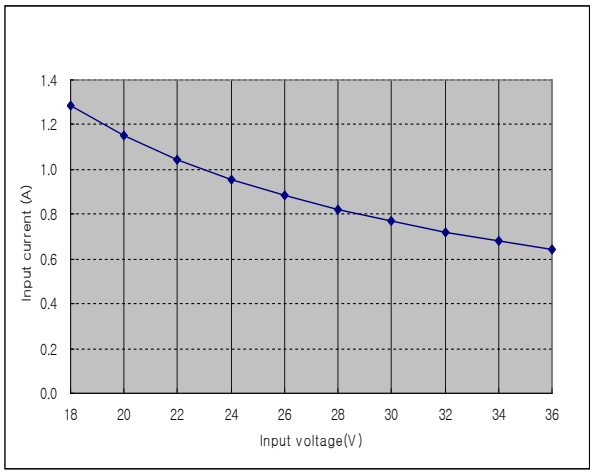
Vin=24V, Vo=5V@4A, At 25°C

SPS20-24-12



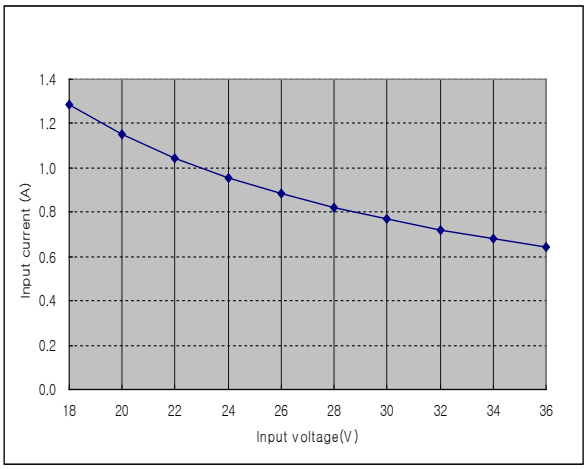
Vin=24V, Vo=12V@1.7A , At 25°C

SPD20-24-1212



Vin=24V, Vo=+12V,-12V@0.85A , At 25°C

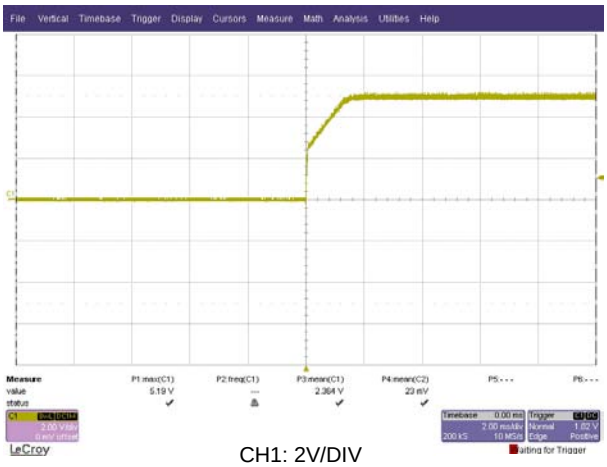
SPD20-24-1212



Vin=24V, Vo=+15V,-15V@0.7A , At 25°C

Start-up from Vin

SPS20-24-5

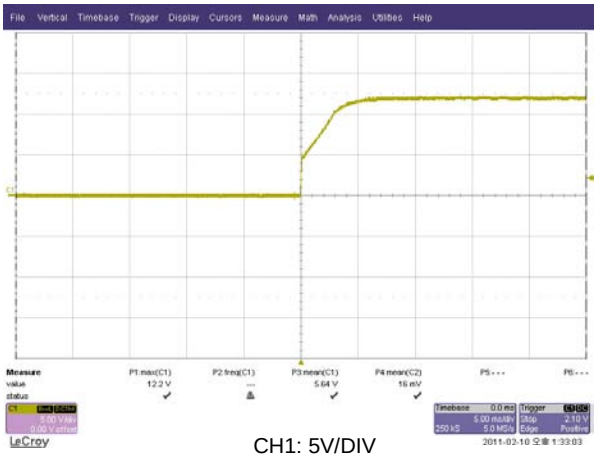


CH1: 2V/DIV

2ms/DIV

Vin=24V, Vo=5V@4A , At 25°C

SPS20-24-12



CH1: 5V/DIV

5ms/DIV

Vin=24V, Vo=12V@1.7A, At 25°C

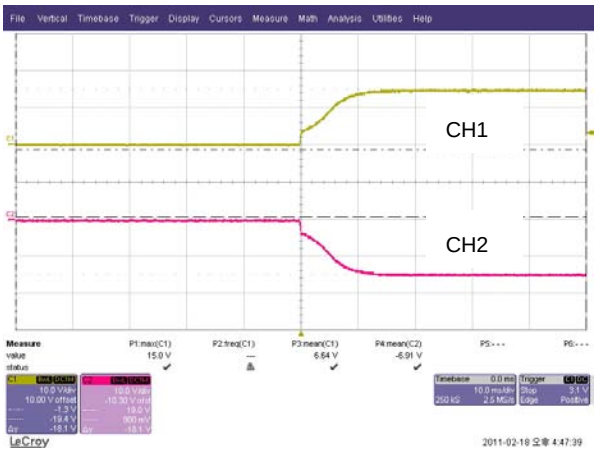
SPS20-24-1212

CH1,2: 5V/DIV

10mS/DIV

Vin = 24V, Vo=+12V,-12V@0.85A, At 25°C

SPS20-24-1515



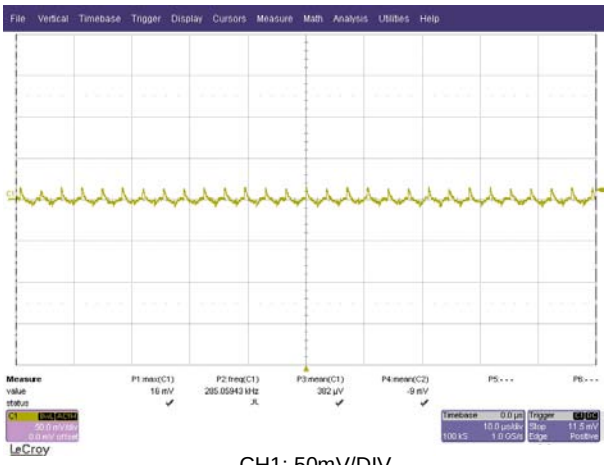
CH1,2 : 10V/DIV

10mS/DIV

Vin = 24V, Vo=+15V,-15V@0.7A, At 25°

Output Ripple/Noise

SPS20-24-5

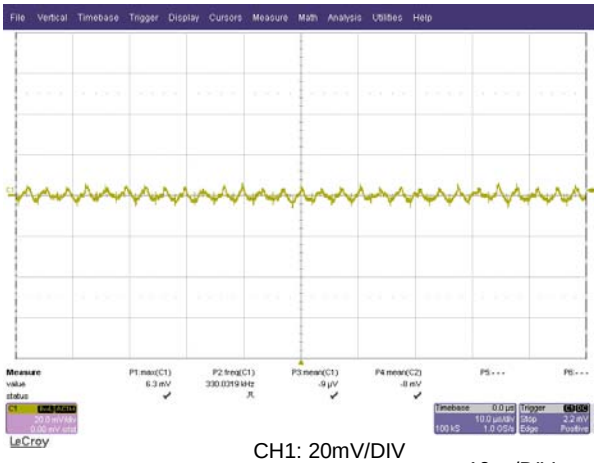


CH1: 50mV/DIV

10us/DIV

Vin=24V, Vo=5V@4A , At 25°C

SPS20-24-12

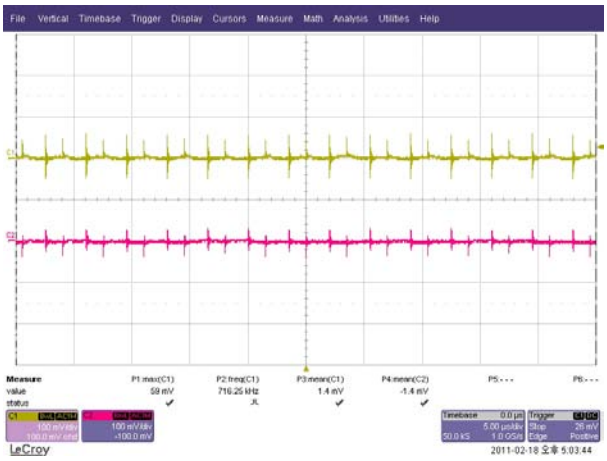


CH1: 20mV/DIV

10us/DIV

Vin=24V, Vo=12V@1.7A,At 25°C

SPS20-24-1212

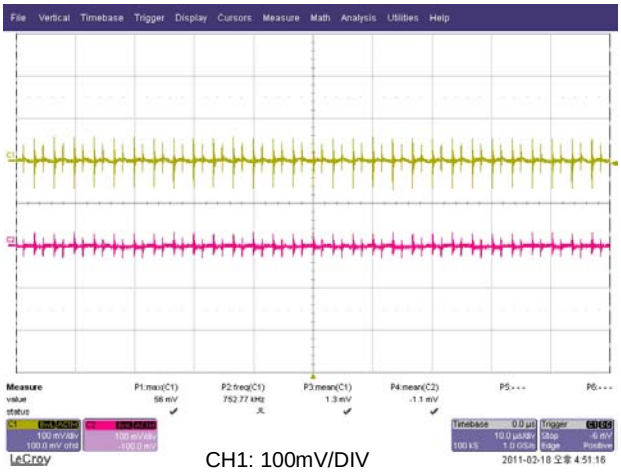


CH1: 100mV/DIV

5us/DIV

Vin = 24V, Vo=+12V,-12V@0.85A, At 25°C

SPS20-24-1515



CH1: 100mV/DIV

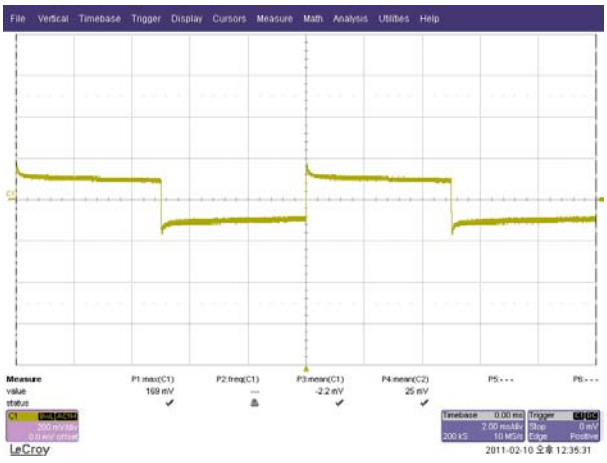
10us/DIV

Vin = 24V, Vo=+15V,-15V@0.7A, At 25°C

Output Load Transient Response

