

# SP10 Series

## 10W ISOLATED DC-DC CONVERTER



### FEATURES 5V, 12V, 24V, 48V Inputs / Single, Dual Outputs

- High Efficiency
- Wide 2:1 Input Range
- Small Footprint / Low Profile
- Built-in Over Current Protection Circuit
- Input-Output Isolation
- Remote On/Off Control (CNT)
- Output Voltage Adjustment (TRM) (Single Outputs)
- Open Case Type
- Long Life Design (Employ Only Ceramic Capacitors)
- Wide Operating Temperature Range (-40°C ~ 85°C)
- 5 Year Warrant

### ELECTRICAL SPECIFICATIONS

<b>Input</b>	<ul style="list-style-type: none"> <li>• Input Range ..... DC 5V(4.5 - 9), 12V(9 - 18), 24V(18 - 36), 48V(36 - 76)</li> <li>• Efficiency ..... 74 - 86% Typ.</li> <li>• Remote On/Off Control .....             <ul style="list-style-type: none"> <li>On : Short to -Vin</li> <li>Off : Open</li> </ul> </li> </ul>
<b>Output</b>	<ul style="list-style-type: none"> <li>• Output Voltages ..... 3.3V, 5V, 12V, 15V, ±12V, ±15V</li> <li>• Output Voltage Tolerance ..... ±2.0% (Single), ±3.0% (Dual)</li> <li>• Line Regulation ..... ±0.5% Max.</li> <li>• Load Regulation ..... ±1.0% Max. (Single), ±2.5% Max. (Dual : Minimum Load 10%)</li> <li>• Ripple and Noise ..... 1% of Vout (Bandwidth : 20MHz)</li> <li>• Output Voltage Trim Range ..... ±10.0% Typ.</li> </ul>
<b>Protection Circuit</b>	<ul style="list-style-type: none"> <li>• Over Current Protection ..... Work Over 105% of Rating (Current Limited Output) (<b>NOTE 1</b>)</li> </ul>
<b>Electrically Isolated</b>	<ul style="list-style-type: none"> <li>• Isolation ..... Input-Output, Input-Case, Output-Case / DC500V, 100MΩ</li> <li>• High Pot ..... Input-Output, Input-Case, Output-Case / AC500V, 1Min.</li> </ul>

### ENVIRONMENTAL

• Operating Temperature Range	..... -40°C ~ 85°C
• Operating Humidity (Non-Condensing)	..... 5% ~ 95%RH
• Storage Temperature Range	..... -40°C ~ 105°C
• Storage Humidity (Non-Condensing)	..... 5% ~ 95%RH
• Cooling Method	..... Convection, Forced Air
• MTBF (MIL-HDBK-217F)	..... 4.8 x 10 <sup>5</sup> hrs
• Safety (Single Output)	..... UL (UL 60950-1) / CE_LVD (EN 60950-1) through UL

**NOTE** 1. Long term continuous operation into a short circuit will compromise the reliability of the unit.

ORDERING INFORMATION

Input	Output1	Output2	Maximum Power	Ripple&Noise Max.	Efficiency Typ.	Model Number
4.5 - 9V	3.3V@1.60A		5.28W	50mVp-p	75%	<b>SPS10-5-3R3</b>
4.5 - 9V	5V@1.60A		8.00W	50mVp-p	78%	<b>SPS10-5-5</b>
4.5 - 9V	12V@0.70A		8.40W	120mVp-p	81%	<b>SPS10-5-12</b>
4.5 - 9V	15V@0.60A		9.00W	150mVp-p	83%	<b>SPS10-5-15</b>
4.5 - 9V	+12V@0.35A	-12V@0.35A	8.40W	120/120mVp-p	84%	<b>SPD10-5-1212</b>
4.5 - 9V	+15V@0.30A	-15V@0.30A	9.00W	150/150mVp-p	84%	<b>SPD10-5-1515</b>
9 - 18V	3.3V@2.00A		6.60W	50mVp-p	77%	<b>SPS10-12-3R3</b>
9 - 18V	5V@2.00A		10.00W	50mVp-p	81%	<b>SPS10-12-5</b>
9 - 18V	12V@0.90A		10.80W	120mVp-p	84%	<b>SPS10-12-12</b>
9 - 18V	15V@0.70A		10.50W	150mVp-p	86%	<b>SPS10-12-15</b>
9 - 18V	+12V@0.45A	-12V@0.45A	10.80W	120/120mVp-p	86%	<b>SPD10-12-1212</b>
9 - 18V	+15V@0.35A	-15V@0.35A	10.50W	150/150mVp-p	86%	<b>SPD10-12-1515</b>
18 - 36V	3.3V@2.00A		6.60W	50mVp-p	75%	<b>SPS10-24-3R3</b>
18 - 36V	5V@2.00A		10.00W	50mVp-p	80%	<b>SPS10-24-5</b>
18 - 36V	12V@0.90A		10.80W	120mVp-p	85%	<b>SPS10-24-12</b>
18 - 36V	15V@0.70A		10.50W	150mVp-p	85%	<b>SPS10-24-15</b>
18 - 36V	+12V@0.45A	-12V@0.45A	10.80W	120/120mVp-p	85%	<b>SPD10-24-1212</b>
18 - 36V	+15V@0.35A	-15V@0.35A	10.50W	150/150mVp-p	85%	<b>SPD10-24-1515</b>
36 - 76V	3.3V@2.00A		6.60W	50mVp-p	74%	<b>SPS10-48-3R3</b>
36 - 76V	5V@2.00A		10.00W	50mVp-p	80%	<b>SPS10-48-5</b>
36 - 76V	12V@0.90A		10.80W	120mVp-p	85%	<b>SPS10-48-12</b>
36 - 76V	15V@0.70A		10.50W	150mVp-p	85%	<b>SPS10-48-15</b>
36 - 76V	+12V@0.45A	-12V@0.45A	10.80W	120/120mVp-p	84%	<b>SPD10-48-1212</b>
36 - 76V	+15V@0.35A	-15V@0.35A	10.50W	150/150mVp-p	84%	<b>SPD10-48-1515</b>

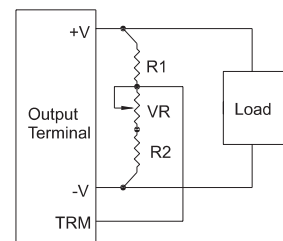
PIN ASSIGNMENTS

Single Output	Dual Output
1. +Vin	1. +Vin
2. - Vin	2. - Vin
3. CNT	3. CNT
4. TRM	4. - Vout
5. - Vout	5. No Pin
6. No Pin	6. COM
7. +Vout	7. +Vout

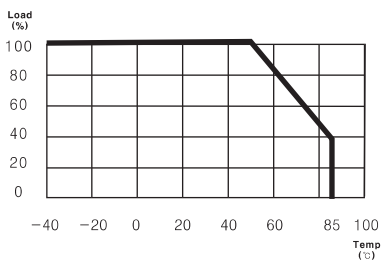
EXTERNAL PARTS

Model	Output Voltage	VR	R1	R2
SPS10	3.3V	500Ω	1.0kΩ	560Ω
	5V	1.0kΩ	1.0kΩ	680Ω
	12V	1.0kΩ	3.9kΩ	680Ω
	15V	1.0kΩ	5.6kΩ	750Ω

TRIM METHOD



DERATING CURVE



DIMENSIONS