(Dynamic load change from 50% to 100% of full load)

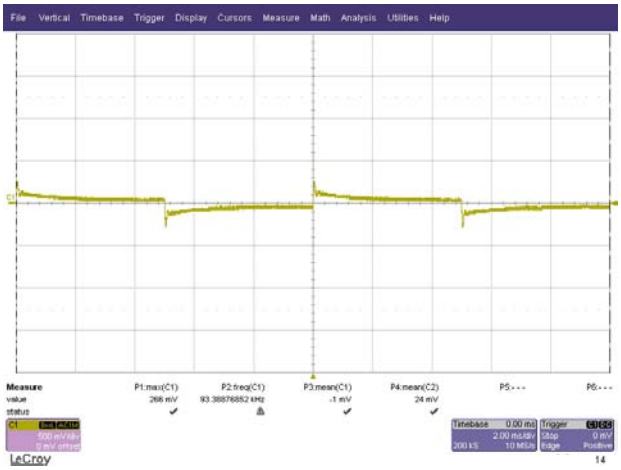
SPS20-24-5



CH1: 200mV/DIV 2ms/DIV

Vin=24V, Vo=5V@4A , At 25°C

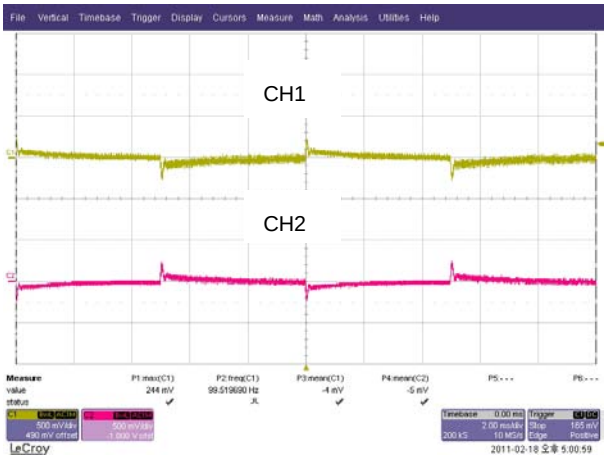
SPS20-24-12



CH1: 500mV/DIV 2ms/DIV

Vin=24V, Vo=12V@1.7A, At 25°C

SPS20-24-1212

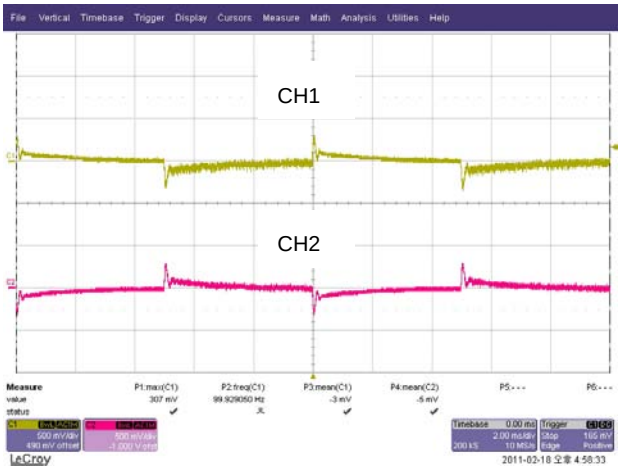


CH1,2: 500mV/DIV

2ms/DIV

Vin = 24V, Vo=+12V,-12V@0.85A

SPS20-24-1515



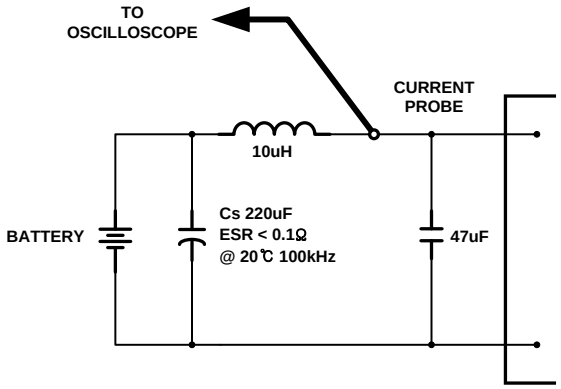
CH2,3: 100mV/DIV

2ms/DIV

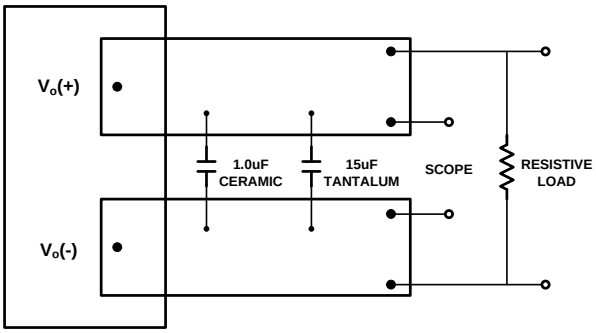
Vin=24V,Vo=+15V,-15V@0.7A, At 25°C

TEST Configurations

Input Reflected Ripple Current Test

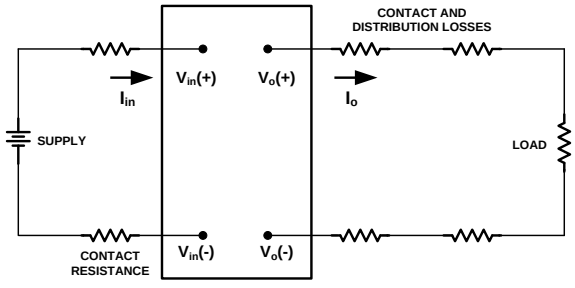


Output ripple and noise Test



* Conductor from Vout-pins to capacitors = 50mm (1.97in)

Output Voltage and Efficiency Test



*All measurements are taken at the module terminals when Socketing, place Kelvin connections at module terminals to Avoid measurement errors due to socket contact resistance

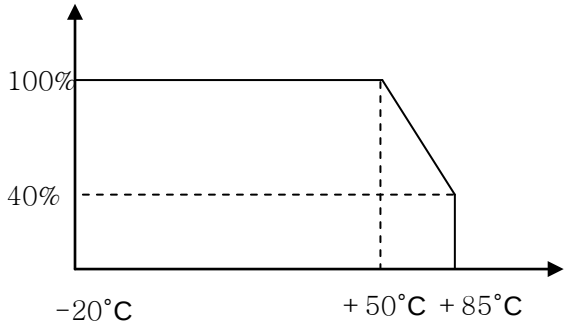
Efficiency

$$\eta = \left(\frac{[V_O(+) - V_O(-)] \times I_O}{[V_{in}(+) - V_{in}(-)] \times I_{in}} \right) \times 100\%$$

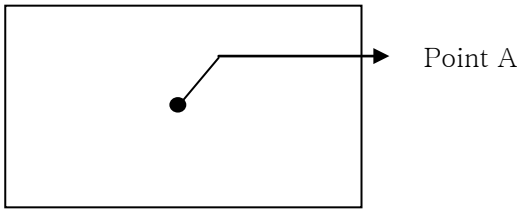
Thermal Considerations

SPS20 series has wide operating temperature range from -20˚C to +85˚C.

However, it should be required a enough air flow for more reliable operation. Output derating curve provide designers with a quantity of a current under the desired ambient temperature and velocity of a airflow



If the device is installed in a system, the device's temperature of point A should be checked if does not exceed specified temperature as below. Please make sure that the ambient temperature does not exceed 85˚C.



Output	20W			
Temp	100˚C			

Feature Description

Input Fuse

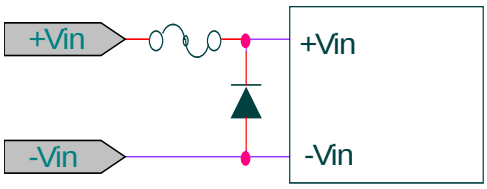
SPS20 series has not built in internal fuse. Therefore in order to ensure protection and safety fuses should be used at input line of converter

We recommend to use a slow blow type fuse with a typical value of about twice the maximum input current, calculated at low line with the converter minimum efficiency.

Input Reverse-polarity voltage protection

Input reverse voltage protection has not built in this product.

So, you can set up a circuit externally as described below if necessary



Input Output Filter

SPS series have an internal input filter. To minimize the ripple and noise of the input voltage, additional external capacitor is required (10uF ~ 680uF)

To reduce a output ripple and noise, external capacitor is required at the output of the device

Remote ON/OFF Control (CNT)

By using CNT pin you can control the output without turning the input power on or off.

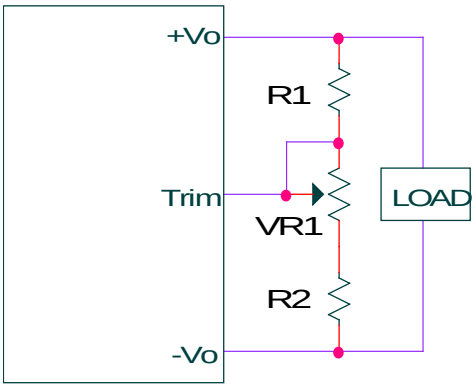
If you need not this function short CNT Pin to –Vin.

CNT Level for –Vin	OUTPUT
Open	OFF
Short	ON

Output voltage variation (Trim)

Output Voltage adjusted by using trim pin within ±10% of output voltage.

Use of trim function can cause the output power to increase, so you should not use beyond the SPS's specified output power rating



Output voltage	VR	R1	R2
3.3V	500Ω	1kΩ	560Ω
5V	1kΩ	1kΩ	680Ω
12V	1kΩ	3.9kΩ	680Ω
15V	1kΩ	5.6k	750Ω

Over current Protection(OCP)

SPS series built in over current protection circuit Which operates when the output current is over 105% of rating and automatically recovers when over current condition is removed

If load is connected to a inductive or constant current load such as lamp of motor, output may not start up.

Over Voltage Protection(OVP)

SPS series has not built in overvoltage protection circuit. So, you need to set up a circuit externally which can protect the over voltage if necessary.

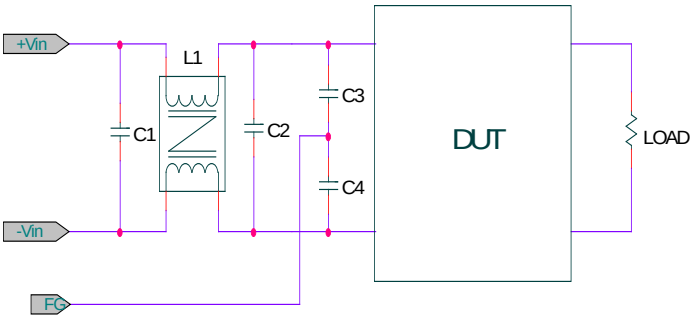
Soldering Information

The product is intended for through hole mounting in a PCB, When wave soldering is used, the temperature on the pins is specified to maximum 260˚C for maximum 10 seconds

when hand soldering, care should be taken to avoid direct contact between the hot soldering iron tip and the pins for more than a few seconds in order to prevent overheating.

EMI Characteristic (conducted Emission)

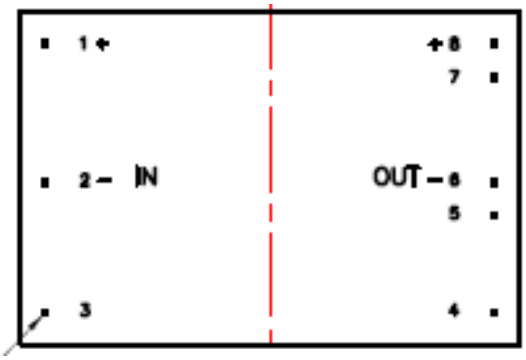
In order to reduce conducted noise install an external input filter as shown in below.



Model Number	L1	C1	C2	C3,C4
SPS20-24-5	3mH	22uF	100uF	222
SPS20-48-5	2mH	22uF	100uF	222

Complies with CISPR 22 CLASS B

Pin assignments



Single Output

PIN NO	NAME	FUNCTION
1	+Vin	Positive terminal for 24V
2	-Vin	Negative terminal for 24V
3	CNT	Logic signal reference to Vin to Turn the converter ON/OFF
4	Trim	Output voltage variation
5, 6	-Vout	Negative terminal for Vout
7, 8	+Vout	Positive terminal for Vout

Dual Output

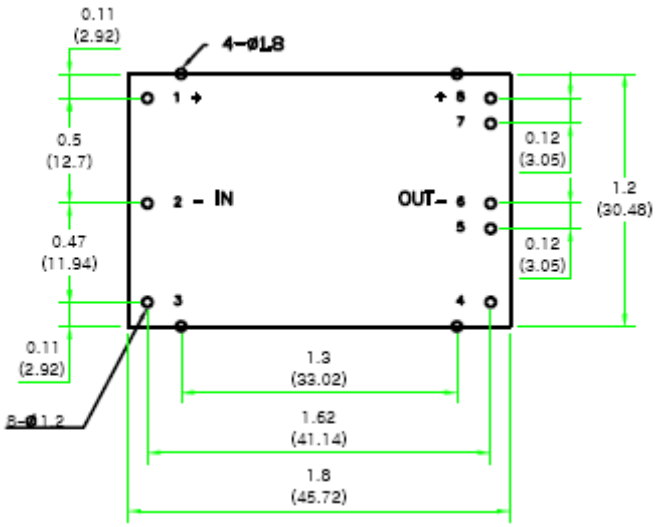
PIN NO	NAME	FUNCTION
1	+Vin	Positive terminal for 24V
2	-Vin	Negative terminal for 24V
3	CNT	Logic signal reference to Vin to Turn the converter ON/OFF
4	Output2	Negative terminal for Vout
5	No Pin	
6	COM	Common
7	No Pin	
8	Output1	Positive terminal for Vout

Mechanical Specification

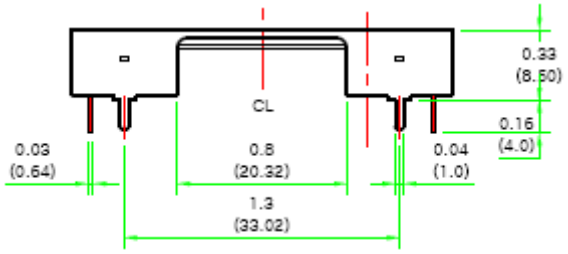
SPS20 Series – Isolated DC/DC Converters
18 – 36Vdc Input, Maximum Power: 20W

Data Sheet
FEB 10, 2011

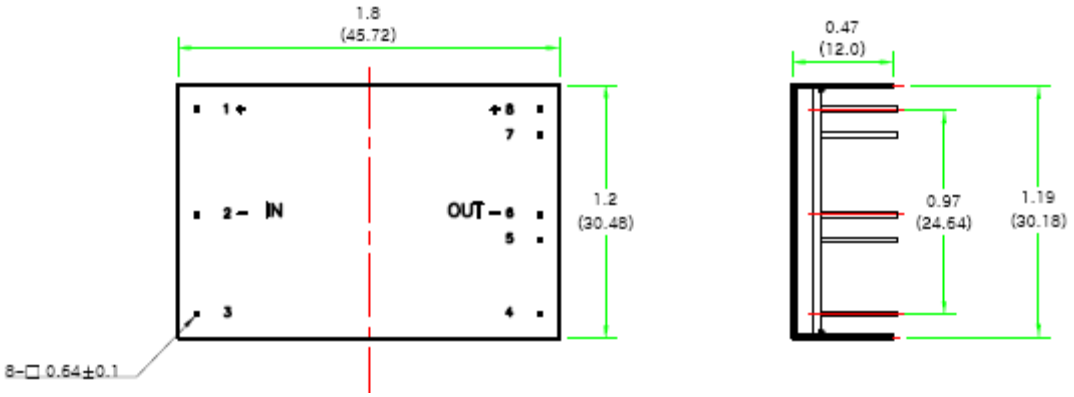
TOP VIEW



SIDE VIEW



OTHER VIEW

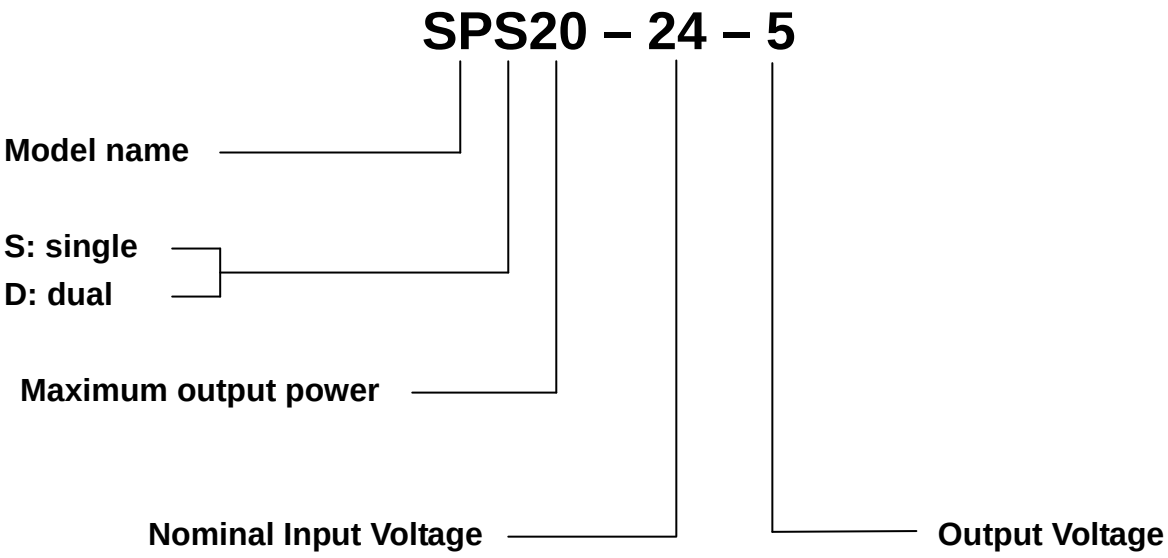


All dimensions are inches and mm

Ordering Information

Input	Output1, Output2	Maximum Power	Ripple & Noise Typ.	Efficiency Typ.	Model Number
18 – 36V	3.3V@4A	13.2W	50mVp-p	86%	SPS20-24-3R3
	5V@4A	20W	50mVp-p	87%	SPS20-24-5
	12V@1.7A	20.4W	120mVp-p	88%	SPS20-24-12
	15V@1.4A	21W	150mVp-p	89%	SPS20-24-15
	+12V@850mA, -12V@850mA	20.4W	120mVp-p	89%	SPD20-24-1212
	+15V@680mA, -15V@680mA	20.4W	150mVp-p	89%	SPD20-24-1515
36 – 76V	3.3V@4A	13.2W	50mVp-p	86%	SPS20-48-3R3
	5V@4A	20W	50mVp-p	87%	SPS20-48-5
	12V@1.7A	20.4W	120mVp-p	88%	SPS20-48-12
	15V@1.4A	21W	150mVp-p	89%	SPS20-48-15
	+12V@850mA, -12V@850mA	20.4W	120mVp-p	89%	SPD20-48-1212
	+15V@680mA -15V@680mA	20.4W	150mVp-p	89%	SPD20-48-1515

Part number structure



HEAD OFFICE & FACTORY

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GENERAL SALES INQUIRIES

Please feel free to
contact : sales@powerplaza.co.kr

SPS20 Series – Isolated DC/DC Converters
36 – 76Vdc Input, Maximum Power: 20W

Data Sheet
FEB 10, 2011

SPS20 Series –small size isolated DC/DC converters

Features

- High Efficiency
- Wide operating temperature range
  (-20˚C to +71˚C)
- Wide 2:1 input range
- Built – in over current protection circuit
- Input – Output Isolated
- Remote on/off control
- Trimmable output voltage(single output)
- Open case type
- Long Life Design
  (employ only ceramic capacitor)
- Safety agency approval :Pending
  UL (UL 60950,CSA C22.2 NO.60950):
  E227474
  CE (EN 60950) through TÜV
- RoHS directive

Applications

- Telecommunication
- Datacom
- Instrumentation
- Distributed Power System

Description

SPS20 Series is a isolated DC/DC converter offering designers low cost and space-efficient solution, Remote on/off, precisely regulated, over current protection.

The -20˚C to 71˚C operating temperature range makes the SPS series ideal for mixed analog/digital Subsystems, data communication equipments, distributed power systems. They are an excellent choice for both new designs and upgrading older systems

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Notes
Input Voltage Continuous	36	-	76	VDC	
Operating Ambient Temperature	-20	-	85	˚C	
Storage Temperature	-40	-	105	˚C	
I/O Isolation Voltage	-	-	500	VAC	

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device

Electrical Specifications

Input Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Operating voltage Range		36		76	Vdc
Maximum Input current (At nominal input voltage and Maximum Output Power)	I_{in}		0.486		A (@5V)
No load Input Current SPS20-48-3R3 SPS20-48-5 SPS20-48-12 SPS20-48-15 SPD20-48-1212 SPD20-48-1515			 21 31 12 13 13 13		mA
Disabled input current SPS20-48-5 (Remote on/off control)					mA

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36 – 76Vdc Input, Maximum Power: 20W

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Output Characteristics

T_A = +25˚C Vin = 36 ~ 76V unless otherwise specified

Parameter	Symbol	Min	Typ	Max	Unit
Output Voltage tolerance	V_o	-	-	±2	%
Output Current	Io				
SPS20-48-3R3				4.0	A
SPS20-48-5				4.0	A
SPS20-48-12				1.7	A
SPS20-48-15				1.4	A
SPD20-48-1212				850	mA
SPD20-48-1515				680	mA
Output Regulation;					
- Line Regulation		-	-	±0.5	%
(From minimum input voltage to maximum input voltage, constant load)					
- Load Regulation		-	-	±1	%
(From no load to maximum load, Constant load)					
Output Current Limit (Automatic recovery)		>105			%
Output Ripple and noise (Vin =48V, and Io =Max Output Current Bandwidth 20MHz, 1uF Ceramic cap)	mVp-p	-	-	1% of Vout	mV
Efficiency					
SPS20-48-3R3			86		%
SPS20-48-5			87		%
SPS20-48-12			88		%
SPS20-48-15			89		%
SPD20-48-1212			89		%
SPD20-48-1515			89		%
(100% of max Io, V_{in} = 48V)					

Dynamic Load Response (1uF Ceramic 50% to 100 %, 100% to 50%, Tr = 100uS)			±	3% of Output Voltage	mV
Start – Up Time		-	-	10	ms
Turn – on overshoot		-	-	5	%
Maximum output capacitance					μF

Isolation Specifications

Parameter	Symbol	Min	Typ	Max	Unit
I/O Isolation Voltage (AC500V, 1 Min) - Input-Output: - Input-Case: - Output-case:			 - - -	 500 500 500	 VAC VAC VAC
Isolation Resistance - Output-Case (at DC500V at 25˚C And 70%RH for 1 min)	RISO	>100	-	-	MΩ
Isolation Capacitance	CISO				pF

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Switching Frequency			300		KHz
Remote ON/OFF control - Positive Logic On = short to - Vin Off = open					 VDC

Output voltage trim range			±10		%
MTBF		5.6x10^5			hrs
Dimensions (W.H.L)		30.5x12.2x45.7			mm
Weight		-	14.8	-	Grams

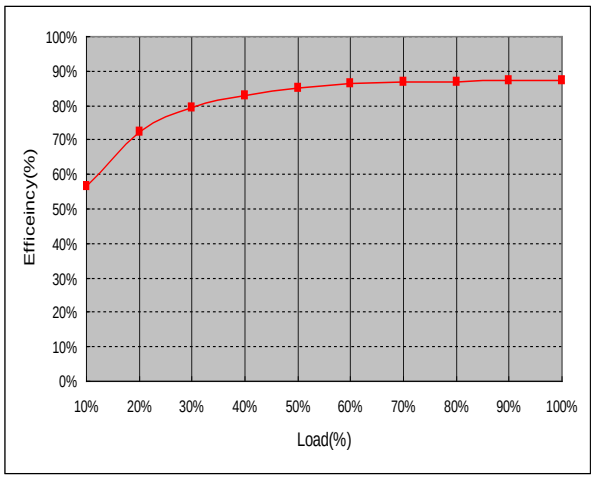
Environmental

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature		-20		+85	˚C
Operating Humidity (RH non-condensing)		5		95	%
Storage Temperature		-40		105	˚C

Characteristic Curves

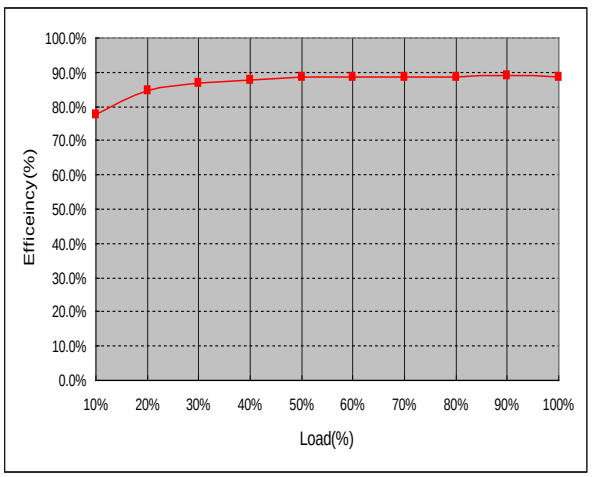
Efficiency Curves

SPS20-48-5



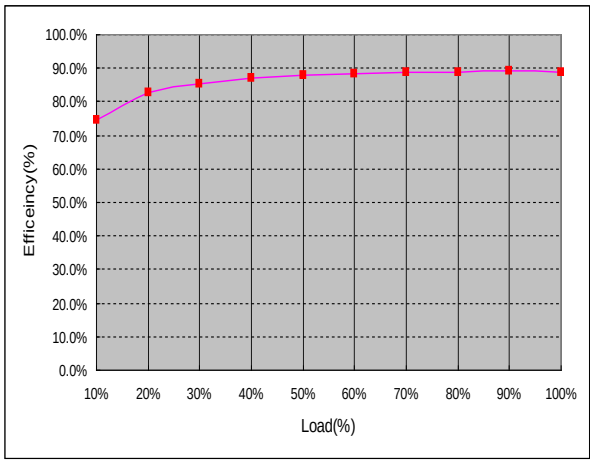
Vin=48V, Vo=5V@4A , At 25°C

SPS20-48-12



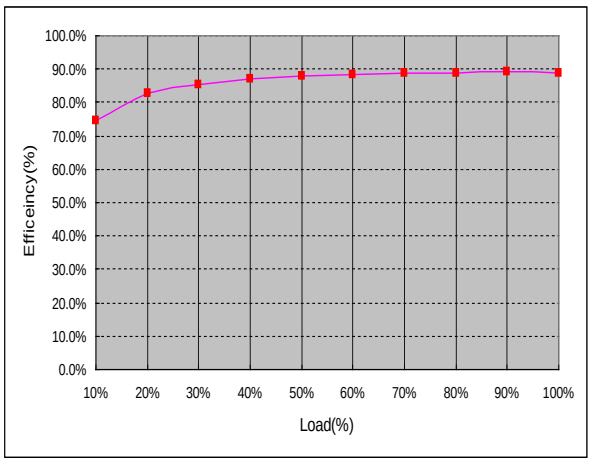
Vin=48V, Vo=12V@1.7A , At 25°C

SPD20-48-1212



Vin=48V, Vo=+12V,-12V@0.85A , At 25°C

SPD20-48-1515



Vin=48V, Vo=+15V,-15V@0.7A , At 25°C

Input Voltage vs Input Current

SPS20 Series – Isolated DC/DC Converters
36 – 76Vdc Input, Maximum Power: 20W

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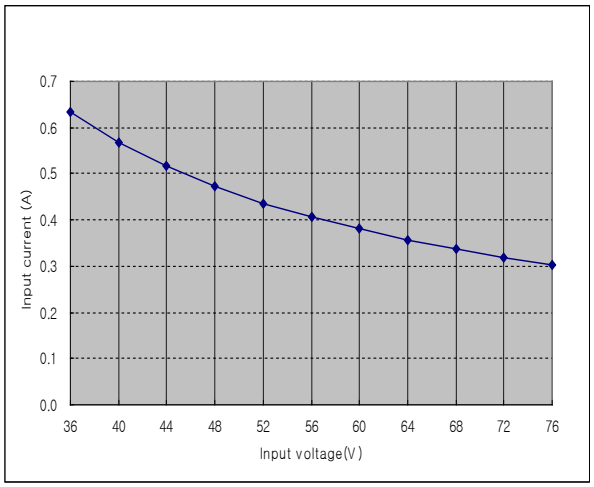
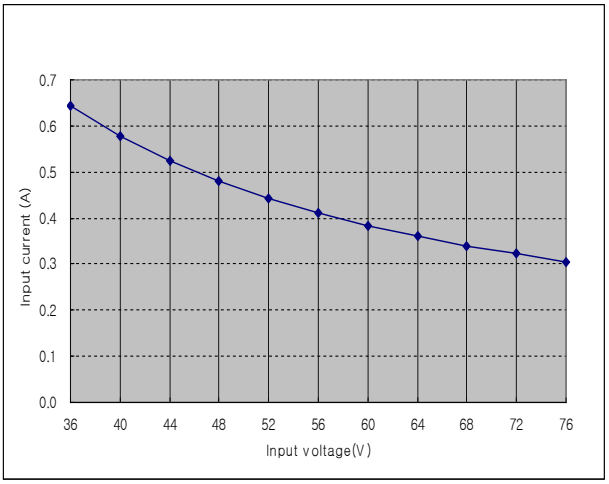
SPS20-48-5

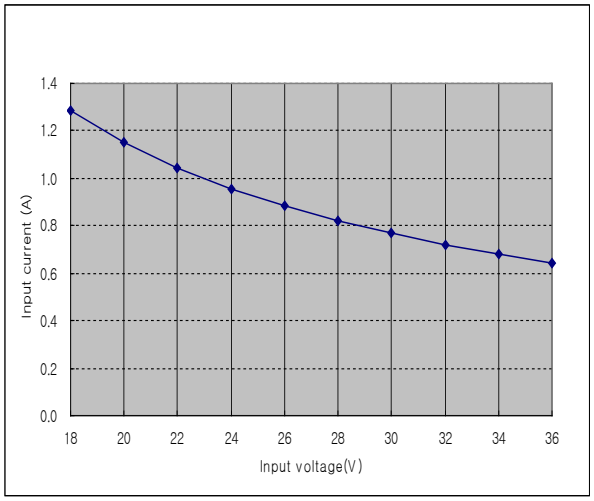


Vin=48V, Vo=5V@4A, At 25°C

SPS20-48-12

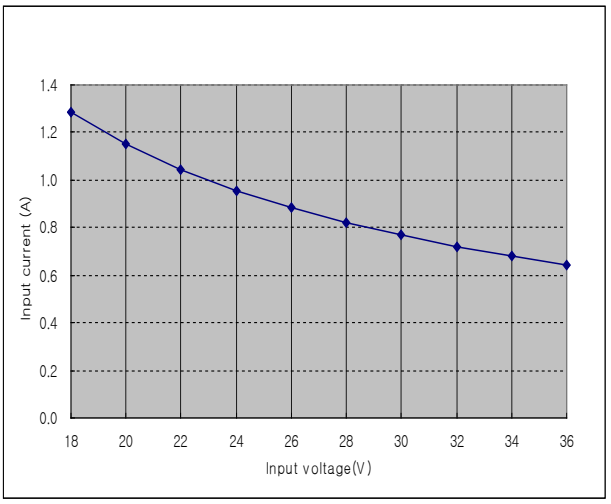


SPD20-48-1212



Vin=48V, Vo=+12V,-12V@0.85A , At 25°C

SPD20-48-1212



Vin=48V, Vo=+15V,-15V@0.7A , At 25°C

Vin=48V, Vo=12V@1.7A , At 25°C

Start-up from Vin

SPS20 Series – Isolated DC/DC Converters
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SPS20-48-5

CH1: 2V/DIV 2ms/DIV

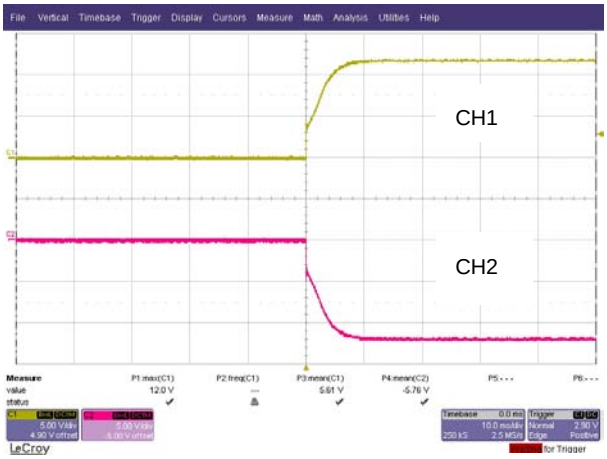
Vin=48V, Vo=5V@4A , At 25°C

SPS20-48-12

CH1: 5V/DIV 5ms/DIV

Vin=48V, Vo=12V@1.7A, At 25°C

SPS20-48-1212



CH1,2: 5V/DIV 10ms/DIV

Vin = 48V, Vo=+12V,-12V@0.85A, At 25°C

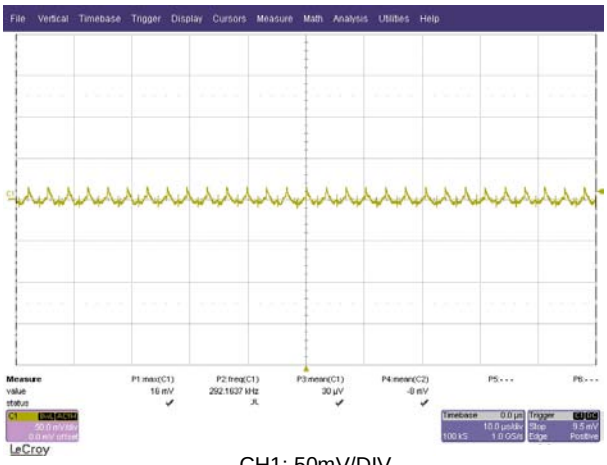
SPS20-48-1515

CH1,2: 10V/DIV 10ms/DIV

Vin = 48V, Vo=+15V,-15V@0.7A, At 25°

Output Ripple/Noise

SPS20-48-5

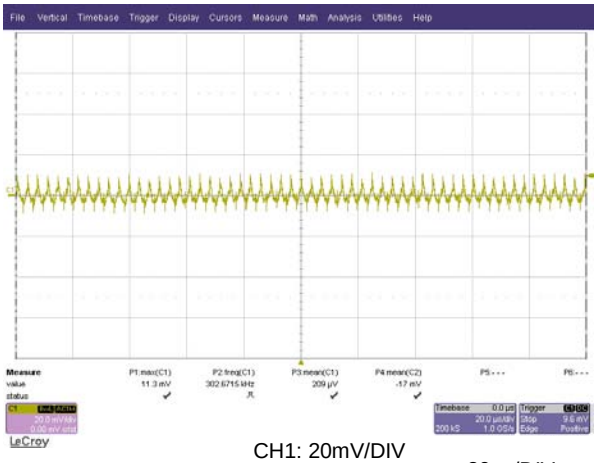


CH1: 50mV/DIV

10us/DIV

Vin=48V, Vo=5V@4A , At 25°C

SPS20-48-12

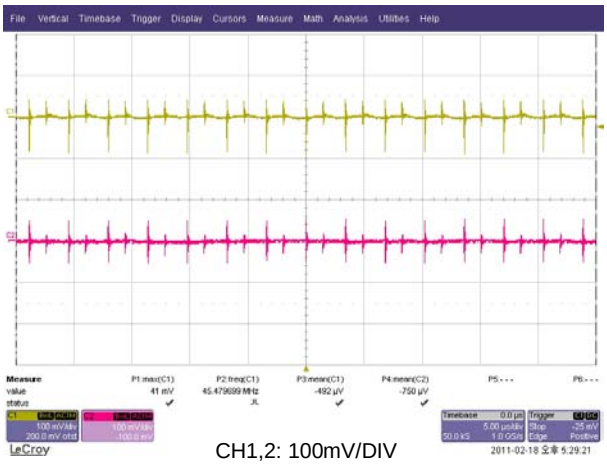


CH1: 20mV/DIV

20us/DIV

Vin=48V, Vo=12V@1.7A,At 25°C

SPS20-48-1212

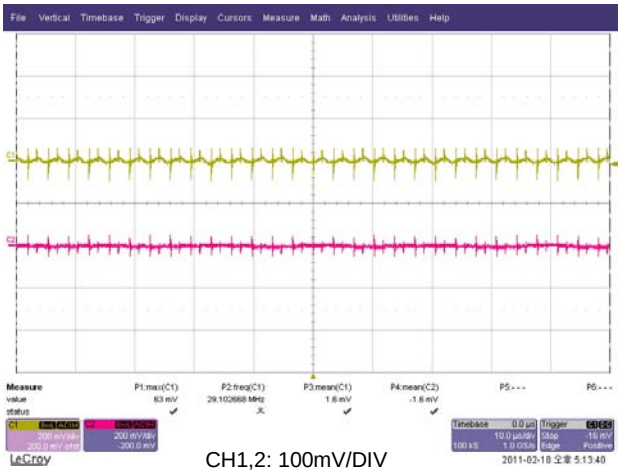


CH1,2: 100mV/DIV

5us/DIV

Vin = 48V, Vo=+12V,-12V@0.85A, At 25°C

SPS20-48-1515



CH1,2: 100mV/DIV

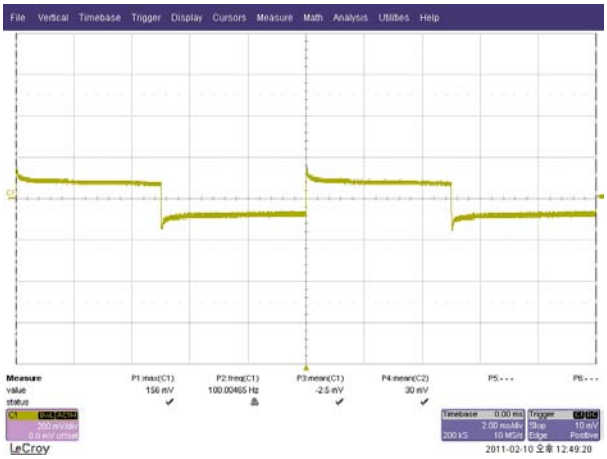
5us/DIV

Vin = 48V, Vo=+15V,-15V@0.7A, At 25°C

Output Load Transient Response

(Dynamic load change from 50% to 100% of full load)

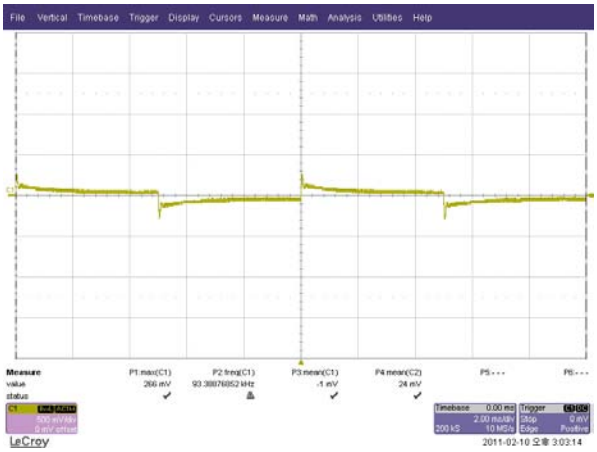
SPS20-48-5



CH1: 200mV/DIV 2ms/DIV

Vin=48V, Vo=5V@4A , At 25°C

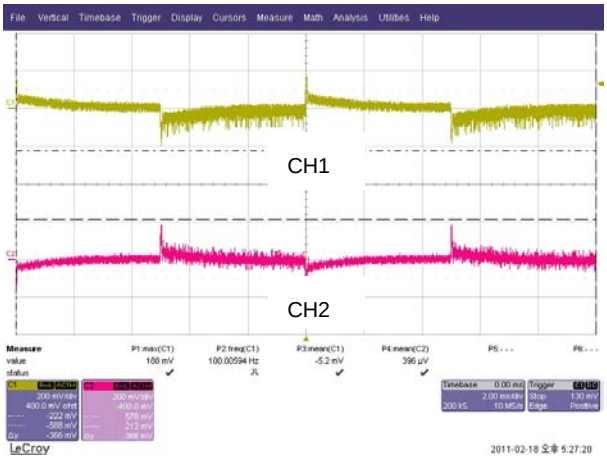
SPS20-48-12



CH1: 500mV/DIV 2ms/DIV

Vin=48V, Vo=12V@1.7A, At 25°C

SPS20-48-1212

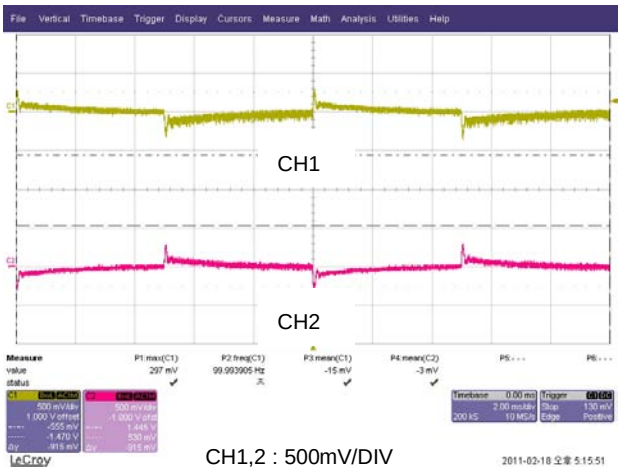


CH1,2 : 200mV/DIV

2ms/DIV

Vin = 48V, Vo=+12V,-12V@0.85A, At 25°C

SPS20-48-1515



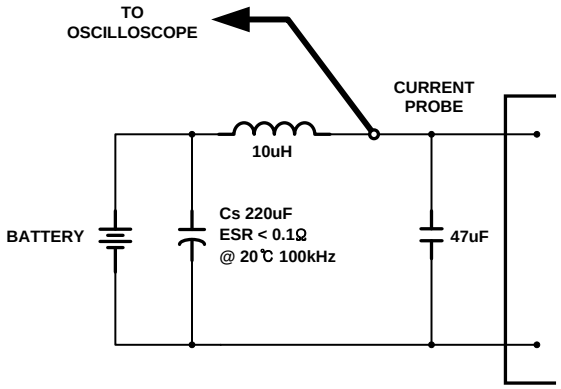
CH1,2 : 500mV/DIV

2ms/DIV

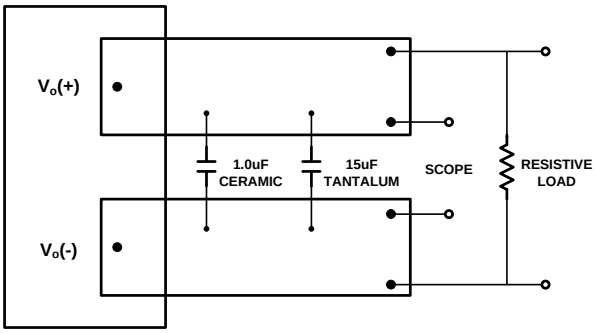
Vin=48V,Vo=+15V,-15V@0.7A, At 25°C

TEST Configurations

Input Reflected Ripple Current Test

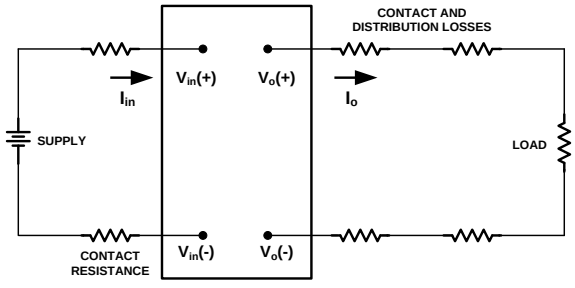


Output ripple and noise Test



* Conductor from Vout-pins to capacitors = 50mm (1.97in)

Output Voltage and Efficiency Test



*All measurements are taken at the module terminals when Socketing, place Kelvin connections at module terminals to Avoid measurement errors due to socket contact resistance

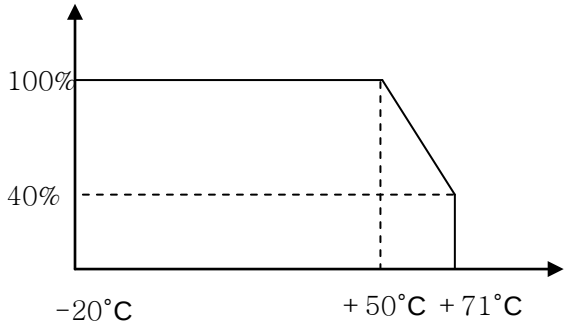
Efficiency

$$\eta = \left(\frac{[V_O(+) - V_O(-)] \times I_O}{[V_{in}(+) - V_{in}(-)] \times I_{in}} \right) \times 100\%$$

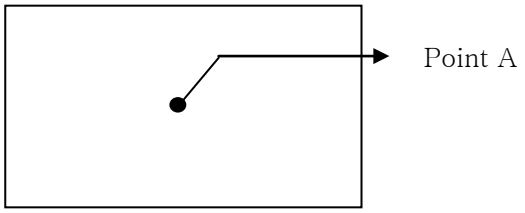
Thermal Considerations

SPS20 series has wide operating temperature range from -20˚C to +85˚C.

However, it should be required a enough air flow for more reliable operation. Output derating curve provide designers with a quantity of a current under the desired ambient temperature and velocity of a airflow



If the device is installed in a system, the device's temperature of point A should be checked if does not exceed specified temperature as below. Please make sure that the ambient temperature does not exceed 85˚C.



Output	20W			
Temp	100˚C			

Feature Description

Input Fuse

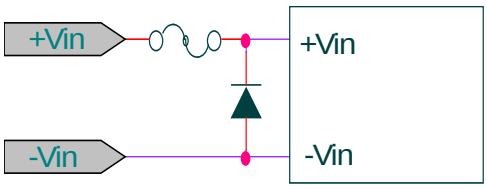
SPS20 series has not built in internal fuse. Therefore in order to ensure protection and safety fuses should be used at input line of converter

We recommend to use a slow blow type fuse with a typical value of about twice the maximum input current, calculated at low line with the converter minimum efficiency.

Input Reverse-polarity voltage protection

Input reverse voltage protection has not built in this product.

So, you can set up a circuit externally as described below if necessary



Input Output Filter

SPS series have an internal input filter. To minimize the ripple and noise of the input voltage, additional external capacitor is required (10uF ~ 680uF)

To reduce a output ripple and noise, external capacitor is required at the output of the device

Remote ON/OFF Control (CNT)

By using CNT pin you can control the output without turning the input power on or off.

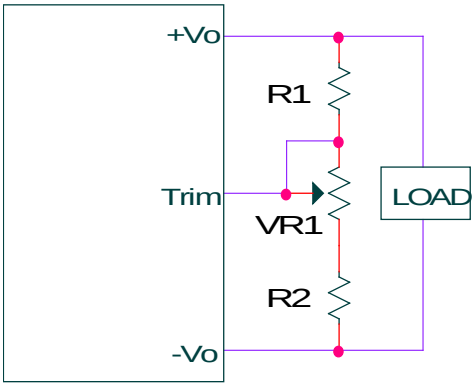
If you need not this function short CNT Pin to –Vin.

CNT Level for –Vin	OUTPUT
Open	OFF
Short	ON

Output voltage variation (Trim)

Output Voltage adjusted by using trim pin within ±10% of output voltage.

Use of trim function can cause the output power to increase, so you should not use beyond the SPS's specified output power rating



Output voltage	VR	R1	R2
3.3V	500Ω	1kΩ	560Ω
5V	1kΩ	1kΩ	680Ω
12V	1kΩ	3.9kΩ	680Ω
15V	1kΩ	5.6k	750Ω

Over current Protection(OCP)

SPS series built in over current protection circuit Which operates when the output current is over 105% of rating and automatically recovers when over current condition is removed

If load is connected to a inductive or constant current load such as lamp of motor, output may not start up.

Over Voltage Protection(OVP)

SPS series has not built in overvoltage protection circuit. So, you need to set up a circuit externally which can protect the over voltage if necessary.

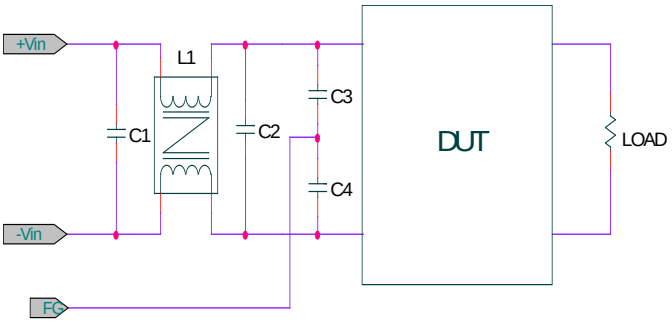
Soldering Information

The product is intended for through hole mounting in a PCB, When wave soldering is used, the temperature on the pins is specified to maximum 260˚C for maximum 10 seconds

when hand soldering, care should be taken to avoid direct contact between the hot soldering iron tip and the pins for more than a few seconds in order to prevent overheating.

EMI Characteristic (conducted Emission)

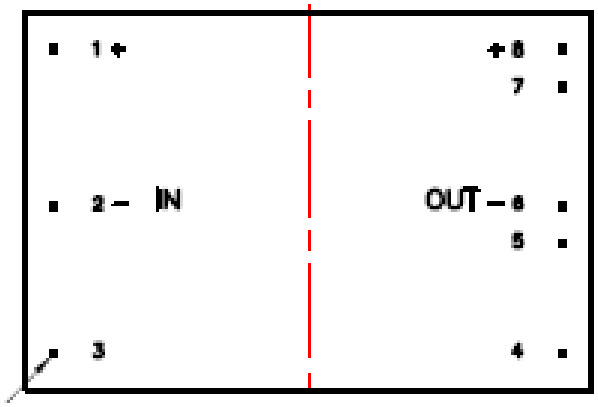
In order to reduce conducted noise install an external input filter as shown in below.



Model Number	L1	C1	C2	C3,C4
SPS20-24-5	3mH	22uF	100uF	222
SPS20-48-5	2mH	22uF	100uF	222

Complies with CISPR 22 CLASS B

Pin assignments



Single Output

PIN NO	NAME	FUNCTION
1	+Vin	Positive terminal for 48V
2	-Vin	Negative terminal for 48V
3	CNT	Logic signal reference to Vin to Turn the converter ON/OFF
4	Trim	Output voltage variation
5, 6	-Vout	Negative terminal for Vout
7, 8	+Vout	Positive terminal for Vout

Dual Output

PIN NO	NAME	FUNCTION
1	+Vin	Positive terminal for 48V
2	-Vin	Negative terminal for 48V
3	CNT	Logic signal reference to Vin to Turn the converter ON/OFF
4	-Vout	Negative terminal for Vout
5	No Pin	
6	COM	
7	No Pin	
8	+Vout	Positive terminal for Vout

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36 – 76Vdc Input, Maximum Power: 20W

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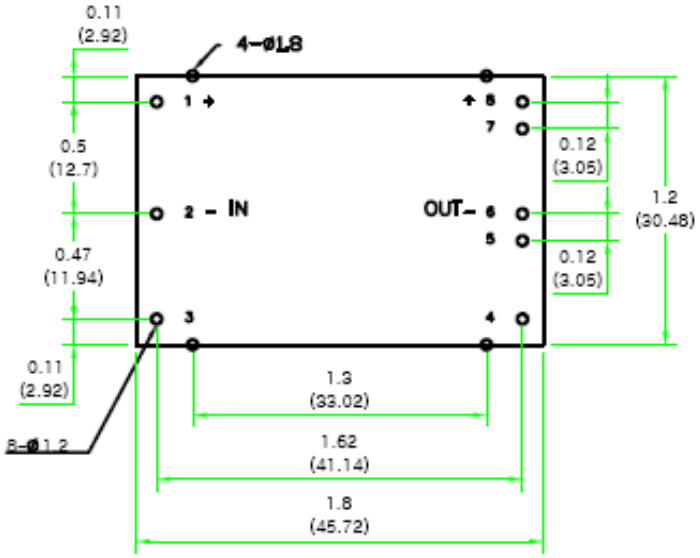
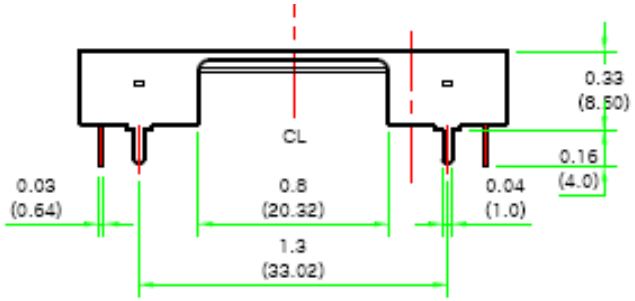
Mechanical Specification

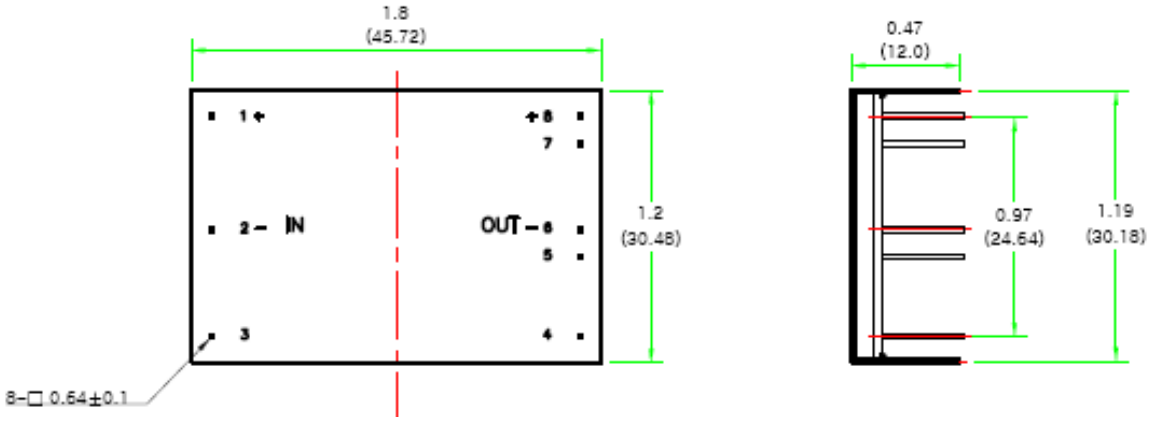
TOP VIEW



SIDE VIEW



OTHER VIEW

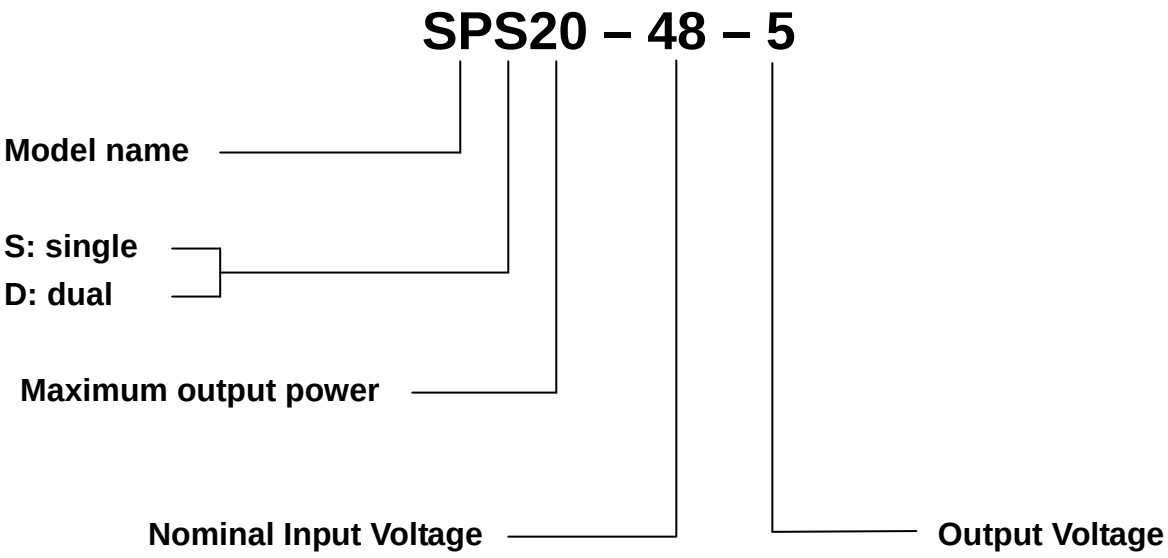


All dimensions are inches and mm

Ordering Information

	Output1, Output2	Maximum Power	Ripple & Noise Typ.	Efficiency Typ.	Model Number
18 – 36V	3.3V@4A	13.2W	50mVp-p	86%	SPS20-24-3R3
	5V@4A	20W	50mVp-p	88%	SPS20-24-5
	12V@1.7A	20.4W	120mVp-p	90%	SPS20-24-12
	15V@1.4A	21W	150mVp-p	89%	SPS20-24-15
	+12V@850mA, -12V@850mA	20.4W	120mVp-p	89%	SPD20-24-1212
	+15V@680mA, -15V@680mA	20.4W	150mVp-p	89%	SPD20-24-1515
36 – 76V	3.3V@4A	13.2W	50mVp-p	86%	SPS20-48-3R3
	5V@4A	20W	50mVp-p	87%	SPS20-48-5
	12V@1.7A	20.4W	120mVp-p	89%	SPS20-48-12
	15V@1.4A	21W	150mVp-p	89%	SPS20-48-15
	+12V@850mA, -12V@850mA	20.4W	120mVp-p	88%	SPD20-48-1212
	+15V@680mA, -15V@680mA	20.4W	150mVp-p	89%	SPD20-48-1515

Part number structure



HEAD OFFICE & FACTORY

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GENERAL SALES INQUIRIES

Please feel free to contact : sales@powerplaza.co.kr